# Bloomberg Businessweek

December 12, 2022


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In rosettes of lustrous magenta, sprigs of rich ochre and blooms of soothing lavender, the corals of the Red Sea sway beneath waters of remarkable transparency to provide a signal of promise in a world threatened by climate change.

These are not just corals but thermo-resistant corals. They are the product of a 12,000-year evolutionary process that gave them unique tolerance to the rising sea temperatures that are destroying 90% of the world's coral reefs and the 45% of marine life which depends on them.

# In a garden of coral, a cleaner tourism is flowering

What makes this ecosystem even more precious is that Red Sea coral is being cultivated to replenish the world's most threatened reefs as part of an unrivaled initiative that combines responsible development with regenerative tourism. The Red Sea, a luxurious and regenerative new destination on the West coast of Saudi Arabia, will enable visitors to witness this stunning kaleidoscope of marine beauty while simultaneously setting a gold standard in tourism that can benefit the entire planet.

Developed by responsible multi-project developer, Red Sea Global, The Red Sea is a 28,000 km2 site that includes an archipelago of 90 islands, sweeping desert dunes and a mountain range containing 50 dormant volcanic cones. The destination encompasses the Al Wajh Lagoon, home to the world's fourth-largest barrier reef system and one of the most bountiful, with 280 recorded species of fish and 314 types of coral.

Unlike other reefs, which have suffered from their proximity to tourism developments, this marine ecosystem is set to reap benefits which can be replicated internationally. Through a partnership with Saudi Arabia's King Abdullah University of Science and Technology (KAUST), Red Sea Global is supporting the farming of thermo-resistant corals. Environmental scientists have collated approximately 1,000 crates of coral and are nurturing them on "unique floating nursery platforms", says the developer's CEO, John Pagano. "We are already observing rapid coral growth and have demonstrated huge potential to produce large numbers of coral by breeding them."

This work, he says, "could very well support the conservation of coral reefs worldwide" and will help Red Sea Global towards its ambitious target of achieving a 30% net conservation benefit by 2040. In doing so, it will set new standards in the development and tourism sectors and encourage others to rethink how they operate to minimize their impact on the environment.

An aquatic paradise, the Al Wajh reef stems from the end of the Ice Age, when coral larvae surged through the Gulf of Aden and into the Red Sea through a bottleneck of warm waters which filtered out species that could not survive high temperatures. The resultant coral ecosystem has exceptional resilience to marine heat waves and is one of the few thriving reefs left in the world.

The Red Sea will welcome its first guests in 2023 when the first three hotels open; the Six Senses Southern Dunes, The Red Sea, St Regis Red Sea Resort and Nujuma, A Ritz-Carlton Reserve. By early 2024, 13 more hotels will open and, by completion in 2030, the project will have 50 hotels and 8,000 rooms across 22 islands.

On Shura Island, hub of The Red Sea, Foster + Partners have created the "Coral Bloom" concept, linking all 11 hotels and amenities in one complementary design, powered by renewable energy and inspired by the vividly colored invertebrates on the reef that surrounds it. Guests can dive, kayak and windsurf or head to the mainland for mountain biking and exploration of the region's many cultural and historical sites.

Amaala, a second luxury tourism destination set to open along the Red Sea coast in 2024, will have a focus on wellness and the arts. Alongside sumptuous waterside villas, Amaala will host world-leading cultural events and be home to a contemporary art gallery and artisan workshops. The resort will offer activities from yachting and tennis to the traditional sports of falconry and camel racing.

Red Sea Global is determined that these two ambitious regenerative developments will not threaten the delicate environments in which they stand but protect and improve them by enriching natural capital.

The Red Sea and Amaala will be carbon neutral. Less than 1% of the total site will be developed on the former, with 75% of the islands in the archipelago left untouched and nine designated as special conservation zones. At Amaala just 5% of the land will be developed.

The Red Sea has banned single use plastics, manufacturing takes place off-site, minimizing environmental impact, and non-recyclable material is incinerated to make bricks, so nothing goes to landfill. Buildings are made from low-carbon materials, while recycled steel is used to create 73 orb-shaped villas for a resort on Sheybarah Island.

The Saudi climate provides an unlimited source of solar energy. Sun-powered desalination plants will tackle water scarcity. A team of 6,000 workers are building solar farms to generate power for the world's biggest microgrid of

renewable energy and the world's largest battery storage facility, with capacity to store 1,200 Megawatt hours of electricity. As a result, The Red Sea and Amaala will run entirely on renewable energy, day and night.

All vehicles, from cars to sanitation trucks, will be electric-powered. Red Sea Global is experimenting with boats and planes fueled by hydrogen. It is planting 6 million mangrove trees to reduce global warming with a $CO_2$ offset equivalent to the annual emissions of 14,000 cars.

In total, Red Sea Global will create 120,000 jobs through these two projects, many for young Saudis, and generate US$ 9 billion (SAR 33 billion) for national GDP, supporting the Kingdom's Vision 2030 plan to drive social reform and diversify the economy beyond oil, while preserving its cultural and environmental heritage.

Pagano has a fine record in delivering multi-billion dollar investments of global importance. He led the positioning of London's Canary Wharf as a landmark headquarters for global financial companies and a prestigious residential location. He also oversaw the $3.5 billion Baha Mar luxury tourism destination in the Bahamas.

By drawing on Saudi Arabia's expertise in artificial intelligence and machine learning, Red Sea Global will ensure that guests at both destinations enjoy seamless smart city services while enjoying life-changing experiences at no cost to the environment.

The Red Sea and Amaala represent a marriage of nature and technology. Red Sea Global is reimagining the future of regenerative tourism and responsible development by creating these spectacular destinations from scratch whilst ensuring that people and planet are put first in every decision made. "Our company," says Pagano, "is one big Petri dish for innovation."

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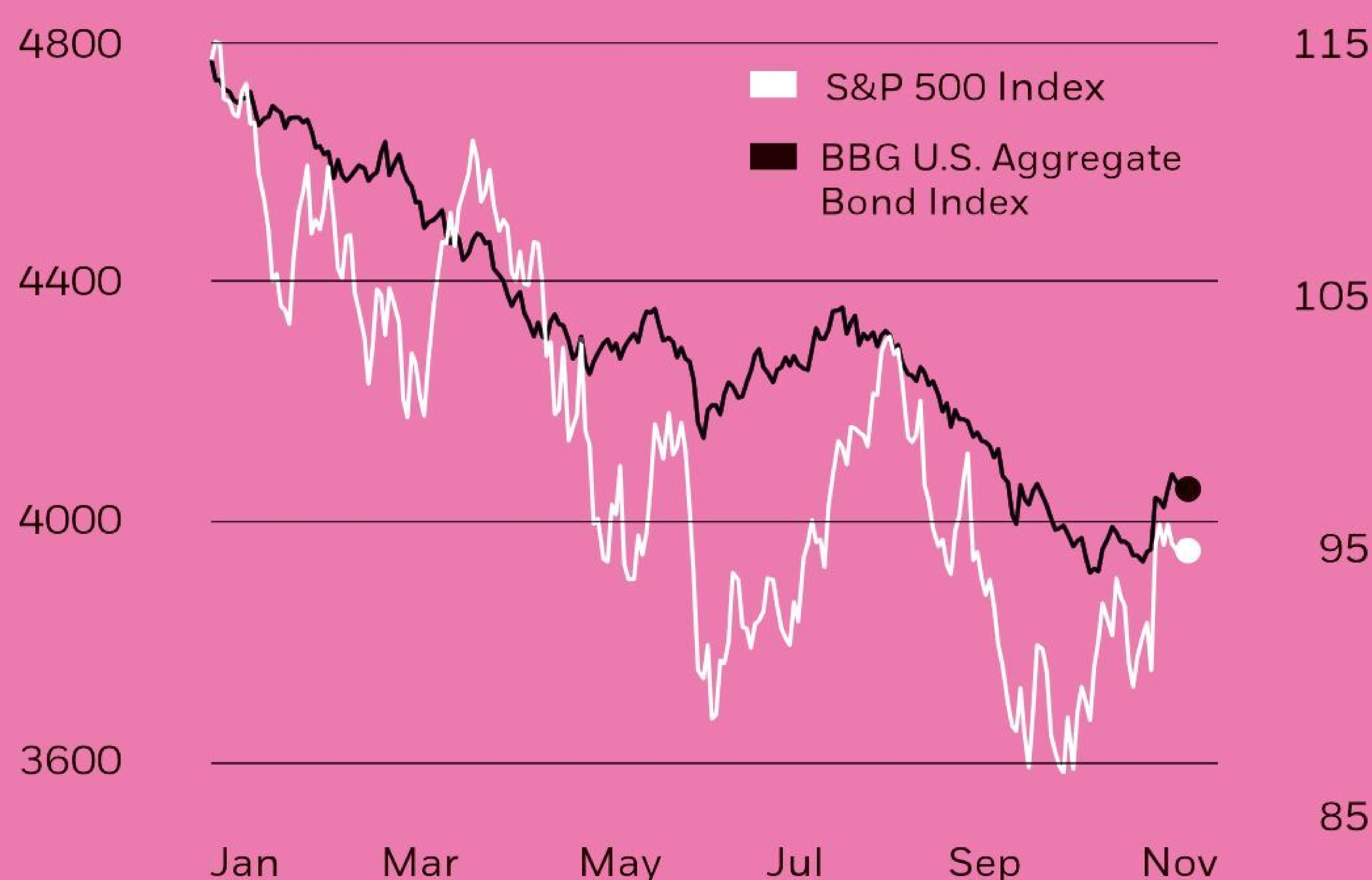
# FINDING SILVER LININGS WITH TAX-LOSS HARVESTING

As persistent inflation and rising rates continue to disrupt markets, the pain has been widespread. But there may be a silver lining. With both stocks and bonds down this year, investors are presented with a rare opportunity to rebalance their portfolios.

**2022: A YEAR OF MARKET DECLINES**




*Source: Bloomberg, as of 11/22/2022*

**Index performance does not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Past performance does not guarantee future results.**

Although it can be difficult for clients to want to stay invested after the massive returns we saw in 2021, the old saying still goes that "what seems like a curse may be a blessing." With tax-loss harvesting, financial advisors can help clients keep their long-term goals in sight using iShares ETFs, while taking steps to mitigate some of the short-term pain of declining investments.

**Help your clients end the year stronger**

Tax-loss harvesting is the act of selling an investment below its purchase price to realize a loss in a taxable account. Investors may use sales proceeds to either buy similar investments to maintain current portfolio exposures, or use the opportunity to lean into higher conviction strategies.

Given the drawdowns in both equities and bonds this year, financial advisors have an unprecedented opportunity to provide value to their clients in a down year.

Selling single stocks or individual bonds at a loss and reinvesting in ETFs or mutual funds may avoid violating wash sale rules. To be sure, tax-loss harvesting opportunities are plentiful; many formerly high-flying stocks have fallen considerably.

Similarly, investors can consider selling out of individual bonds and buying diversified fixed income ETFs or mutual funds as a way to realize losses. With many investments underwater, this provides advisors with an opportunity to tax-loss harvest across their entire portfolio, saving clients tax money and helping them to stay invested at the same time.

BlackRock can help financial professionals identify areas to tax-loss harvest across a client's portfolio. Upload your portfolio to *BlackRock's Tax Evaluator* tool to see price return data for your funds, uncover potential tax-loss harvesting opportunities & discover replacement ideas. The *Tax Evaluator* tool also allows you to keep track of estimated capital gains and analyze performance and fees for your investments, helping you achieve more favorable after-tax results and to help keep your clients invested. While current market volatility may get your clients' portfolios down, tax-loss harvesting can add value back to finish 2022 stronger.

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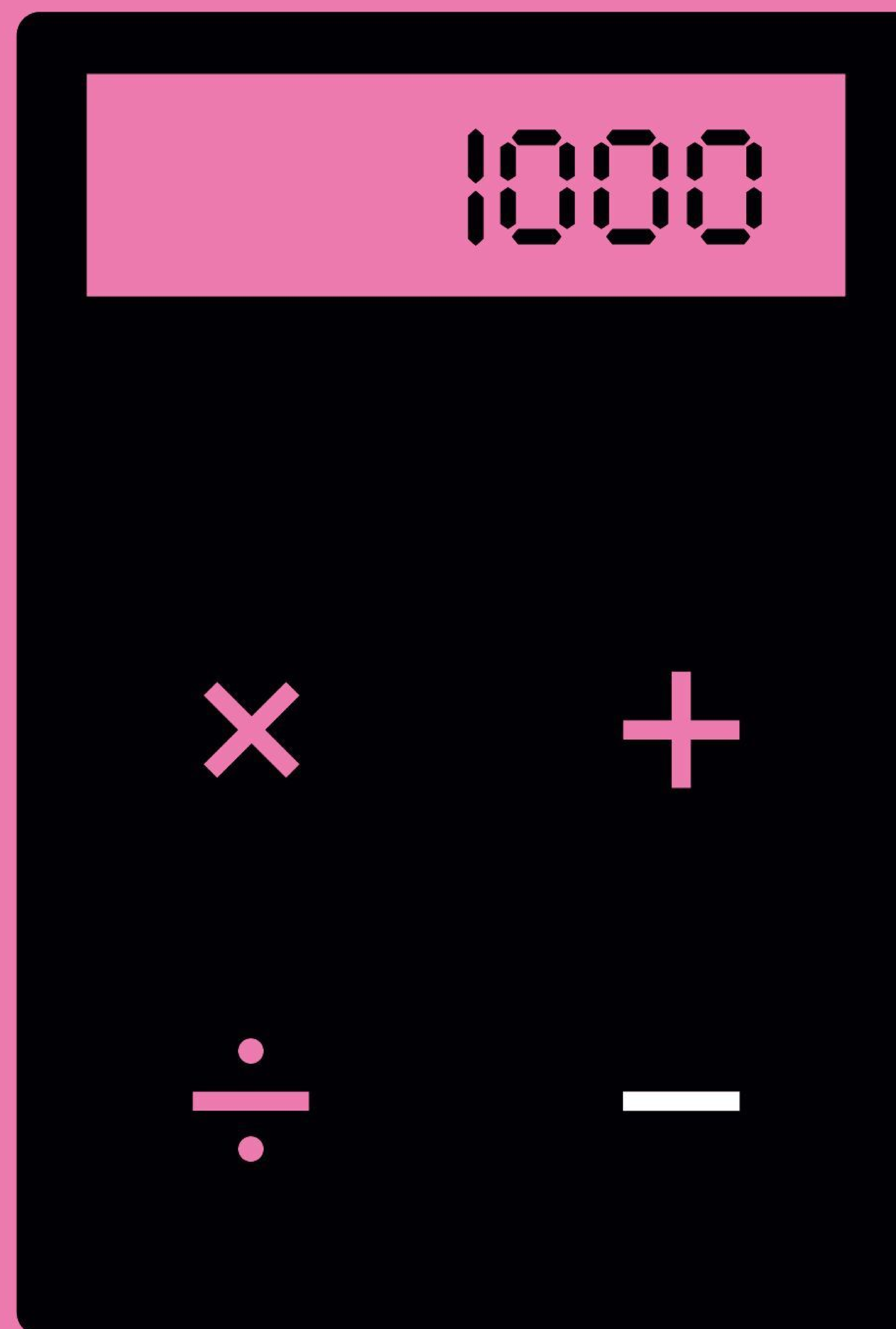


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Bloomberg Businessweek

December 12, 2022

◀ Misfits Market wants to turn ugly organics into supper-time swans

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## ■ COVER TRAIL

How the cover gets made

❶

"This week's our annual Good Business issue!"

"Huh."

"That's all you've got?"

"You're hitting me right in the solar plexus of my existential crisis. It's hard to believe in good business in light of, you know, ESG skepticism, SBF, Twitter on fire..."

"Cheer up! There's still a lot of good out there."

"Do tell—I could use a fat dose of positivity."

"Well, this issue looks at companies tackling food waste, deforestation—"

"OK. Slight uptick in perspective."

"We cover groups trying to help migrants—"

"Serotonin level: Rising."

"And...chocolate!"

"Way to bury the lede! It's like I've got a rainbow in my soul!"

"Think you can translate that to a cover?"

Cover: Photo illustration by 731; photos: Ryan Duffin for *Bloomberg Businessweek*; Getty Images (5)

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엑스포 참가하러 왔소이다。

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● Globally, 647 million people have been infected with the coronavirus, and

6.6m

have died. With protests continuing in Beijing, Shanghai and other major cities, China announced on Dec. 7 that it is easing some of its stringent Covid Zero restrictions and accelerating vaccination among the elderly. ▷ 10

## ● War in Ukraine

► The Kremlin blamed Ukraine for a series of drone attacks that hit airfields in Saratov, Ryazan and Kursk on Dec. 5 and 6, the deepest strikes into Russia since it invaded its neighbor in February. Ukraine hasn't claimed responsibility, but President Volodymyr Zelenskiy told troops on Dec. 6 that "the combat zone has become larger."

► In response to the price cap the G-7 nations set on Russian oil on Dec. 3, Moscow could set a price floor. According to two officials familiar with the plan, Moscow may impose a fixed price or stipulate a maximum discount to international benchmarks.

► Kyiv residents sought shelter in the city's subway system on Dec. 5 as Russia launched another missile attack targeting critical civilian infrastructure and causing massive water and power cuts across the country.

● German authorities thwarted a right-wing attempt to overthrow the government.

More than 3,000 law-enforcement officers carried out the biggest-ever raid targeting far-right extremists on Dec. 7. The 25 people apprehended included a nobleman ringleader and a former lawmaker with the anti-immigrant Alternative for Germany. In a troubling echo of the 1930s, the group had allegedly planned to attack the Reichstag in Berlin.

● Georgia has reelected Raphael Warnock to the

US Senate in the state's Dec. 6 runoff. Warnock defeated his Republican challenger, the former football star Herschel Walker, by almost 3 percentage points. His win cements the Democratic edge in the Senate at a somewhat less narrow 51-49.

● After racking up about $190 billion in losses during the pandemic, the aviation industry is set for a rebound. The International Air Transport Association predicted on Dec. 6 that the world's airlines, led by North American carriers, will make a collective profit in 2023 of about

$4.7b

● Indonesia's parliament on Dec. 6 passed a bill outlawing extramarital sex.

The law, which would apply to citizens and foreigners in the country, also limits how much people can criticize the president, restricts the rights of LGBTQ citizens and increases penalties on women who have abortions. President Joko Widodo has said he will sign it.

● "We got to see the inner workings of the Trump Organization: the greed, the lies, the cheating."

Manhattan District Attorney Alvin Bragg spoke after a jury convicted the Trump Organization on all 17 counts against it, including conspiracy, criminal tax fraud and falsifying business records. Former President Trump, who wasn't personally charged, says his family business will appeal the verdict.

● Cyril Ramaphosa briefly considered resigning as president of South Africa after an advisory panel issued a scathing assessment on Nov. 30 of his handling of the theft of at least $580,000 in cash that had been stuffed into a sofa at his game farm. He later backtracked, filed a lawsuit challenging the findings on Dec. 5 and is pressing ahead with his campaign to win a second term.

● Jamie Dimon likened crypto tokens to "pet rocks" on Dec. 6. The JPMorgan Chase CEO has been openly skeptical about digital assets, previously calling them "decentralized Ponzi schemes." The same day, hedge fund Orthogonal Trading was declared in default, another victim of the FTX implosion. It had almost $36 million of crypto loans. ▷ 26

KYIV: JEFF J. MITCHELL/GETTY IMAGES. WARNOCK: NATHAN POSNER/GETTY IMAGES. BRAGG: VICTOR J. BLUE/BLOOMBERG. ROCK: GETTY IMAGES

# Don't Dismiss Europe's Objection To 'Buy American'

French President Emmanuel Macron, during his recent visit to Washington, warned that US trade policy could "fragment the West." That might sound alarmist, but he was right. President Joe Biden's programs to subsidize clean-energy investment and high-tech manufacturing have much to recommend them—but, executed incautiously, they do pose a threat to international economic cooperation. The White House should heed Macron's message and guard against this risk.

A big expansion of investment in clean energy is crucial. But the Inflation Reduction Act, which Biden signed into law in August, channels much of its $369 billion outlay to US producers. (For instance, electric cars made in the US can get up to $7,500 in tax breaks; those made in Europe can't.) Wherever possible, the IRA's programs prioritize "Buy American" and US union labor. The CHIPS and Science Act, meant to support domestic makers of semiconductors, is a similar case. These policies set out to tilt the playing field for international trade, putting foreign producers at a big disadvantage.

Perhaps you're wondering why that's such a bad thing. Isn't Biden right to be looking out for US companies and workers, favoring them as much as possible when directing public money toward vital investments? After all, other governments can subsidize domestic producers if they wish; if they follow the US example, so much the better. This is the line Biden's officials are taking in response to Europe's complaints.

There are two big problems. The first is that domestic preferences make public investment less cost-effective. Investment in clean energy matters because climate change is an existential risk, not because the US needs to push wages higher or find new jobs for pools of idle labor. (With the Federal Reserve struggling to control inflation, those are the least of Washington's concerns.) The faster and cheaper the transition to clean energy, the better—even if, perish the thought, it means handing foreigners some of the business.

The other problem is that protectionism sets the US at odds with its international commitments. Free-trade principles are embodied in the rules of the World Trade Organization. Governments long ago accepted that subsidies can introduce trade barriers, and recognized their mutual interest in preventing this.

Enforcing these rules on a global basis has been difficult, to say the least. That's partly because governments, led by the US, have let the WTO's systems fall into disrepair. Yet outright disavowal of the common interest in liberal trade is a worrisome departure. Former President Donald Trump repudiated the idea as carelessly as you might expect. When it comes to trade, Biden seems to agree with him. If Europe responds to this new US posture with big, bold "Buy European" policies of its own—and further rounds of retaliation and counterretaliation follow—it won't be long before the multilateral trading system is wrecked, and the West is indeed fragmented.

What makes this all too plausible is that Biden and Macron aren't so far apart. Europe's record on liberal trade outside its own market is far from impeccable. Macron might very well envy Biden's success in indulging his protectionist instincts.

At their meeting, the presidents appeared to smooth things over. Biden conceded that the IRA has "glitches" and might need "tweaks," though what form these could take is unclear. Better than tweaks would be for Biden to rethink his basic approach. It comes down to a simple proposition America once championed. The US, Europe and the world as a whole would be better off—and stand a better chance of winning the fight against climate change—if liberal trade was allowed to do its job. *For more commentary, go to bloomberg.com/opinion*

## ■ AGENDA

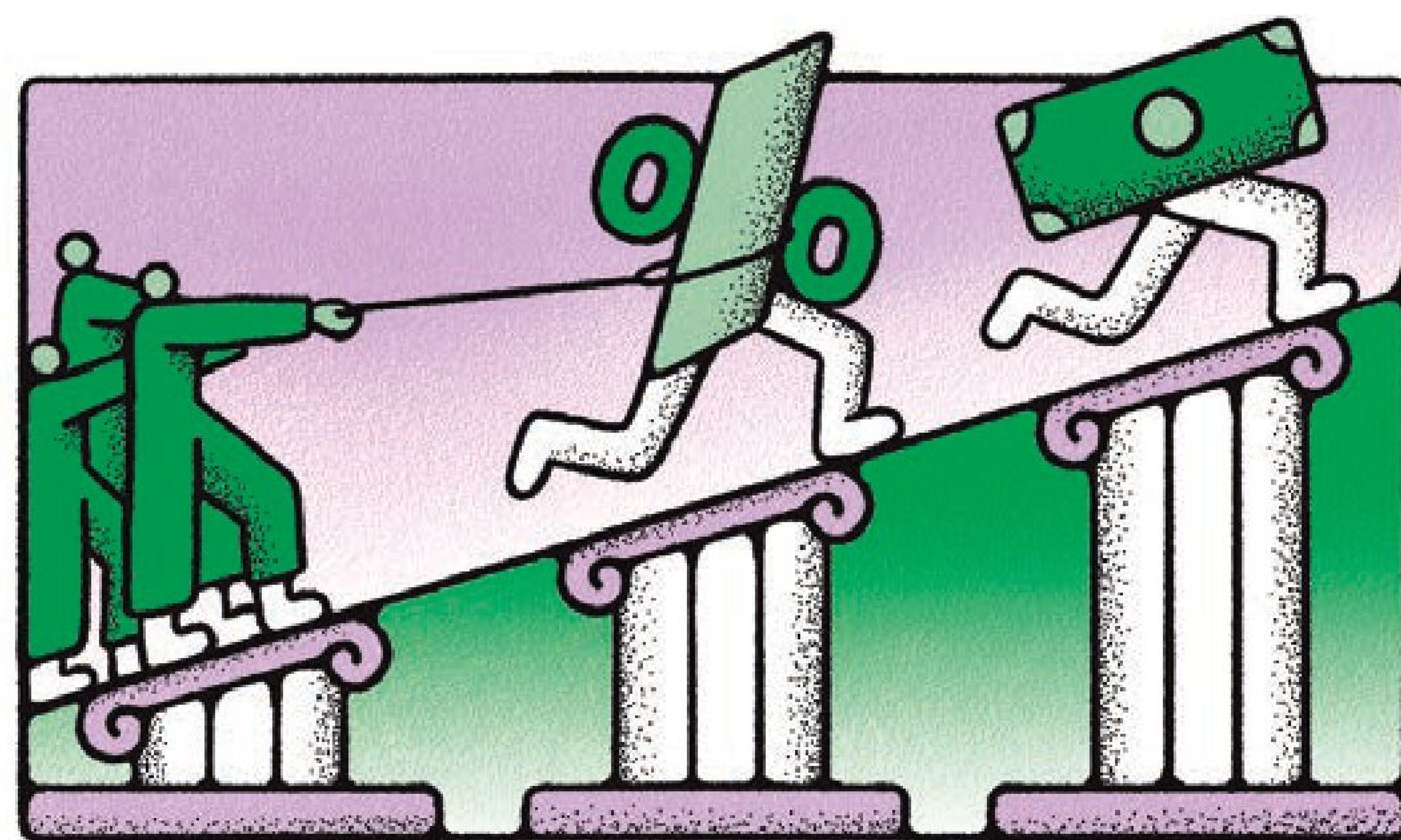


ILLUSTRATION BY BAILEY CROUCH

### ► Slow It Down

The Federal Reserve sets interest rates on Dec. 14; the European Central Bank releases its final monetary policy decision of the year the next day. Economists predict more hikes but a slowing of the pace of increases.

► The Jan. 6 committee on the storming of the US Capitol will publish its final report in the week of Dec. 12. Chairman Bennie Thompson says the House panel will also issue criminal referrals.

► The House Financial Services Committee has set a hearing for Dec. 13 as it probes the collapse of crypto exchange FTX and searches for any lessons that can be drawn. ▷ 29

► French President Emmanuel Macron hosts a conference on Dec. 13 in Paris to discuss global assistance to Ukraine, focused on restoring the country's devastated infrastructure.

► Inditex, parent of Spanish clothing chain Zara, reports quarterly earnings on Dec. 14. The numbers will indicate if shoppers are willing to keep spending despite the rising cost of living.

► On Dec. 16 ground staff at Heathrow airport start a two-day strike over pay, likely disrupting one of Europe's busiest hubs right at the start of the crucial holiday travel season.

► The World Cup final takes place on Dec. 18 in Qatar, bringing to a close one of the most controversial tournaments in the history of soccer.

# The Inflation Wild Card

PHOTO ILLUSTRATION BY 731; PHOTOS: ALAMY (1); GETTY IMAGES (2)

# ● China's long-awaited emergence from Covid Zero will push up prices of goods and services

● By Enda Curran

The broad view for next year is that inflation around the world will slow as interest rates rise, recession looms and consumers spend less. Cooling commodity, food and energy prices, magnified by the favorable comparison with last year's steep gains, will combine to slow the broad rate of inflation.

But China's reopening could rattle those expectations. The scenario goes like this: At some point in 2023, China opens its borders for the first time since the early days of the pandemic. The implications for the rest of the world would be seismic. China's domestic economy would come back to life. Students would go overseas again, tourists would start to travel, and business executives would get back on planes. This would be happening at the same time China's housing market starts to recover, further fueling consumer spending.

Bloomberg Economics reckons a China reopening would boost global commodity prices and could create supply chain backups that would put pressure on prices of many goods and services. Assuming China is fully open by mid-2023, Bloomberg Economics estimates energy prices will increase by 20% and the US consumer price index, which they believe may drop to 3.9% by midyear, may jump to 5.7% by yearend.

That would be a reversal of China's role this year, when it's helped keep a lid on global inflation. The housing slump and aggressive restrictions to contain Covid have caused an unusual slowdown in China's economy. Bloomberg Economics has lowered its gross domestic product growth forecast for 2022 to 3%, from 3.5%, and trimmed next year's projection to 5.1%, from 5.7%. A variety of indicators capture how China's weakness has affected every corner of the global economy.

The International Energy Agency in September said China's purchases of oil this year will be the lowest since 1990. China's imports from trade bellwether South Korea, its fifth-biggest trading partner, fell by more than 25% in November. Tough travel restrictions mean air traffic in China, the world's second-biggest air travel market behind the US, has sunk to 35% of what it was in 2019. China used to be the world's busiest domestic aviation market, handling about 14,000 flights a day. That was down to about 2,800 in November.

A rebounding China would drive up imports of oil, commodities and raw materials, while stoking demand for airline seats, hotel rooms and overseas real estate. "Surely it will push up global inflation if China reopens fully," says Iris Pang, chief economist for Greater China at ING Groep NV. "There will be more international travel, more sales, more production."

How likely China is to reopen next year remains an open question, but it's clear a pivot is underway. On Dec. 7 authorities in Beijing issued a 10-point plan that included additional easing measures, cementing a view among observers that the government is moving away from Covid Zero. Beijing, Guangzhou, Hangzhou, Shanghai and Shenzhen are among the cities that have eased curbs even as cases soar. Restrictions are being rolled back in Zhengzhou, home to Apple Inc.'s largest Chinese manufacturing site. Vice Premier Sun Chunlan has said the country's pandemic control has entered a new phase. All of which is stoking expectations that China will shift to reopen sooner than had been expected. Christopher Beddor, an analyst at Gavekal Inc., says recent policy steps demonstrate that the government's Covid policy is evolving. "China has arrived at the beginning of the end of Zero Covid," he says.

Before the economic recovery comes, China faces the threat of a public-health crisis. A lack of intensive-care hospital beds leaves it facing a complicated exit from Covid Zero that may well stretch beyond 2023. A full reopening may lead to 5.8 million people being admitted to intensive care, overwhelming a system with less than 4 ICU beds per 100,000 people, far fewer than in developed countries, according to Bloomberg Intelligence senior pharmaceutical analyst Sam Fazeli.

That's why most analysts expect China to navigate a slow, careful and complicated reopening that may mean continuing disruptions to mobility, supply chains and consumer confidence. A major test of China's new approach to the virus will come in January during the Lunar New Year holiday. Authorities may enforce strict travel restrictions or testing requirements that could dampen the holiday mood and reinforce the idea that the road out will be bumpy.

Despite the uncertainties, markets are rallying on more signs that government policy toward the virus is shifting. Hong Kong's Hang Seng China Enterprises Index surged 29% in November, for its best month since 2003, and the benchmark Hang Seng Index had its biggest monthly gain since 1998. In an example of the spillover effect, Australia's stock market hit a seven-month high on news of China's shifting stance.

There's another reason China may be an inflationary force next year: property. A flurry of measures to stabilize house prices were announced in recent weeks, including loosening down-payment requirements for homebuyers and taking steps to ease the liquidity crisis among developers. While these actions don't guarantee a strong rebound for the real estate sector, which by some estimates accounts for up to 25% of China's economy, they could be enough to get GDP growth back on track.

That possible combination of a recovering housing market and a reopening would have knock-on consequences for China's trading partners and financial markets. A recent paper by the New York Federal Reserve, "What Happens in China Does Not Stay in China," found that the country plays a crucial role in global consumption, growth and investors' animal spirits. "Specifically," they wrote, "we find that expansionary credit policies in China lead to notable increases in commodity prices, global production, and GDP outside of China driven by higher Chinese demand." Ⓑ

# Airbus Is Comin

A proposed A220-500 narrowbody jet and the larger A321 could squeeze the US aircraft giant

Designing a new commercial aircraft requires huge financial outlays and years of engineering wizardry, and success isn't assured, as the short-lived Airbus A380 jumbo can attest. Such missteps—the double-decker jet never recouped its $20 billion in development costs before being dropped in 2019—explain why the aerospace industry's preferred route these days is to tweak, stretch and reconfigure existing models at a fraction of the cost, rather than take the plunge with an all-new jetliner.

That lower-risk approach turned the Airbus A320neo family, with its new fuel-efficient engines, into the industry's fastest-selling aircraft, and the stretched A321 model has become a hit with customers seeking a slightly bigger jet without the fuel burn of a widebody behemoth. Now, Airbus SE looks set to apply the strategy to its smaller A220, a model it picked up a few years ago when Canada's Bombardier Inc. was forced into a fire sale of its troubled prestige project.

Only this time, archrival Boeing Co. has no comeback option, leaving it unusually exposed

Edited by James E. Ellis and David Rocks

PHOTO ILLUSTRATION BY 731; PHOTOS: GETTY IMAGES (3)

# ng for Boeing's 737

in a duopoly that for decades thrived on one-upmanship. Saddled with $57 billion in debt and the lingering fallout from two crashes of its 737 Max model, the US plane maker recently conceded it won't design a new aircraft this decade. That inability to respond will cede vital ground to Airbus as the European company sets out to squeeze its US competitor from above and below, in the market segment that makes most of the industry's profits: single-aisle jetliners.

Guillaume Faury, Airbus's chief executive officer, said last month that it's a question of when, not if, the company goes ahead with the A220-500. The aircraft could potentially have a shorter range than Boeing's 737 Max 8 variant, but it would also have the ability to carry almost the same number of passengers, with a new design and better fuel economy. If Airbus proceeds with the program—a risky bet, because the new plane could also steal business from its profitable older A320 narrowbodies—the move threatens to shift the dominance of the lucrative market for workhorse short-haul jets even further toward Europe.

"The A321 has gained a significant market share, and Boeing doesn't really have a product that competes directly," says Lindsey Webster, senior vice president for asset valuations at consultant MBA Aviation. "The A220-500 would offer another avenue for Airbus to grow," she says, calling an aircraft designed from scratch "inherently more efficient" than a reconfigured model.

Airbus's success in the narrowbody sector has been partly tied to two fatal crashes that led to a 20-month grounding of Boeing's latest 737. But ▶

◀ more significantly, the European manufacturer has been able to scale up its A320-series jets to a size and range that the Max simply can't match.

At the same time, airlines have been clamoring for single-aisle planes capable of carrying more people over longer distances, so much so that the A321neo—which seats as many as 244—together with its long-range variants, now represents the single most popular model in the Airbus lineup. As airlines move on from ordering the latest generation of the 35-year-old baseline A320, the 180-seater that was once Airbus's bestseller, the plane maker has a chance to offer a midsize narrowbody alternative—a role the stretched A220 could fill.

Such a plane would compete directly with the 737 Max 8, Boeing's only hot seller in the single-aisle category after demand came storming back once US regulators ended the grounding in November 2020. That sales restart handed Boeing a victory over Airbus last year in the competition for the most aircraft orders.

Boeing points to the 1,400 orders won by the Max series since it was allowed to return to the skies as reflecting the value of the 737's versatility and commonality with older planes already in carriers' fleets. "We are confident our product line is well-positioned, and we're focused on executing to meet that customer demand," a spokesman says.

Bombardier developed the A220 in two sizes, seating 130 and 160 people, but had touted a bigger -500 version as it sought to take on both the 737 and A320. That challenge ultimately failed because of the Canadian company's limited resources amid a $2 billion cost overrun, rather than any shortcomings of the plane itself.

Known as the C-Series under Bombardier ownership, the A220 boasts composite wings and fuel-efficient engines from Pratt & Whitney, and it's popular for its airy cabin, large windows and low noise levels. Carriers including Delta Air Lines, JetBlue Airways and Air France-KLM have ordered almost 800 of the jets. The A220-500 version would likely raise the plane's capacity to as many as 175 seats.

"We don't need that plane today, but we believe it will make a lot of sense when the A320 family will have gone more to the A321," Faury said last month. "We create a sort of space at the low end of the A320 family that can legitimately be occupied by the A220-500."

Faury offered up his confident prediction days after Boeing CEO Dave Calhoun in November ruled out designing a new plane to close the gap in its product lineup, telling an investor conference: "I don't think we're going to even get to the drawing board this decade."

The US plane maker, already heavily indebted, would need an additional $15 billion or more to fund a clean-paper design, requiring it to sell equity, something Calhoun has also ruled out. Instead, Boeing is likely to wait until a breakthrough engine or some other leap in technology provides a guarantee to spur sales.

In the meantime, the A220-500 could hand Airbus a 13% efficiency advantage over the Max 8 on a per-seat basis, according to Addison Schonland, an analyst at AirInsight Group. That's a considerable savings at a time when fuel prices remain high and airlines are under pressure to slash emissions.

The model would also give Airbus a new avenue for orders while the A320 series has a backlog of more than 6,100 planes that would take eight years to fill, and is acting as a disincentive for some airlines to make aircraft purchases now.

Although Faury and Airbus sales chief Christian Scherer talk up the merits of a stretched A220, the plane would nevertheless pose risks for the company. A commitment to build the A220-500 could not only stifle sales of the 737 but also cannibalize Airbus's own baseline A320, which is priced at $20 million more than the largest current A220.

Airbus would want the A220-500 to be a sales success, of course, but it needs to ensure a smooth transition. Rendering the A320 obsolete too quickly would depress revenue, possibly leave the plane's production lines with insufficient work and gut the existing fleet's value. "The A320 is a golden goose, and they run the risk of displacing themselves as well as Boeing," says JPMorgan analyst Seth Seifman. "They want a good business case for the A220-500 on its own rather than only to hurt Boeing."

All that means Airbus might not commit to the new plane for a few more years, while making clear it's just around the corner, says Richard Aboulafia, managing director of consultant AeroDynamic Advisory, who sees discounters including 737 stalwart Southwest Airlines Co. as possible buyers.

"Talking now is perfect," Aboulafia says. "You want airlines to do their fleet-planning with the A220 in mind. It's the Max 8 with shorter range and better economics, lighter, thinner and with a really great engine." *—Siddharth Vikram Philip and Julie Johnsson*

THE BOTTOM LINE Boeing, saddled with $57 billion in debt, says it won't develop another new plane this decade. That provides an opening for rival Airbus to try to seize narrowbody dominance.



ILLUSTRATION BY FELIX DECOMBAT. DATA: EUROMONITOR INTERNATIONAL

# Warming the Ice Cream Freezer

● AI-enabled cases and treats designed for higher temperatures are giving Unilever a lift

Deep inside a vast room filled with pipes, tubes and hoses, shiny silver vats and a conveyor belt brimming with ice cream bars, Andy Sztehlo points toward a glass-topped freezer and urges visitors to grab a Cornetto, Magnum or Twister. “The biggest dissatisfaction with ice cream is not finding the one you want,” says Sztehlo, head of ice cream research and development for Unilever Plc, the world’s biggest producer of the frozen treat. The freezer in question is designed to ensure that overheated, sugar-craving consumers can get their hands on exactly the ice-cold indulgence they desire.

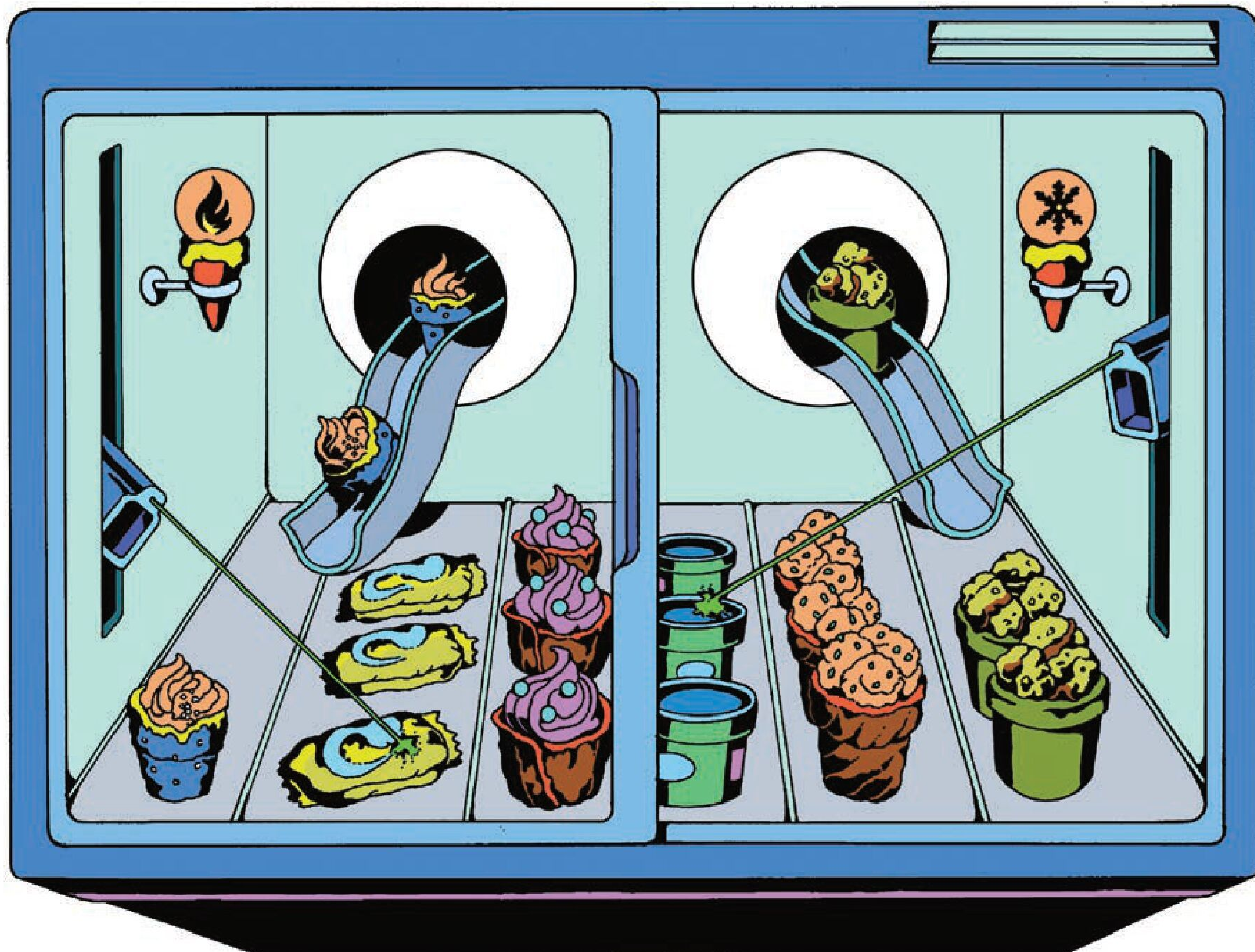
The idea was developed at Unilever’s primary research center, a leafy campus in the English town of Colworth, an hour north of London by train, where the company has come up with innovations ranging from frozen peas and pyramid tea bags to the science used in home pregnancy tests. The freezer is part of a two-pronged initiative for Unilever: making its products more available to more people and cutting the carbon emissions required to do so.

Today’s retailers typically place phone orders for their ice cream treats, or a salesperson visits to set up deliveries. But the freezer Sztehlo is showing off is equipped with a camera that monitors what’s inside. It’s connected to the internet and uses artificial intelligence to identify items that are about to run out and order more. The software then helps plot the most efficient route for delivery vans to travel from store to store. “This will enable us to make sure we’ve got the right amount of product and the right type for that particular neighborhood,” Sztehlo says.

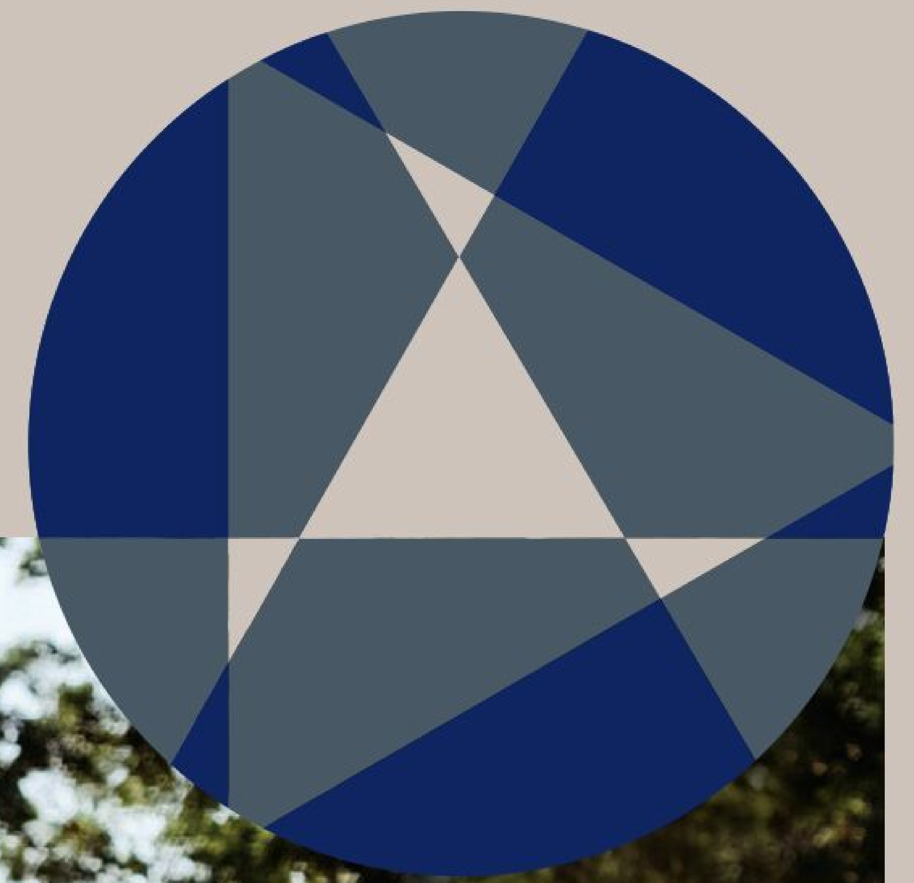
Unilever and rivals such as Froneri International (which includes Nestlé’s former ice cream division, with brands such as Häagen-Dazs and Mövenpick) and Mars (the maker of Snickers and Twix bars) compete fiercely on their freezer systems. These can boost loyalty among retailers and help get products displayed more prominently. And, in a world of largely uniform input costs, they provide an opportunity to outdo rivals. “Ingredients like ▶

▼ Projected 2022 global market share of the top 10 ice cream brands

■ Owned by Unilever



What's your *why?*



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**WEALTH PLANNING | INVESTMENT MANAGEMENT | CREDIT AND CASH MANAGEMENT | TRUST AND ESTATE ADMINISTRATION**

◀ cream and sugar are pretty much the same price for each company, as is the cost of fuel," says Chirag Pandya, a partner at McKinsey & Co. "But a more efficient freezer system is where you can start making cost savings and cutting waste."

Unilever says that in the 7,000 freezers in the UK, the US and Denmark that have the new technology, the company has seen sales climb as much as 25%. Another advantage is that the technology can help Unilever enforce agreements requiring retailers to use the freezers exclusively for its products. That means no rogue Häagen-Dazs or Mars ice creams—or indeed frozen peas, since Unilever sold that business in 2006. In locations where the company has agreed to let retailers stock rival products in the freezer, they can track those sales, too. "We can see there's a Mars product in there," says Sztehlo, and "see what is selling and what's not."

Unilever also aims to raise the temperatures of all its ice cream freezers—to -12C (10.4F), up from the traditional -18C standard. The company has 3 million-plus freezers in more than 45 countries. These are typically lent to supermarkets and shops, which pay for the energy to run them. Unilever says keeping them cold accounts for 10% of its greenhouse gas emissions, so warming them up could go a long way toward reducing its carbon footprint. A pilot of the warmer freezers, in Germany, found they used 24% less energy. A second test is planned in Indonesia; if it proves equally successful, the company will begin raising the temperature in its freezers worldwide.

Unilever's program to warm its freezers will likely take 10 to 15 years to roll out, because the company will face resistance from countries such as Denmark, South Africa and Chile, where regulations mandate colder temperatures. And recipes must be adapted to keep products stable at a higher temperature—even if the difference is just a few degrees. Unilever's scientists have been working on new formulas, and the company commissioned eight universities to develop recipes that would work up to -5C to boost the difficulty of the task and unlock a wide range of ideas.

"It's a combination of tricks to do it," says Manfred Aben, the leader of another Unilever lab, in the Dutch university city of Wageningen. Although he declines to provide details, he says one solution is using less sugar, because taking it out helps the ice cream stay frozen at those higher temperatures. "The colder it is, to keep it scoopable you have to put more sugar in," Aben says. "It's like antifreeze." *—Dasha Afanasieva*

THE BOTTOM LINE Sales from 7,000 units with the new technology have risen by up to 25%, and warmer freezers Unilever tested in Germany used a quarter less energy than older machines.

EVA MARIE UZCATEGUI/BLOOMBERG

# BW Talks Naftali Holtz

The global cruise business was crushed by the pandemic. But Holtz, chief financial officer of Royal Caribbean Group, says people are traveling again and the company is well into a three-year plan to revive its finances. —*Carol Massar*

● Served in the Israeli air force before getting an MBA at the University of Chicago ● Worked at Goldman Sachs Group Inc. as a managing director and head of lodging and leisure investment banking ● Joined RCL in 2019 as senior vice president for finance ● Named CFO in January 2022

The cruise industry was mostly shut down for almost two years. Is it back?

Our bookings are accelerating. We're seeing a lot of global demand for vacations, travel and cruising in particular. The US consumer is very, very strong, so we've shifted some of our ships to come here. They're also willing to spend more on experiences, so that's great.

Cruises have lately seen a 60-40 split between the ticket revenue and spending on onboard purchases and experiences. How big a change is that?

Before, in 2018 or 2019, we were more 75-25, so onboard experiences have really become a much more integral part of the experience. These new ships have so much more to offer to the consumer, in terms of the experiences. We've seen great receptivity from guests, and that translates into them spending more.

How are you using technology to spur that onboard revenue growth?

Technology is a great enabler of the business. Say you book a trip—we immediately want to make sure that we design your dream vacation. So, through the app, we can tell you all about available experiences, offer promotions [to experiences a guest shows interest in] and really make sure that you book them. We've seen a great penetration of pre-cruise purchases that way.

RCL has $22 billion in debt. Does that worry you?

Our goal is to get back to the balance sheet we had, which was an investment-grade profile. That will be a big focus for us in the next couple of years. But now we're back, sailing at 96% occupancies and generating cash flow from operations. This business is very resilient. There aren't a lot of businesses that went from $10 billion to zero overnight for 15 months and are still here. But look at us. And our timeline for getting back to investment-grade is three years; we're pretty confident we can do that.

● Edited for clarity and length.

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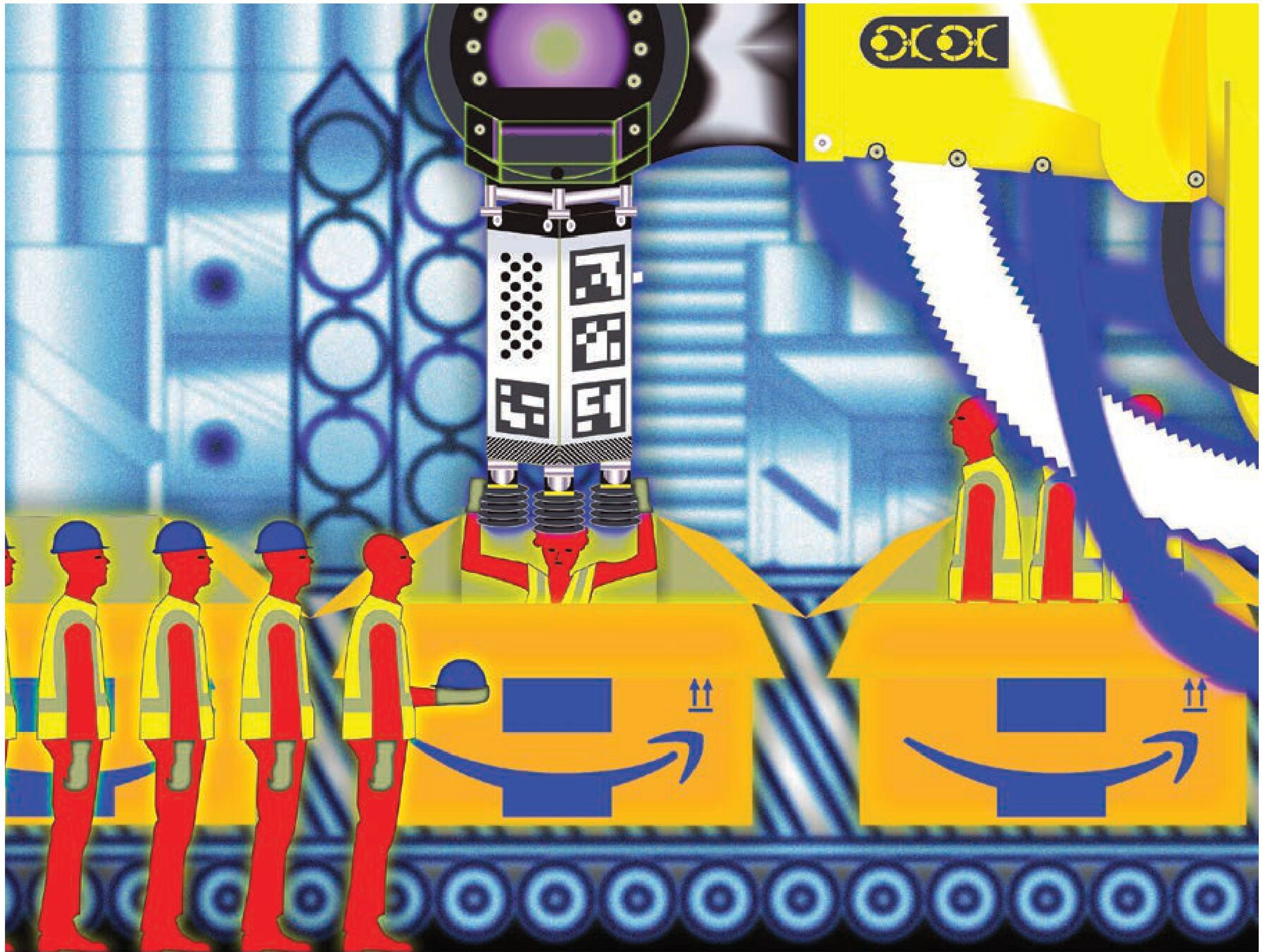


# Amazon's Robots Are Ready for the Next Step

● Machines that deftly move a range of products without crushing or dropping them could transform the warehouse

Amazon.com Inc., which churns through hourly workers, has long expected to one day run out of people to hire for its US fulfillment centers–an existential problem for an enterprise that made its name providing quick, reliable delivery. The e-commerce giant's warehouses are partly automated, but Amazon still relies on hundreds of thousands of humans working in concert with the machines.

One solution to the labor shortage, of course, is more robots. But for years, engineers have struggled to duplicate a human's manual dexterity. Now Amazon may have solved the problem with Sparrow, a yellow robotic arm that the company says can pick up millions of types of products without crushing or dropping them.

Amazon hasn't said precisely how Sparrow and its machine cousins will revolutionize its operations. But patent filings, corporate blog posts and executive comments reveal a road map of the company's ambitions. Robots will stow and retrieve individual items, move packaged boxes into carts for shipment and pilot those carts to waiting trucks–labor now handled mostly by people. The technology is still buggy, and full deployment will probably take years. But the automated system promises to fundamentally reshape Amazon, which has grown into the second-largest private US employer, after Walmart Inc., and in many towns is the default option for workers who have few marketable skills or were laid off from other jobs.

Automating more of the logistics operation will require rethinking the simple, boxy warehouses Amazon has erected around the country. Bloomberg News reported earlier this year that the company has quietly amassed thousands of acres

Edited by Stacie Sherman and Joshua Brustein

ILLUSTRATION BY VANILLA CHI. SPARROW: COURTESY AMAZON.COM. DATA: COMPANY FILINGS

of industrial real estate near key US cities. Some of that land has been earmarked for a new generation of taller, more automated fulfillment centers that Amazon plans to develop itself. Assuming the plan works, Amazon will staff warehouses with smaller specialized teams largely made up of technicians. Sensitive to criticism that automation could erase tens of thousands of jobs, the company insists it will free up workers for more stimulating tasks and make warehouses safer–no small matter for a company under regulatory scrutiny for high injury rates.

"In the 10 years since we've introduced robotics in our facilities, we've added hundreds of thousands of new jobs and created more than 700 new job categories that enable our technology," Amazon spokesperson Xavier Van Chau said in an emailed statement. "Amazon employees around the world work alongside robots and will continue to do so in the future, supporting safety in our workplace and helping us better deliver for our customers."

In early November, Joe Quinlivan, a vice president who leads Amazon's robotics and logistics technology teams, stood on a temporary stage in a suburban Boston factory that's home to the company's current generation of warehouse robots and employs scores of engineers working on new technologies. "So this is the big unveil," he said as a video showed Sparrow picking items from a plastic tote and placing them in other bins. He acknowledged it wasn't the most exciting highlight reel. "You would think that's incremental, but it's not," Quinlivan said. He assured the audience of reporters that the robot was in fact "a major leap."

Quinlivan came to Amazon in 2012, when the company acquired his employer, warehouse-robot maker Kiva Systems Inc. It's hard to overstate the importance of Kiva to Amazon. Before the acquisition, Amazon's warehouses resembled densely packed libraries. Workers followed orders on printed tickets, pushing carts for miles each day through narrow aisles to find and retrieve the items. Kiva's squat, self-driving bots reversed the entire process by bringing goods to employees. That change allowed Amazon to do away with the aisles and pack 40% more goods into its storage areas. Eliminating long walks to products also helped the company cut an all-important internal metric called variable cost per unit (essentially labor hours divided by units shipped) by about a third, according to three people familiar with the figure, who requested anonymity because Amazon hasn't disclosed the data.

"Those were dollars" saved, says one of the people, a former Amazon technologist who was there when the Kiva robots were deployed. By contrast, this person says, all the other innovations since have amounted to "pennies."

Now, thanks to Sparrow and a new automated storage system, Amazon may have found the next metaphorical dollar in savings. Shortly after Quinlivan's remarks, Jason Messinger, a roboticist who led the development of the system, demonstrated Sparrow to a crowd of reporters. Following programmed cues, Sparrow picked up items one by one–a toy cricket game, a DVD, a set of maps for anglers–and placed them in other totes. The tip of the robot arm features seven rubber-tipped, vacuum-powered suction devices that extend or retract depending on the size, shape and orientation of the product being grasped. Messinger says the secret sauce is the bot's ability to recognize objects in a bin, the fruit of an extensive in-house effort to build software capable of identifying the millions of items offered on Amazon's web marketplace. "This is the result of years of innovation," he says.

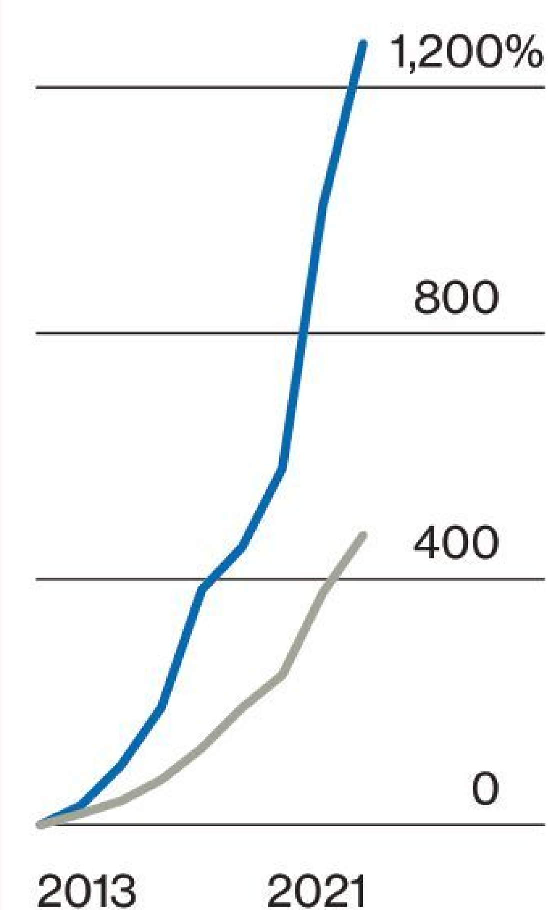
Amazon has long tested technologies that might approximate human dexterity, at one point offering an annual cash prize to the builder of the best automated picker. An early version of a robot arm is on display in the lobby of the building in Seattle that once housed Amazon's top logistics executives; it's a prominent symbol of the company's ambitions.

The work took on new urgency in 2016 after an internal analysis projected Amazon's workforce–mostly warehouse staff–would top 1 million by 2021. The takeaway was that Amazon would exhaust the pool of willing workers and risk antagonizing unions. The prediction, which proved uncannily accurate, lit a fire under Amazon's robotics and automation teams, turning their work into an imperative for former executive Dave Clark, who then ran the logistics unit and is now co-chief executive officer of logistics company Flexport Inc., according to a person familiar with the situation.

Advances in computer vision and robotic arms put a highly automated facility within reach, but there was a persistent obstacle: the tightly packed mesh shelves that hold the millions of items in Amazon's main fulfillment centers. In June, Amazon announced a solution, burying the breakthrough in a blog post about another robotic invention. The Containerized Storage System keeps products in deep plastic totes, leaving enough space for cameras to see items and robotic arms to grab them.

The system was up and running last month at Amazon's facility outside Boston, practicing on dummy inventory so engineers could work out the kinks. Hercules robots, successors to the original ▶

▼ Change at Amazon since 2013



● Sparrow, a robotic arm

◀ Kiva machines, ferried a towering rack of gray totes to a robotic arm tipped with two tote-shaped receptacles. The arm swung upward to position its basket in front of the correct rack, extended a suction device and grabbed a bin off the shelf. A second later, the arm lowered and placed the bin atop a waiting bot, this one called Xanthus, a lightweight cousin to Hercules. On some future workday, Xanthus would then deliver the bin to a human worker. That's a more ergonomically friendly process than the current system, which requires employees to repeatedly twist and stretch to reach shelves. Ultimately, say outside roboticists who've seen the demo, the system could do away with these workers completely, with Sparrow placing and retrieving products from the shelves.

The generation of fulfillment centers being built now are designed to accommodate the new system, Quinlivan says. Amazon may retrofit existing warehouses, too, though it may not make sense to retool some facilities that can already ship as many as a million units a day. "There'll be other sites where, you know, if we can't get the labor, this will help," he says.

The company says that it's early days for Sparrow and that it hasn't finalized plans for how the machine will fit into warehouses. The arm is being tested at a single facility in the Dallas area, helping to more tightly pack inventory in Amazon's shelves, a relatively marginal task. The bot can handle only 65% of the items Amazon stocks. It sometimes struggles to grasp loose or poorly packaged goods and is liable to pull a lightbulb straight out of its packaging, says Messinger, the system's design chief. Ash Sharma, who tracks warehouse automation at market research company Interact Analysis, suspects deployment is "a couple of years down the line." Asked if Amazon was near the point where it would start employing fewer warehouse workers, robotics chief Quinlivan demurs, saying he's more concerned with finding enough people to help maintain and manage the growing fleet of machines.

Amazon is training employees to fill some of those jobs. Career Choice, an Amazon program that pays for training and job certifications for hourly employees, had about 50,000 participants in its first decade. This year alone, it's had almost 40,000 participants, after Amazon expanded the program to include university degrees. A more focused program aims to train future robot operators and has turned out about 1,400 graduates in its first two years.

At the news event for Sparrow, some of those employees were on hand to serve as living proof that Amazon's robotic future would include people. One was Kory Sellers, a 22-year-old manager from a warehouse in Charlotte. He and his crew recently retired their first Hercules robot. Standing in a corner of the robotics factory, Sellers didn't have much to say about the process playing out in front of him, but he thanked his employer for the opportunity. "Amazon robotics has helped me in my life and my career," he said. —*Matt Day*

THE BOTTOM LINE Amazon's recent robotic advances promise to revolutionize the company's warehouse operations—and possibly replace some humans.

# Alone Atop the Salesforce Castle

● Leadership turnover and slowing growth plague the software giant

▼ Benioff

Bret Taylor was supposed to be the future of Salesforce Inc. In his rapid ascent to co-chief executive officer, he led major acquisitions and product rollouts, and managed relationships with Salesforce's most important clients. He did all this while sparring with Elon Musk in his side gig as board chairman of Twitter Inc.

Most of the C-suite already reported to Taylor, 42. If founder and co-CEO Marc Benioff ever stepped aside, Taylor was the obvious choice to replace him. But that changed when Taylor announced he would resign at the end of January to "return to his entrepreneurial roots."

Language such as that usually means an executive was ousted because of poor performance or a power squabble. But Benioff bemoaned Taylor's exit on a Nov. 30 earnings call, saying he was still trying to persuade him to stay. He was less emotional in 2020 when announcing the resignation of Keith Block, his previous co-CEO, whose biography vanished from Salesforce's website by the end of that day.

Slack CEO Stewart Butterfield, who was seen as another possible successor, expressed sadness and surprise at Taylor's departure before touting Slack's bright future within Salesforce. Five days later, Butterfield resigned along with two

PHOTO ILLUSTRATION BY 731; PHOTOS: BLOOMBERG (1); GETTY IMAGES (2). DATA: BLOOMBERG

other division leaders. He said it was unrelated to Taylor's leaving, calling the timing "weird."

As Benioff's CEO tenure stretches beyond two decades, he's facing an exodus of top talent that threatens his bench of deputies while the company forecasts its slowest growth ever. At least a dozen executives have announced they're leaving the San Francisco-based company since October.

"Every loss reminds me of the previous," Benioff said in an interview on Nov. 30 with CNBC, listing past mentees stretching back decades. "The hardest part is when they tell you they want to leave."

It's difficult for any company to keep CEO-caliber executives because many aren't willing to remain second in command for long, says Jane Edison Stevenson, who leads the board and executive succession advisory practice at Korn Ferry. "It's very hard to find someone who wants to run the company and is really good at it, who doesn't want to have full control."

Benioff, 58, seems willing to hand off operational duties but not the final say. "Anytime you have a charismatic and controlling CEO—founders are classic in this regard—it's hard for them to let go," says Charles Elson, founding director of the Weinberg Center for Corporate Governance.

Founders who cede control generally turn their energy toward another goal. Microsoft Corp.'s Bill Gates has developed his philanthropy. Jeff Bezos has focused on space exploration, a new relationship and a possible bid for the Washington Commanders NFL team since giving up the CEO seat at Amazon Inc. last year. Slack's Butterfield, 49, said he fantasizes about gardening.

It's been long suspected that Benioff would follow this path, stepping back from Salesforce as he became more invested in climate change philanthropy, San Francisco politics and spending time in Hawaii. But he's generally batted away the idea. "I'm never leaving Salesforce—this is my life's pursuit," Benioff said in an interview with CNBC after Taylor was appointed co-CEO in late 2021.

There are plenty of longtime leaders who can't let go. Bob Iger led Walt Disney Co. for 15 years before stepping down in 2020, only to return this year after board directors lost confidence in his successor, Bob Chapek. Iger, now tasked with helping the world's largest entertainment company find a permanent replacement, faces a lack of clear internal candidates. "Disney is sort of the poster child for problematic succession planning," Elson says.

Another is Oracle Corp.'s Larry Ellison, 78, who gave up the CEO title in 2014 but is still chief technology officer and board chairman and owns about 40% of the company's shares. CEO Safra Catz has said she has no interest in leading the company without Ellison.

Benioff is a former Oracle executive who left Ellison behind to create Salesforce. Today, his grasp on his company is looking more like the setup enjoyed by his former mentor. Come February, Benioff will be sole CEO, board chairman and the largest individual shareholder of Salesforce.

Investors have always been a bit wary of an unchecked Benioff. An activist bid to unseat him as board chair in June gained 37% of the vote, a level that usually gets company attention. Proxy adviser company Institutional Shareholder Services supported appointing an independent chair, saying it can be difficult to balance a board chaired by a founder and longtime CEO.

Taylor had been seen by analysts as a moderating force to Benioff's wilder tendencies, such as impulsive mergers—the company says it's made almost 80 acquisitions since 2004. Although Salesforce is still working to integrate the big companies in which Taylor played a major role in purchasing, much of Tableau's and Slack's leadership teams have been gutted in recent months. Both Taylor and Benioff declined to be interviewed for this article, and the company declined to comment.

Expensive mergers kept Salesforce growing rapidly for years but are largely off the table now as investors, including activist hedge fund Starboard Value, push the company to improve profit margins. Yet an uncertain economy has made it more difficult to sell software. "This turnover could imply it's not going as swimmingly as we thought," said Mizuho Securities USA Inc. analyst Jordan Klein. "It consolidates more authority and decision-making with Benioff." —*Brody Ford*

THE BOTTOM LINE An exodus of top Salesforce talent means there are fewer candidates to succeed Marc Benioff once he decides to give up control of the company he founded in 1999.

▼ Total years as CEO
■ Currently in position

| CEO | Total years as CEO |
| --- | --- |
| Larry Ellison, Oracle | 37 |
| Jeff Bezos, Amazon.com | 27 |
| Bill Gates, Microsoft | 25 |
| Marc Benioff, Salesforce ■ | 21 |
| Mark Zuckerberg, Meta Platforms ■ | 18 |
| Jamie Dimon, JPMorgan Chase ■ | 16 |
| Bob Iger, Walt Disney ■ | 15 |
| Steve Jobs, Apple | 14 |
| Stewart Butterfield, Slack | 13 |

# Who's at the Center of Tech's Universe?

● Elon Musk's quick surrender in his war on Apple shows where the real power rests

If you run a large media company, and if that media company makes 90% of its revenue from advertising, a good baseline goal is to not alienate companies that buy the most ads.

Elon Musk, on the other hand, used his first few days on the job as chief executive officer of Twitter Inc. to post conspiracy theories, goof around with an antisemitic rapper and generally do everything in his power to make the app unattractive to marketers. Musk then suggested that advertisers who'd quit spending money on Twitter—a group that includes General Motors, Pfizer and United Airlines—were bowing to "activists," who are "trying to destroy free speech in America."

Tellingly, Musk found out where his limits were when he declared "war" on Apple Inc. His campaign started on Nov. 28, when he complained falsely that Apple, which has been his company's largest advertiser, had "mostly stopped advertising on Twitter," and asked, "Do they hate free speech in America?" Data from Pathmatics, a research company that tracks digital marketing spending, show that although Apple did cut back on its Twitter ad spending from the summer, it was still paying the company $1 million or so per month. Neither Musk nor Apple responded to requests for comment.

Warning that the "future of civilization" was at stake, Musk attacked Apple CEO Tim Cook by raising what he seemed to perceive as Apple's major vulnerability: regulatory scrutiny of its App Store. Musk claimed, without offering evidence, that Apple had threatened to boot Twitter from the platform. He also accused the company of placing "a secret 30% tax on everything you buy." (The suggestion of secrecy was comical; App Store fees have been one of the most talked-about subjects in the tech industry for more than a year.)

Then on Nov. 30, Musk issued a unilateral surrender, chalking up the whole thing to a misunderstanding and dropping mention of onerous fees. He later claimed Apple had "fully resumed advertising." Pathmatics reports that Apple spent about $235,000 over the seven days beginning on Nov. 28—about the same amount it had been spending when Musk declared war.

This was a sensible move for Musk. Apple holds power not only over Twitter's current business but also over the subscription business that Musk has said is the company's future. Subscription fees collected through the App Store will be subject to Apple's fee, too, and any effort by Musk to go around the Apple system—say, with a link that sends users from the Twitter app to the web instead—would probably get the company banned.

Musk has gained a lot of fans on the right this year, but that doesn't seem likely to translate into much influence to sway policies that could hamper Apple's dominance. Yes, he's been able to direct coverage on Fox News, but his allies in the Republican Party have positioned themselves, for the most part, as friends to the world's largest companies. Their interest in Chinese influence over US tech companies could be bad for Musk as well as Apple.

Of course, Apple's ability to push around a vituperative billionaire is indicative of the company's broader power in tech. While Musk was issuing his empty threats, the crypto exchange

Coinbase Global Inc. said Apple blocked its latest app release over a feature that Apple claimed violated the 30% fee policy. Like Musk, Coinbase had no good options except to pull the feature and gripe about it on Twitter. Apple held all the cards; if you want access to those lucrative iPhone users, you have to play by its rules. But you are allowed to tweet all you want. —*Max Chafkin*

THE BOTTOM LINE Apple's advertising spending and control over the App Store give it significant power over Twitter's current and future business models.

ILLUSTRATION BY CHARLES DESMARAIS

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# Retail Investors Back Away

● Day traders have run out of ammo as inflation and interest-rate hikes crimp their tactics

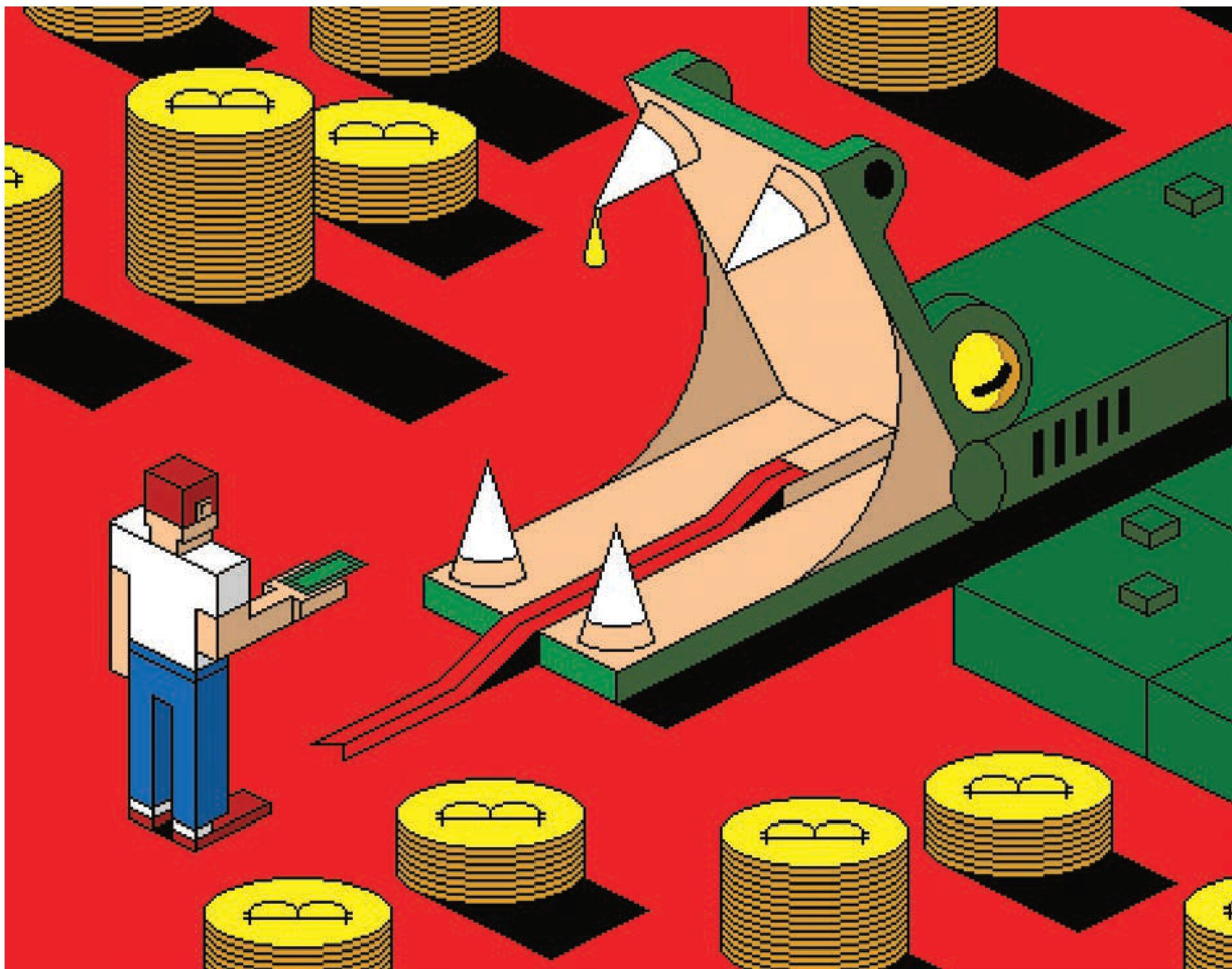
He could stomach the plunge in global equity markets that devalued his stock investments. He was still willing to stick it out when the money he'd moved into crypto coins with names such as SushiSwap and Avalanche halved in value. But the collapse of FTX Group, where all his remaining savings sit in a locked trading account, was too much for Joseph Pizzoferrato. "Losing $10,000 is crushing me," says Pizzoferrato, who works for a life insurance company in Nevada and began day trading in 2020 while stuck at home during lockdown. "If I do ever go back into crypto, it's going to be just extra money but not anything involving life savings."

Pizzoferrato, 33, is fairly typical of the cohort of retail traders who roiled the markets when they took up investing en masse in the Covid-19 pandemic's first two years. The freeze on student loan payments and an historic bull market were on their side. Now, the so-called dumb-money crowd that was beginning to look like a permanent fixture of the financial world seems to have disappeared as quickly as it arrived.

The data show the extent of the rout: Retail traders' returns are down about 40% in 2022, according to JPMorgan Chase & Co. Since the start of 2021, the share of such investors in US equity market volumes has plunged by 40%, according to the bank. Stocks that were once buoyed by the retail crowd are now vastly underperforming the market.

High-flying technology stocks have especially fallen out of favor, as seen in the performance of the ARK Innovation exchange-traded fund, a pandemic darling that's down 63% this year. The buy-the-dip strategy that many small-fry investors use is heading for its worst year in decades, as shown in the negative returns of those who bought shares after down sessions. And according to one measure

ILLUSTRATION BY NICK LITTLE. DATA: JPMORGAN





Edited by Paula Dwyer

by market researcher SentimenTrader, confidence among retail investors is hovering near early pandemic lows.

What happened? Many, like Pizzoferrato, have simply run out of ammo. They've maxed out their credit cards while cash from government relief payments and savings built up from sitting at home have dried up. Market conditions also have flipped from some of the best in recent history to the worst. Central banks are rapidly raising interest rates and choking off the cheap money that fueled markets for more than a decade.

It's no longer possible for online enthusiasts to pick an unloved company and watch it soar. Meme stocks such as GameStop Corp. and Bed Bath & Beyond Inc., the stars of 2021, are nursing double-digit losses this year. Many of the retail punters placed their bets using the no-fee app of Robinhood Markets Inc., whose own stock has cratered 75% since its July 2021 market debut. The Bloomberg Galaxy Crypto Index, which tracks prices for the largest tokens, has tumbled 67% this year.

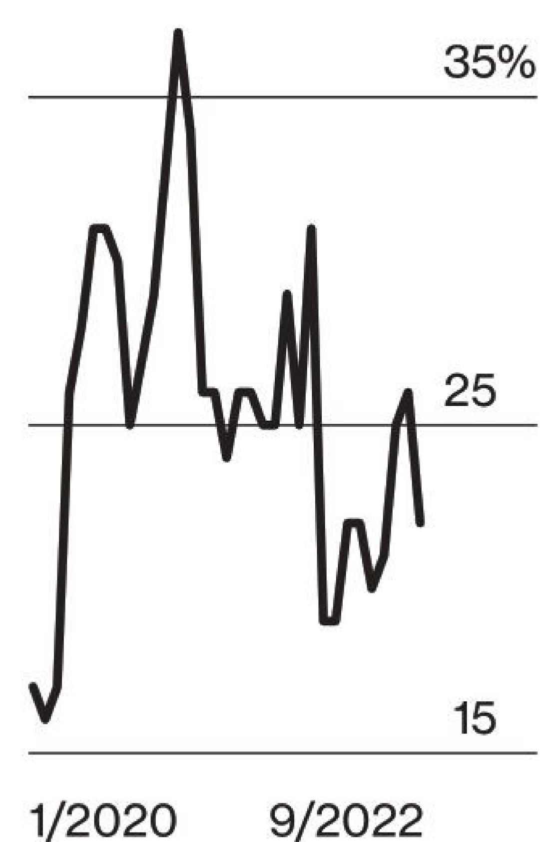
Some small investors are inactive because of the economic slowdown. Esther Gutierrez, 29, invested almost $8,000 of her savings in stocks over 10 months in 2021. Now she's just trying to get by after she lost her sales job at a startup. "I can't even invest $20, because the bills are going to start piling up and I don't want to be stressed out," says Gutierrez, who lives in San Bernardino, California. "Right now all the money that I have is liquid so I can pay whatever comes my way."

The day-trader exodus may come as a relief to professional investors alarmed that the swell of retail activity was pushing up volatility and creating bubbles in random meme stocks and digital coins. Hedge funds are also likely to welcome the disappearance of the retail throng, which at times ganged up on short sellers who thought they'd safely bet against companies with dubious prospects but instead faced expensive margin calls. One hedge fund, Melvin Capital Management, shut down after losing billions of dollars on its bets against GameStop.

The decline of the hyperspeculative day trader is good news for regulators, who were starting to increase scrutiny of leveraged products that had become popular with individual investors. Yet the flip side is that mom and pop investors provide a vital source of liquidity. If their numbers get too low, so does the appetite among broader market players for dip-buying in a downturn.

That's bad for global stocks, which are heading for their worst year since the 2008-09 financial crisis. The exposure to stocks by professional fund managers already is near the lowest level ▶

▼ Retail brokerage trades as share of overall US equity volume



◀ on record, according to Bank of America Corp. monthly surveys. "Large parts of Wall Street won't touch crypto and are turning defensive and lowering their exposure to Big Tech stock trades," says Ed Moya, a senior market analyst at Oanda Corp. in New York. "For equities to push higher, you need someone to buy tech"—a role normally played by retail traders.

A prolonged downturn could also limit retail investors' ability to get back in the game, meaning they'd miss out on gains when stocks start to recover. During the financial crisis, stocks as a percentage of financial assets owned by US households plunged by almost half, to 18%. It took seven years to recover that lost ground. After the dot-com bubble burst in 2000, says Christine Benz, director of personal finance at fund researcher Morningstar Inc., many retail traders were so hurt by their losses that they were put off investing for life. "A combination of factors has probably spooked a healthy share of this latest generation of traders" as well, she says.

Not everyone is deterred. Calvin Fung, 27, a part-time delivery man in Richmond, British Columbia, lost more than half his portfolio, about $10,000, in the FTX blowup, which he views as a temporary setback. "I personally still believe in the blockchain technology," he says. "Crypto is gonna be around for a long time." —*Denitsa Tsekova*

THE BOTTOM LINE Meme-stock traders and crypto-crazy punters sometimes irritated the professional crowd, but the loss of retail investors could delay the market's recovery.

● *Bloomberg Businessweek* caught up with two individual investors who last year explained what drew them into the risky markets that defined 2021. This year they learned some valuable lessons. ——*Misyrlena Egkolfopoulou and Claire Ballentine*



▶ Sabrina Terrell, 43

Customer Success Manager, Homestead, Florida

I tapped my brakes drastically this year and focused a lot on index funds. I also still do some cash-secured puts and covered calls [options contracts for betting on the direction of a stock price].

Last year, I didn't come out on top. This year, I actually profited by $13,000. I was shocked when I checked. That's pretty good compared to what's been happening in the markets.

I'm thinking about my retirement. I want to make sure I have options and that I'm not dependent on others. So I needed to be less impulsive and more diversified. Previously I focused mostly on tech stocks, but the layoffs by big tech companies were a warning to me. Now I'm in things like real estate investment trusts and the S&P 500. I'm definitely being more mindful. I don't want to invest my hard-earned money like I'm playing the lottery.

I still follow social media for ideas, but I'm no longer listening to random people telling me how to make a quick buck or telling me what's the next big thing.

I put more trust in advisers who can explain how to invest for the long term instead of people who hype you up and then can't answer your questions.

▶ Sergio Silva, 36

NFT Collector, New York City

Last November, I was very wary of high valuations so I personally sold 95% of my spot crypto exposure. I kept most of my non-fungible tokens, including my CryptoPunks, the blue-chip stuff.

I sold the rest of my Bitcoin in the first quarter. My exposure continues to be NFTs. Back in June, when Ether went below $1,000, I did buy a bunch of Ether, but then I put it in CryptoPunks and JPEGs.

I think it's all about the timing. If you bought CryptoPunks at $10,000 like I did, it's much different from buying CryptoPunks at $400,000. With the crypto I sold, honestly I used it to pay my taxes this year. I have never had to write a check that big in my life. It was just because of all the NFT trading last year, it was very profitable. This year hasn't been as profitable.

I don't regret leaving my job (in equity sales at Barclays) at all. I've taken a lot of calls from friends of friends who wanted to leave Wall Street to come to crypto, having seen me make the move. And that was another sign that things were getting extended.

I did not expect the FTX collapse. The industry needs sensible regulation; what's happened has made that very clear.

TERRELL: JEFFERY SALTER. SILVA: BRIDGET BENNETT

# Bring on the Crypto Regulators

● If FTX had followed existing US rules, many customers would have been protected and it may not have imploded

In retrospect, there were red flags everywhere. Sam Bankman-Fried's FTX crypto empire was a tangled web of offshore companies rife with conflicts. It mixed client money with its own. It had little or no corporate governance. There were few financial disclosures. But there were celebrities—lots of celebrities.

As prosecutors and creditors circle, everyone seems to be asking a version of the same two questions: How could this have been allowed to happen? And what can be done to keep it from happening again?

The FTX flop has driven home that a large chunk of the digital-asset industry thrives in regulatory gray zones and jurisdictional gaps, adding urgency to calls for new laws and regulations. Yet many experts agree that even though its offshore location put it largely outside US jurisdiction, there already are road-tested rules that might have prevented FTX's downfall, if only they'd been followed. "FTX is a centralized entity like any other corporate entity," says Carla Reyes, an assistant law professor at the SMU Dedman School of Law. "It wasn't a case that the rules didn't exist. It was a case that they didn't follow them." In interviews with securities experts and statements from lawmakers and regulators, five areas have emerged as crucial for Congress and regulators to focus on.

## ● COMMINGLING OF ASSETS

At the center of a string of crypto failures is the lack of protection of customer assets. FTX may be the most egregious case, having lent customer funds to its sister company, hedge fund Alameda Research, to shore up risky trades.

The US Securities and Exchange Commission already has a consumer protection rule to ensure that client assets are walled off in case a brokerage firm fails. But crypto customer accounts aren't protected because the industry has pushed back against registering with the agency—claiming that tokens aren't securities subject to the agency's strictures.

SEC Chair Gary Gensler, the scourge of crypto enthusiasts, disagrees. So did his Trump-era predecessor, Jay Clayton. Both would apply a litmus test from a 1946 US Supreme Court decision in which the justices said an asset falls under the SEC's remit when it involves investors kicking in money to fund a company with the intention of profiting from the efforts of the organization's leadership. To the SEC, that makes almost all tokens securities.

Possibly the most important step Congress could take is to make clear that most cryptocurrencies are securities, says James Cox, a professor specializing in corporate and securities law at Duke University School of Law. "By just being a security then you get all of the off-the-rack rules, as well as common law that surrounds those rules," he says.

The Commodity Futures Trading Commission, which now oversees some crypto derivatives, also prohibits commingling customer funds. But its rules apply to swaps and futures, not commodities. While most experts agree Bitcoin is a commodity and not a security, no federal regulator now oversees crypto commodities, requiring a congressional fix to protect investors.

## ● SEPARATE BUSINESS LINES

Some crypto companies have offered a panoply of products and services that blur the lines, to the detriment of customers. Crypto exchanges are the most striking example. The platforms perform many functions, including market making, trading, custodianship and securities lending. Critics including Gensler contend that the setup is rife with conflicts. By contrast, traditional financial firms that provide different services typically register their separate business lines with the respective regulators. That needs to be applied to crypto, as well, experts say.

## ● MORE DISCLOSURE

Disclosure of risks underpins financial regulation in US markets. Yet disclosures are largely absent in ▶

◀ crypto. Details on dozens of non-US branches of FTX are virtually nonexistent. More is known about FTX US, the American unit, but large gaps remain because it was a closely held private company.

Existing SEC rules for securities issuers and investment advisers would reduce crypto's opacity, but Congress may need to enhance them. "I'd want to know more about the code that created the tokens," says SMU's Reyes, to tell whether code writers can manipulate token prices, for example.

Some state securities regulators have asked Congress to heighten disclosure requirements for companies with valuations of $700 million or more. While not crypto-focused, such a measure could have given investors a peek inside the crypto giants. Another option would be to treat crypto platforms like stock exchanges, which have their own registration and reporting requirements.

● ADVERTISING STANDARDS

Crypto firms such as FTX have flourished by attracting hordes of average people through flashy ads, often with well-known celebrities such as Tampa Bay Buccaneers quarterback Tom Brady and actor Matt Damon. FTX and other crypto companies ran spots during the Super Bowl in February, which drew more than 112 million viewers.

The SEC already has rules that stop individuals from touting securities without disclosing payment details. The agency has used its authority to fine celebrities such as Kim Kardashian for promoting crypto, but such actions depend on whether the token is considered a security. The Federal Trade Commission, which oversees deceptive or unfair advertisements, could also take action.

● CORPORATE GOVERNANCE

One of FTX's most stunning shortcomings was its utter lack of corporate governance. John Ray III, who's now running FTX, advised the Delaware court overseeing the firm's bankruptcy proceedings not to trust any of its financial statements. Most FTX entities never held board meetings, he said.

The top US accounting watchdog, Erica Williams, warned last month that the US can't inspect the audits of privately held crypto firms such as FTX. In essence, Williams is saying caveat emptor: Investors need to ask crypto purveyors more questions. And if they don't get satisfactory answers, that should put them on high alert. *—Allyson Versprille and Lydia Beyoud*

THE BOTTOM LINE Congress and financial regulators may need to tweak existing rules to cover the crypto industry, but a brand new set of crypto-specific authorities may not be needed.

ILLUSTRATION BY NICK LITTLE

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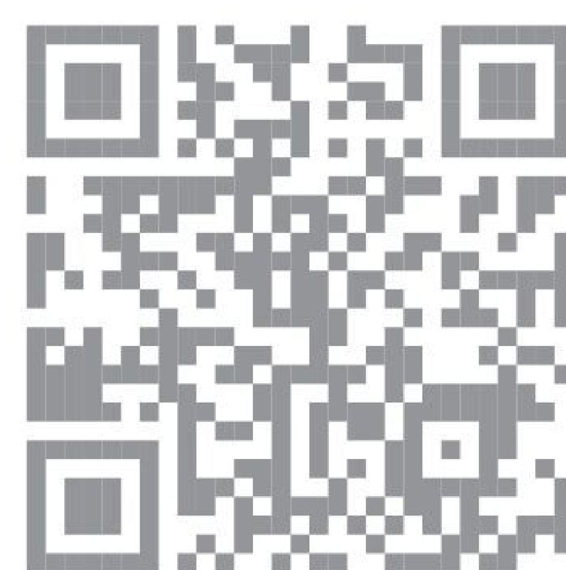

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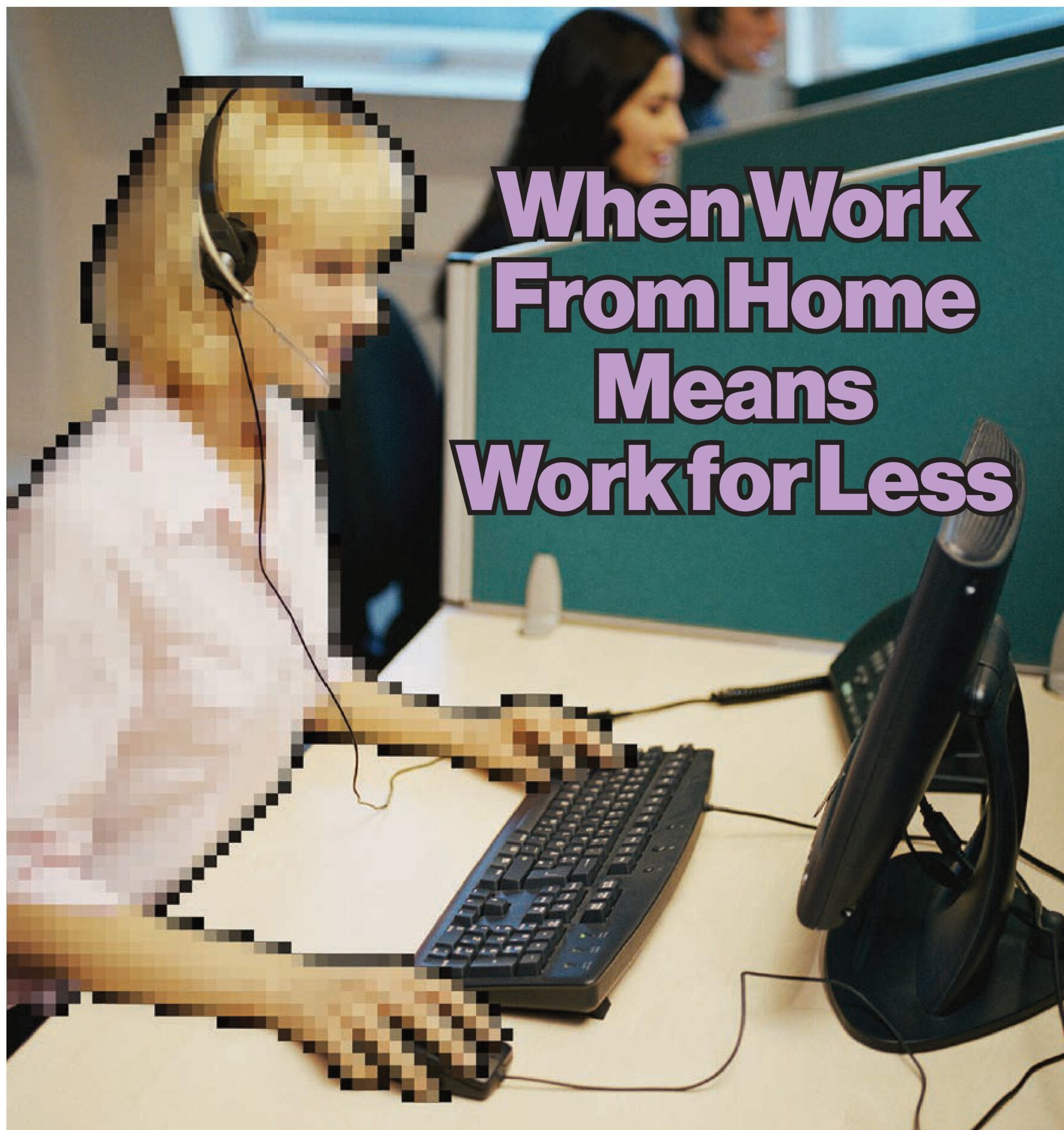


# When Work From Home Means Work for Less

● American businesses are recruiting remote employees in lower-cost cities

For all the high-profile bosses who've ordered staff back to the office, plenty of US businesses are still embracing work from home, partly because it means they can hire workers where they're more affordable.

At Extra Space Storage, near Salt Lake City, which has one of the tightest job markets in the country, managers were struggling to staff a call center last year. The company, which owns or operates more than 2,000 self-storage centers in 42 states, was increasing pay, but workers still kept departing, says Tyler Jacobsen, senior director of talent acquisition and retention.

The solution turned out to be hiring from anywhere. Extra Space has added 255 customer service agents this year, more than double the number in 2020, but the majority work from home. They were offered the same wages as the in-person staff in Utah, but bringing in remote workers from lower-wage states has helped the business "keep our costs neutral," Jacobsen says. "We were at a point where we were really struggling to get people in place," he says. Now there's an "overabundance" of applicants.

Much of the buzz around the remote work revolution has been about how it's empowered workers, such as the professionals who fled New York or San Francisco during the pandemic for more ▶

PHOTO ILLUSTRATION BY 731; PHOTO: GETTY IMAGES

Edited by Cristina Lindblad

◀ moderately priced locales without having to sacrifice their big-city salaries. But in a time of soaring wages—and steep pay gaps between regions—some employers are flipping the script. They're willing to take on more WFH staff but are targeting small-town labor markets where wages are lower, in Florida, Idaho, Texas and other states, according to recruiting companies and human resources consulting firms.

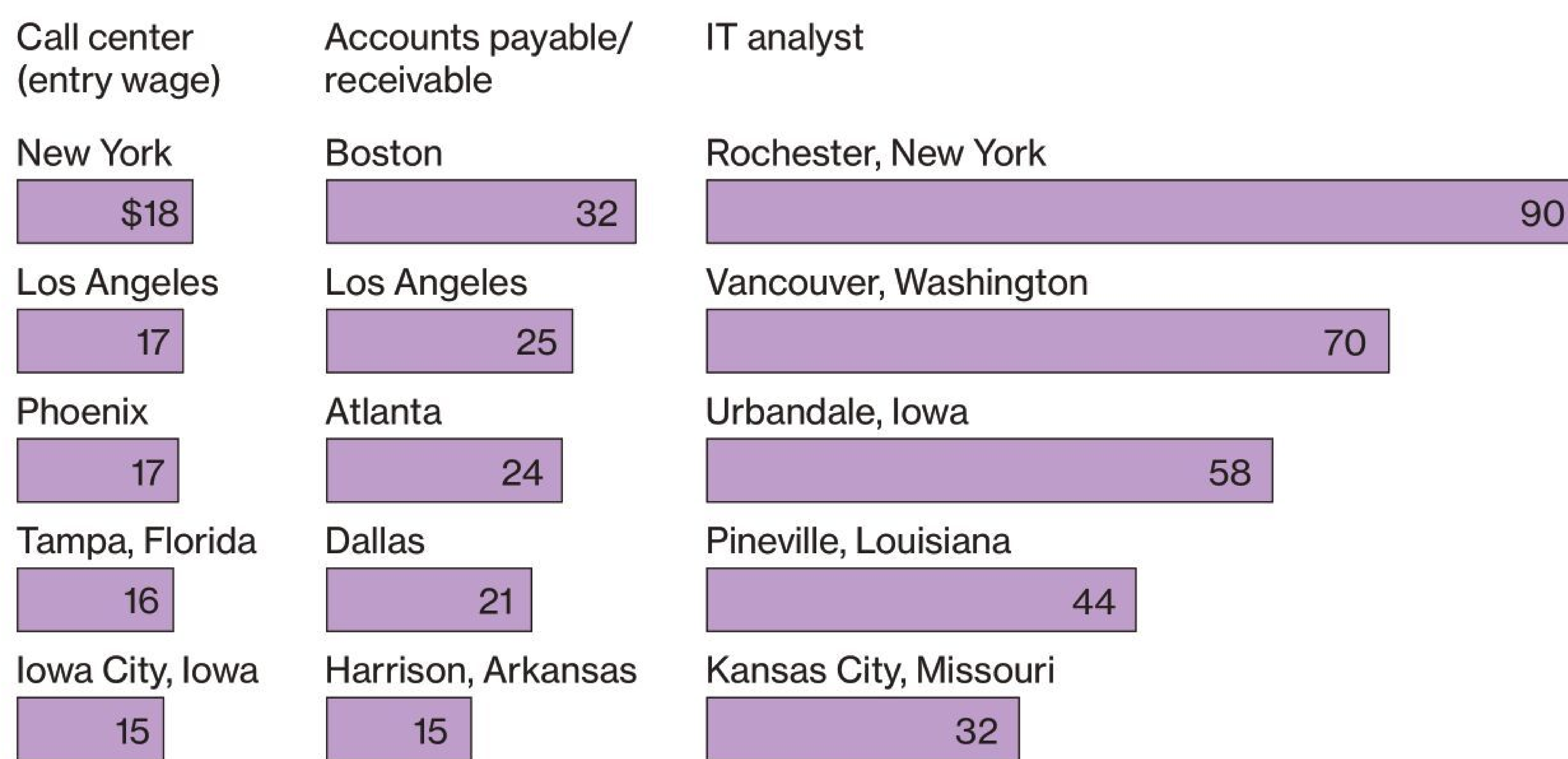
Tammy Browning, president of the outsourcing and consulting group at Kelly Services Inc., the giant staffing agency, says that "almost every day" she's asked about the potential to hire in places such as these, especially for newly remote roles in billing, finance and technology. "Customers are asking us for 'saturation data,' meaning how many people are in the market and how much do they cost," says Browning, who oversees 250,000 job placements a year. "The pandemic has spread this notion that really you can cast the net as far as you want."

Pay differentials across the country are allowing employers to save as much as 15% on wage bills by hiring remotely, staffing companies say—though they also warn that some of the gaps are narrowing as tight labor markets persist. Unemployment in the Salt Lake City metropolitan area, where Extra Space Storage's call center is located, was 2.1% in October, compared with 3.7% nationally.

Fully remote jobs remain a relatively small share of the total, even after the number of people working from home surged during the pandemic. Nationwide, the share of job ads that specify remote work has tripled to about 12% since 2019, says Bledi Taska, chief economist at labor market researcher Lightcast. Some businesses may hesitate to put work from home in their recruitment materials out of fear of binding their own hands, he says. "A lot of companies don't want to commit to that, because if I tell you, I have to honor that."

What's more, some high-profile corporate chieftains such as JPMorgan Chase & Co.'s Jamie Dimon and Tesla Inc.'s Elon Musk are leading a backlash against remote work, as they urge workers to get back in the office. Nevertheless, some companies are embracing remote work as an opportunity to find new talent, to boost diversity and, in some cases, to lower wage bills.

In the Northeast, tight job markets have put a premium on HR professionals who can help companies fill their empty seats. Recruiters with a year's experience, who would typically have earned salaries as high as $85,000 before the pandemic, are suddenly commanding as much as $120,000, says Lorri Zelman, division director for Beacon Hill Staffing Group in Boston.




In response, some of Zelman's clients have come to her asking for help in hiring work-from-home recruiters in areas of the US where prevailing salaries are lower, provided they're still in the same time zone. "Look anywhere in the country if they're willing to take less money," is what these businesses are telling her, she says.

Staffing company ManpowerGroup Inc. saw a spike in job listings with no location specified toward the end of 2021, particularly for technology and call-center jobs, says Jim McCoy, a senior vice president. Employers embracing remote work are keen to save money. "Clients are saying, 'OK, we know wages are lower in Columbus, Ohio. Can we make that a focus area?'"

**"The pandemic has spread this notion that really you can cast the net as far as you want"**

Nationwide, US wages rose at about a 5% clip in the 12 months through November, which is elevated by historical standards. Economists reckon the figure would probably be higher if it weren't for the shift to remote work, because employees are often willing to accept lower pay in exchange for being able to avoid a daily commute and other WFH perks. The trend has reduced wage growth by about 2 percentage points over two years, estimated an economic study published in July by the University of Chicago's Becker Friedman Institute.

"We're seeing a rising share of job postings in places like Texas, Louisiana, Kansas. They're diverse, they are cost competitive," says Shekar Venkateswara, a senior director at consultant Willis Towers Watson Plc. This increase doesn't necessarily mean companies are cutting in-person jobs to go remote, he says. "They're saying, 'Hey, if someone leaves, I'm going to hire in a lower-cost location.'" —*Michael Sasso*

THE BOTTOM LINE Employers have finally found something they really like about WFH: They can exploit pay differentials across the US to save as much as 15% on wages by hiring remotely.

# Reluctant Detente

● The US is changing tack in its dealings with Venezuela

On a Saturday morning in late November, a top deputy to Venezuelan President Nicolás Maduro and a leader of a group of opposition parties met at a hotel in Mexico City to announce they'd reached a deal to unlock billions of dollars in frozen funds to rebuild the country's crumbling infrastructure. The breakthrough agreement between bitter rivals was promptly blessed by the administration of President Joe Biden, which eased some sanctions hours later, allowing US driller Chevron Corp. to pump more oil in the country.

It was the most tangible evidence yet that Washington and its allies in Venezuela have changed course when it comes to Maduro, an authoritarian leader so despised only a few years ago that the Trump administration put a $15 million reward out for his arrest and slapped sanctions on his administration.

After years of failed US attempts at fostering regime change, Biden envoys began talks with the Maduro government in March, shortly after Washington banned Russian energy imports in response to President Vladimir Putin's invasion of Ukraine. The dialogue paved the way for a prisoner exchange in October. The US also demanded that Maduro restart negotiations with the opposition as a condition for any future concessions.

The rapprochement is driven, in part, by the Biden administration's desire to do whatever it can to smooth out oil market disruptions that have sent prices soaring. Although years of government mismanagement has decimated Venezuela's petroleum industry—oil production now averages about 690,000 barrels a day, compared with more than 2 million a day in 2017—the country still sits atop the world's largest reserves.

The overtures to Caracas are also a tacit acknowledgment of the failure of the policy under President Donald Trump to push out Maduro by supporting opposition leader Juan Guaidó. "Global energy prices are one of several factors driving US policy toward Venezuela, but the recent engagement also stems from a desire to break the diplomatic stalemate around Guaidó," says Eurasia Group analyst Risa Grais-Targow.

No one expects California-based Chevron to return the country to its past glory as an oil powerhouse or meaningfully ease the global energy crunch. One of the last international companies to stick it out after 2019, when the US blocked transactions with state oil company Petróleos de Venezuela SA, Chevron had effectively stopped pumping oil in Venezuela. Within a year, it may be able to ramp up output to about 200,000 barrels a day in the four joint ventures it operates with PDVSA. The additional production won't offset the disruption caused by sanctions on Russia, which exports as much as 3 million barrels a day.

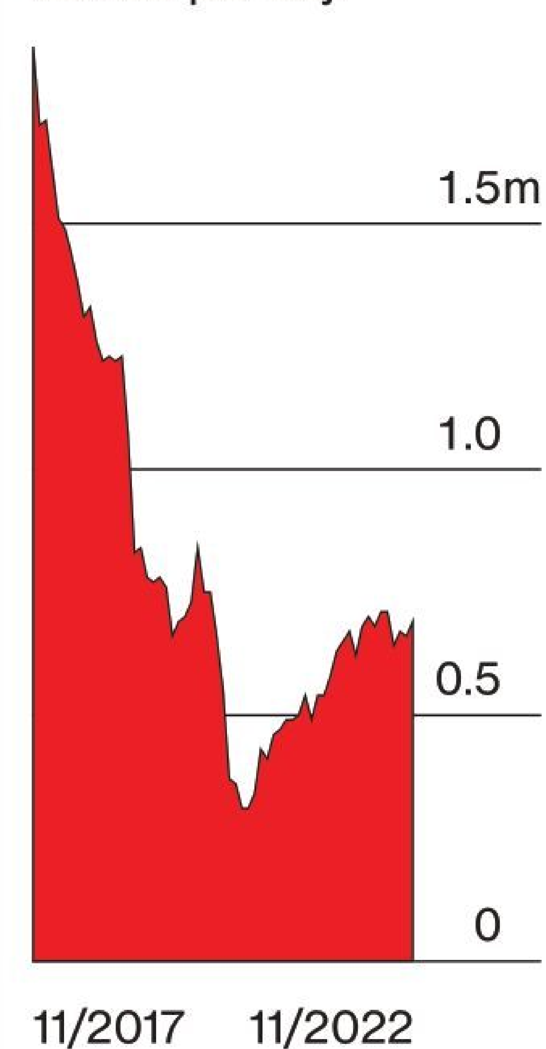
The bigger winner is Maduro. Three years ago he was isolated internationally, Venezuela's economy was in the throes of a seven-year recession, and hyperinflation made its currency worthless. About 7 million people have fled the country during his tenure, and per-capita gross domestic product is less than a quarter of what it was a decade ago, but as the 60-year-old leader nears a decade in power, the worst of the crisis appears to have passed.

Maduro is traveling internationally, including a visit to the recent climate summit in Egypt, where he wrangled a handshake with US envoy John Kerry and exchanged pleasantries with French President Emmanuel Macron. Newly elected left-of-center governments in Latin America are restoring relations with his government. At home, Caracas streets once packed with protesters demanding he step down are filling with new restaurants and advertisements for concerts and upscale stores.

The recession is over, thanks mainly to the government's decision in 2019 to allow the US dollar to circulate alongside the bolívar. GDP is forecast to expand 7.6% this year, according to a Bloomberg survey of economists, and 3.9% in 2023.

Negotiating with the US helps Maduro improve his standing on the global stage, says Luis Vicente León, director of Caracas consultants Datanalisis. "It opens doors to reestablish some form of a ▶

▼ Venezuela's crude oil production, barrels per day



◀ Maduro



MATIAS DELACROIX/BLOOMBERG. DATA: BLOOMBERG

◀ relationship with the US," he says. "It could also result in political agreements that allow Maduro to generate some political flexibility that helps him to consolidate a more recognized government in the future."

Biden still doesn't consider Maduro to be Venezuela's rightful leader because the 2018 presidential election was marred by fraud, continuing his predecessor's policy of recognizing Guaidó, the 39-year-old head of the opposition-led National Assembly. But Guaidó's standing is falling both at home and abroad. Governments around the world and the European Union have ceased to recognize him, and some of Venezuela's opposition parties are threatening to withdraw support from his so-called interim government next month. "Now, Biden can adjust the Venezuela foreign policy that Trump designed–which failed–to a more realistic policy that uses sanctions as incentives to negotiate and not as permanent punishment," says Michael Penfold, professor at the Institute of Advanced Studies in Administration in Caracas.

Biden officials have said they will further ease sanctions if Maduro continues to make agreements with the opposition in Mexico City. The talks, which restarted last month, were stalled since October 2021 when Maduro walked away. Several previous rounds of negotiations failed to produce any meaningful breakthroughs. This time the opposition and the US are pushing Maduro to set a date for free and fair presidential elections in 2024, to allow some barred politicians to run and to invite foreign electoral observers to monitor the vote.

Stalin González, a member of the opposition delegation, says that by negotiating in Mexico, Maduro has a channel to pursue concessions from the US, including sanctions relief. "The international community is willing, as it has always said, to give these incentives if the demands of the Venezuelan people are met," he says.

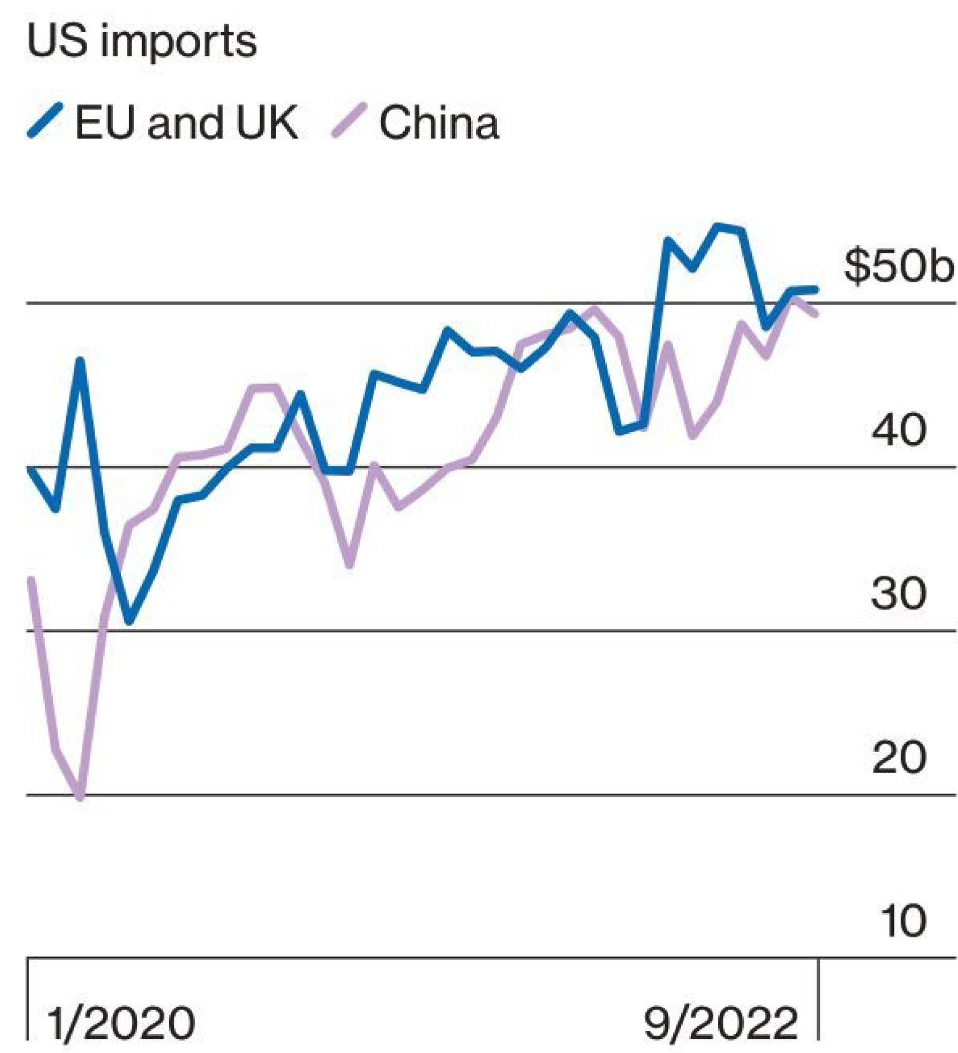
The infrastructure plan, which uses $3 billion in funds frozen in foreign bank accounts, is a first step, González says. A few days after he signed it, Maduro held a rare news conference to hail the agreement, saying it would be used to fix 2,300 schools, repair parts of the electricity grid and buy vaccines and medications. At the same time, he cast doubt over the future of the talks by appearing to link electoral conditions to the lifting of US sanctions. "Is it free elections that you want? Fair and transparent?" he said. "Take them all away." *—Ezra Fieser and Nicolle Yapur, with Patricia Laya*

**THE BOTTOM LINE** The US administration still doesn't recognize Nicolás Maduro as Venezuela's legitimate leader, but talks between the two countries are starting to yield results.



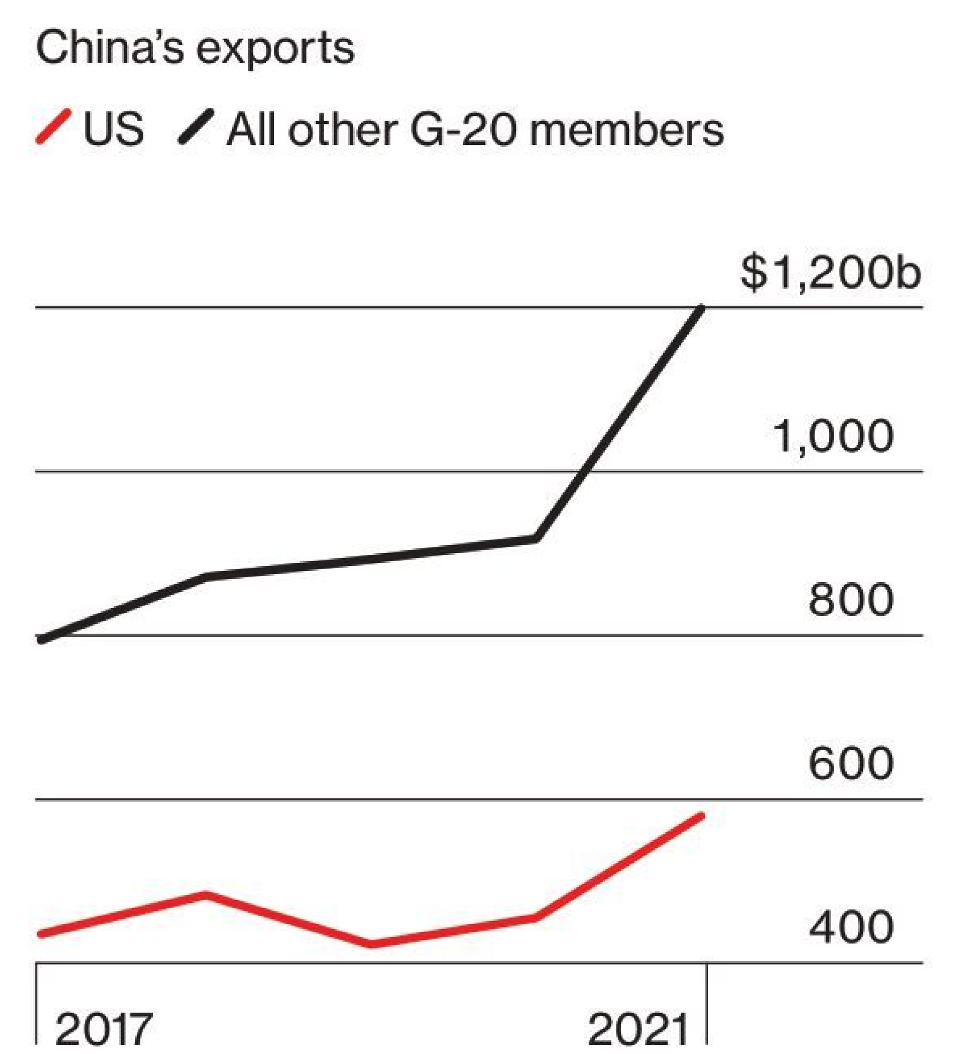
# Trade Reglobalization

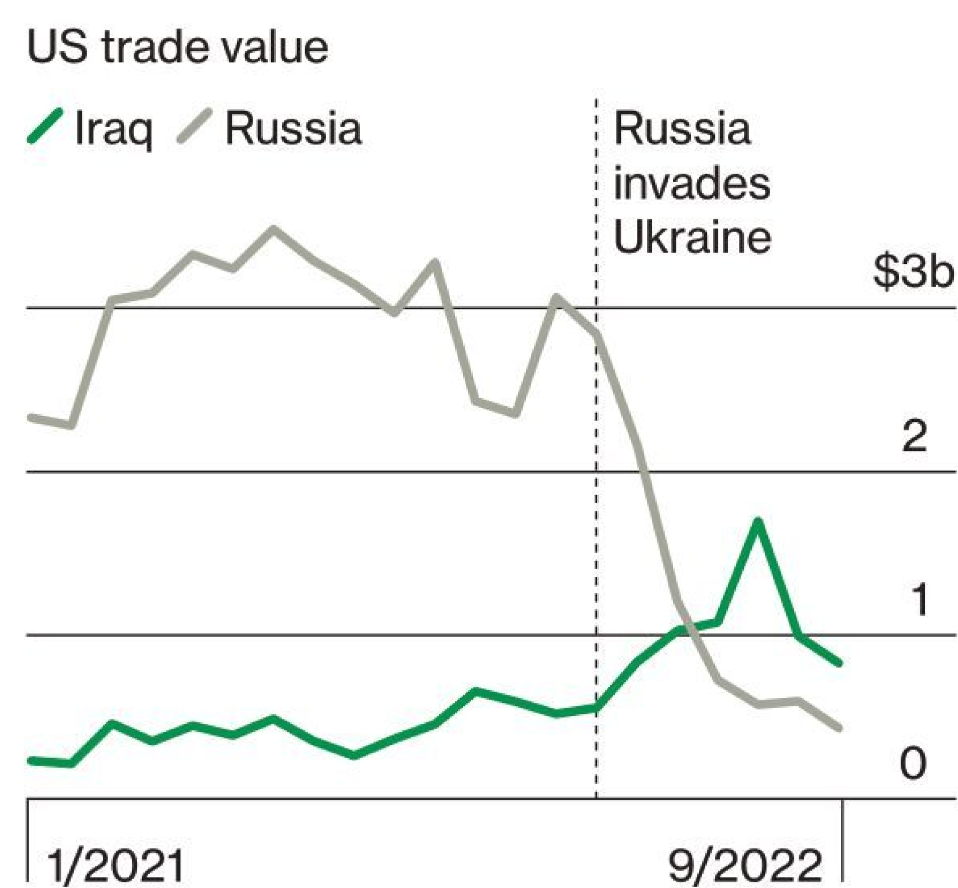
Geopolitics have been wreaking havoc on some supply chains, but trade experts warn that it's premature to talk about the end of globalization. Here's a look at some of the ways international commerce has started to shift, perhaps heralding longer-term realignments. —*Bryce Baschuk*




◀ Biden's push to reduce US economic dependence on China and other authoritarian regimes through friendshoring— shifting manufacturing and trade to countries with shared values—has translated into a steady increase in US imports from traditional allies in Europe.

▶ The creation in 2021 of the Regional Comprehensive Economic Partnership, a Beijing-led trade grouping of 15 Asian nations, is expected to accelerate a regionalization trend, with a falling share of China's exports going to the US, currently its No.1 market.




◀ Because of sanctions and the move by the Biden administration and Congress to strip Russia of "most favored nation" status, which confers tariff benefits and other perks, the US now trades fewer goods with Russia than with former strategic foes, such as Iraq.

DATA: US CENSUS BUREAU, INTERNATIONAL TRADE CENTER

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# The Good Business Issue

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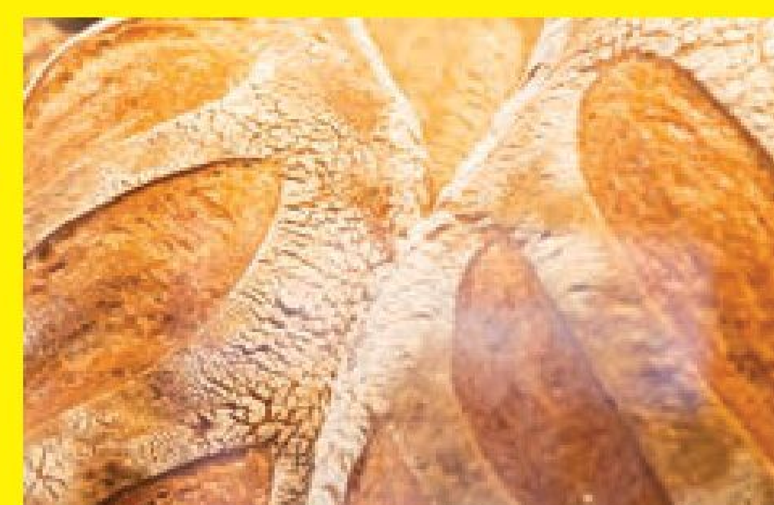
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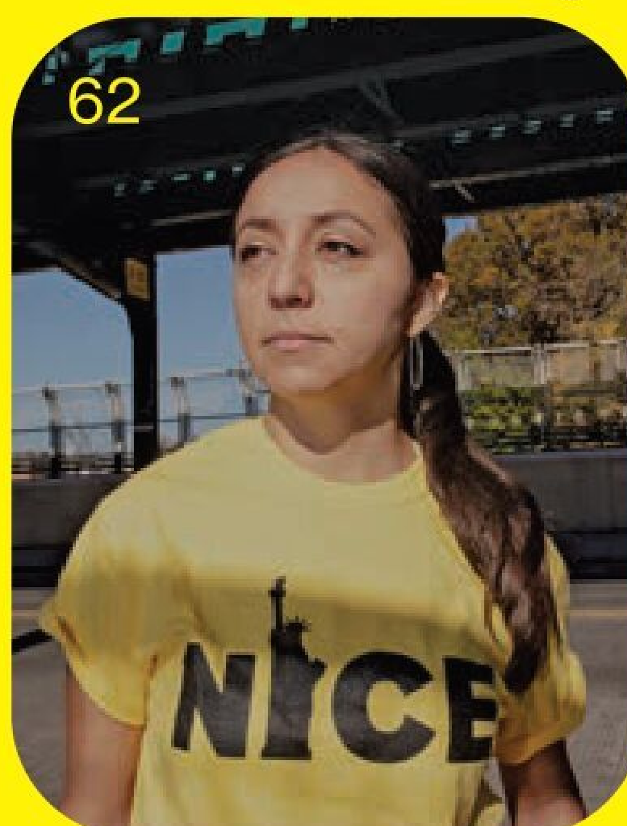

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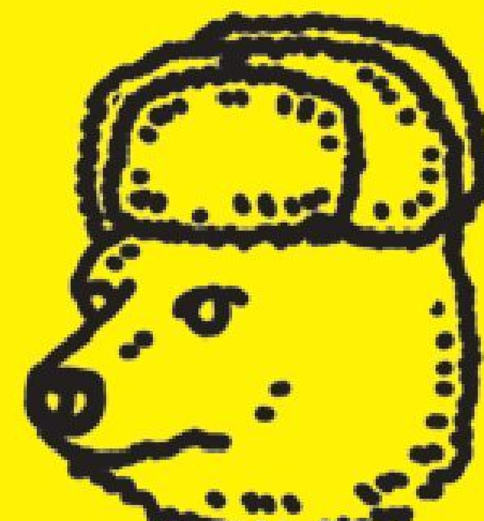
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If you're like us, you need an occasional reminder that there are actually some positive developments in the world. Our ninth annual Good Business issue provides just that, with a look at individuals, companies and nonprofits tackling some extreme challenges, including the plight of migrants, racial and gender inequality, food waste, deforestation and child labor. We also examine efforts to hold companies to account—including a professor's list that identifies those that dragged their heels on exiting Russia after its invasion of Ukraine and a snapshot of US corporate settlements and penalties issued since 2008. As the cost of next to everything goes up, it's never been more important for businesses to show they're doing more than maximizing shareholder returns.

PHOTOGRAPHS BY CARLOTTA CARDANA (2); JULES DAVIES (1); FRANCESCA JONES (2); NATALIE KEYSSAR (2); MITHI STUDIO (2); WAYNE LAWRENCE (1); JARED SOARES (7); ILLUSTRATIONS BY C.W. MOSS

# Misfits Goes Mainstream

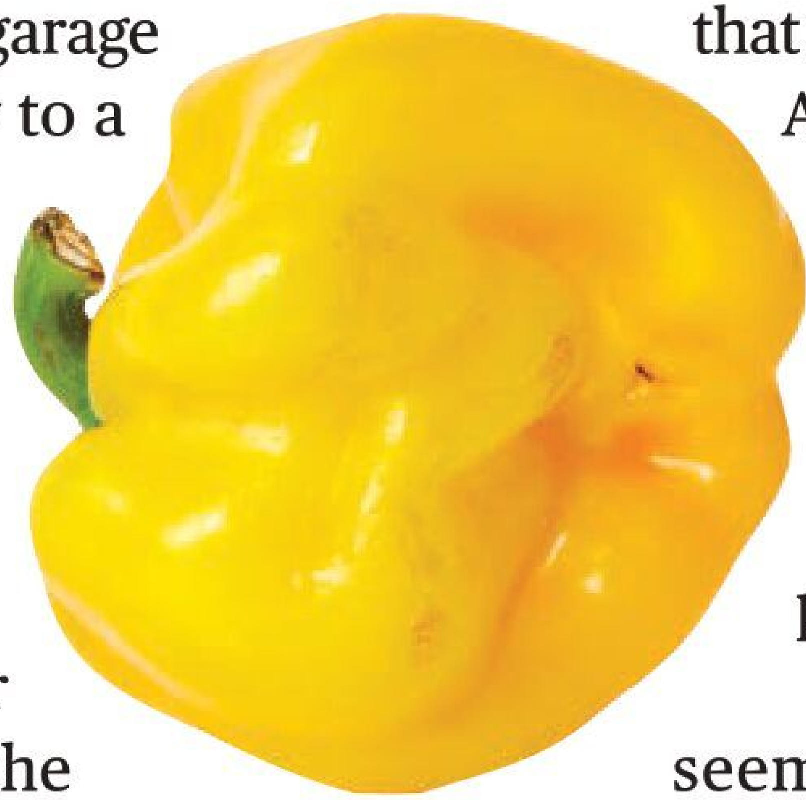
To reduce food waste, Misfits Market specializes in ugly organics, odd meat cuts and overstock packaged goods. Now it needs to scale its unusual supply chain way, way up

By Andrew Zaleski

Photographs by Jared Soares

Food styling by Giulietta Pinna

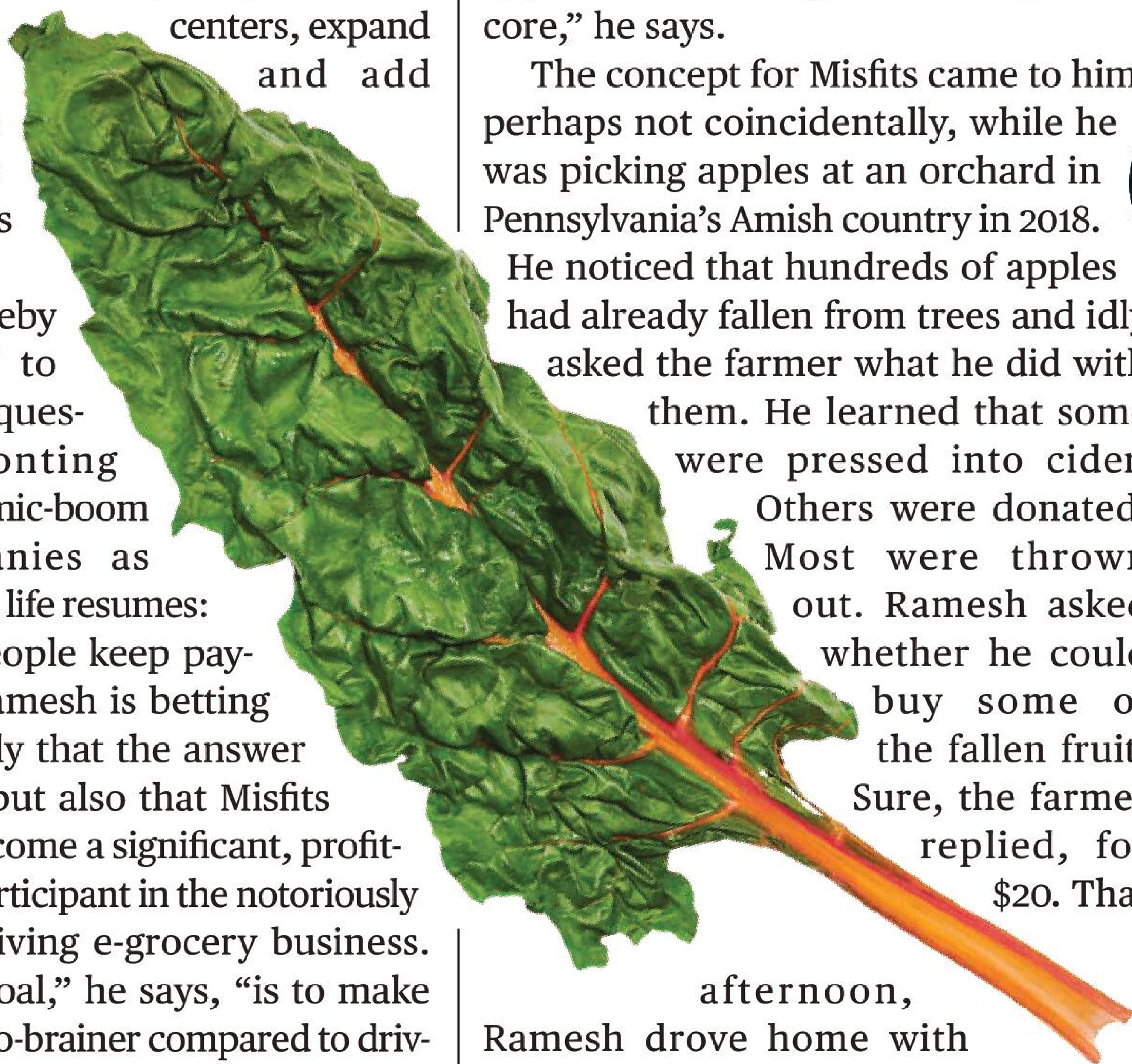
As pandemic business booms go, Misfits Market has had a particularly steep curve. The Philadelphia-based online grocer, which specializes in bruised, lumpy or otherwise screwball organic produce, was already growing nicely by March 2020. It had steadily climbed from 600 square feet of storage space, consisting of two industrial refrigerators tucked inside a tiny garage in North Philly, all the way to a 140,000-square-foot warehouse in South Jersey. It had 90,000 customers and was shipping boxes of food to people living as far north as Maine, as far south as Florida and as far west as Illinois. And then: the lockdowns. "My first thought was, 'We're going to have to shut down the warehouse, and our revenue's going to go to zero,'" recalls Abhi Ramesh, Misfits' 30-year-old founder and chief executive officer.



But of course grocers were an essential business, so the warehouse stayed open with safety protocols in place. Soon, Misfits was joining the ranks of the cloister-friendly enterprises—yeast growers, board game publishers, purveyors of lavishly expensive treadmills—that Americans were suddenly embracing. "It got to a point where one of our engineers called me and was like, 'Hey, our servers are crashing. They cannot handle the amount of traffic coming in,'" Ramesh says. Over the next several months, almost 100,000 new customers signed up.

When Ramesh founded the company in 2018, his mission was twofold. He wanted to reduce waste by rescuing food that might otherwise get trashed. And he wanted to sell it at an affordable price. For $34 or less a week, his customers subscribed to get a box of irregular but edible organic fruits and veggies: pears, plums, peaches and more.

The pandemic boost seemed like thunderous validation, and Ramesh quickly sought to expand. By fall 2021 he'd raised $525 million, including $200 million from SoftBank Group Corp., to build fulfillment centers, expand operations and add products. Two more huge warehouses came online.



Misfits thereby girded itself to face the big question confronting pandemic-boom companies as normal life resumes: Will people keep paying? Ramesh is betting not only that the answer is yes but also that Misfits can become a significant, profitable participant in the notoriously unforgiving e-grocery business. "Our goal," he says, "is to make this a no-brainer compared to driving to the grocery store."

To do that he'll have to significantly expand the company's inventory. Misfits now delivers about 700 food items that go well beyond eccentric produce: maple syrup, eggs, salmon, rib-eye steak, even nonorganic, nonnutritious Fruity Pebbles. The aim is somewhere between 3,000 and 5,000 products.

Founder Ramesh wants to expand Misfits' reach and give customers more options to fill their baskets

Unlike Amazon.com Inc., FreshDirect LLC and other e-grocers, Misfits can't just pour funding into any old product. But Ramesh says he can remain true to his original mission of targeting food waste and unaffordability. Overproduced, almost-expired, bizarre-looking—these qualities are at once the company's primary challenge and its main competitive advantage.

Ramesh was born in Chennai, India, and immigrated to the US at age 7. His parents, both software engineers, moved to Atlanta for a job Ramesh's mother had taken at a consulting company. "We were not very well off," he remembers. "We had no real savings at the time, because both my parents were still early in their careers." From a young age he was told wasted food is wasted money. "I would get yelled at if I threw out an apple without eating it all the way to the core," he says.

The concept for Misfits came to him, perhaps not coincidentally, while he was picking apples at an orchard in Pennsylvania's Amish country in 2018. He noticed that hundreds of apples had already fallen from trees and idly asked the farmer what he did with them. He learned that some were pressed into cider. Others were donated. Most were thrown out. Ramesh asked whether he could buy some of the fallen fruit. Sure, the farmer replied, for $20. That afternoon, Ramesh drove home with a crate full of organic apples. "I'm looking at them, and there's nothing wrong," he recalls. "Maybe one in 75 has a small bruise or something like that. And I'm able to purchase them at a substantial discount."

Starting a grocery company was a departure for Ramesh, who'd studied finance at the University of Pennsylvania and spent time in private equity. But by cold-calling organic farms a few hours' ▶

# WHAT IS AVAXHOME?

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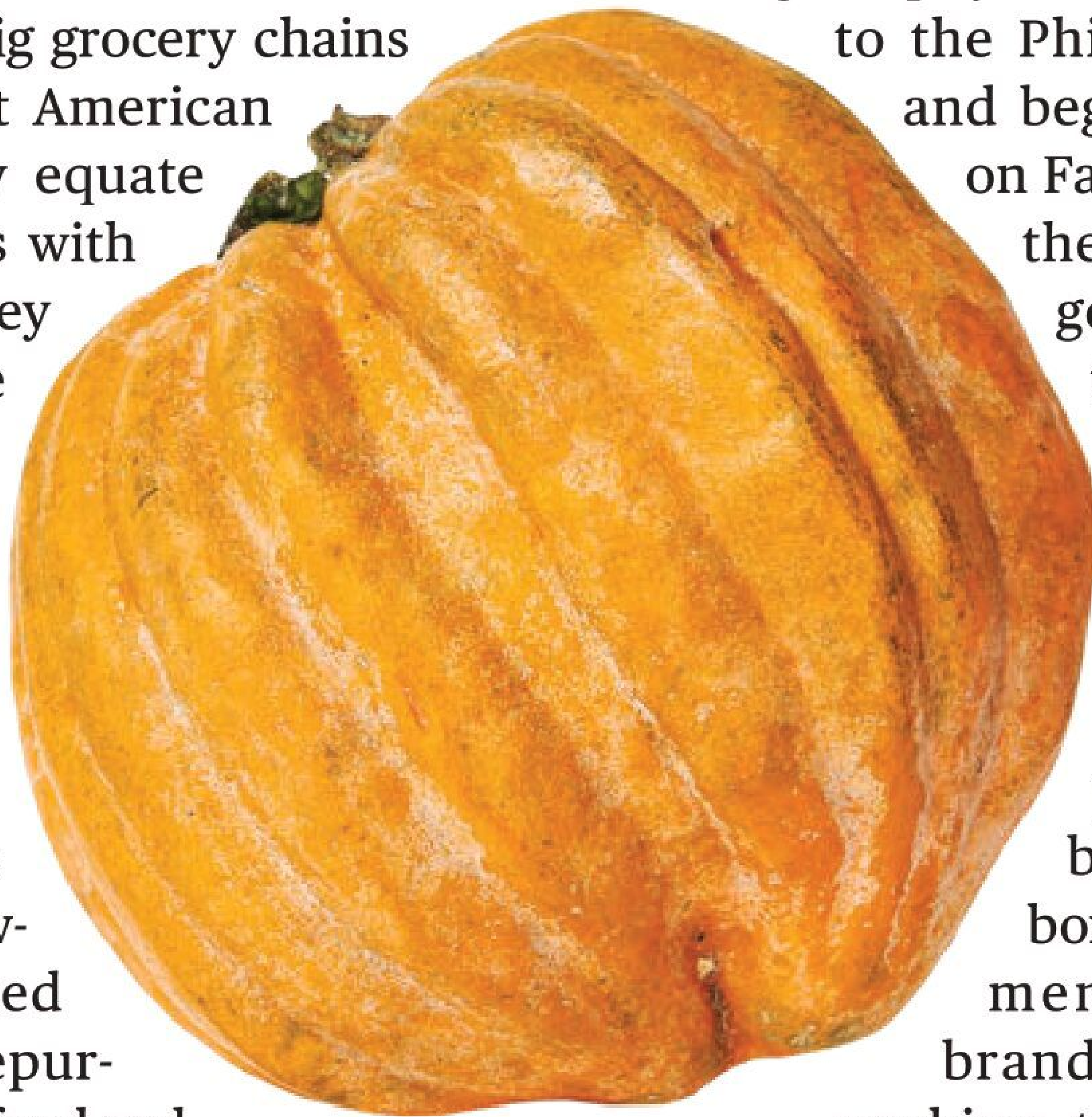
◀ drive outside Philly, he discovered that many farmers had perfectly edible peaches, nectarines, onions, squash and more that they couldn't sell. The distributors who supply big grocery chains are well aware that American shoppers generally equate how an apple looks with how it tastes, so they tend to buy only the best-looking produce, eschewing the dented, the pockmarked and the slightly discolored.



This concern for appearance is a problem for growers. Some unwanted produce can be repurposed for juices, pet food and other products that aren't judged on aesthetics. But cosmetic considerations reign supreme. Between 161 billion pounds and 355 billion pounds of food are wasted annually in the US, according to an Environmental Protection Agency report published in 2021; among retailers and consumers, fruits and vegetables are the most wasted foods. "With organics it's really challenging," says Sarah Shepherd, executive sales representative at California's Lakeside Organic Gardens, a farm that began working with Misfits Market in 2019. "The taste, the quality is there. It just looks different."

Misfits aimed to turn this limitation into a selling point. It was more profitable for farmers to sell leftover food to Ramesh's business, even at a discount, than to repurpose it. Those savings could then be passed on to customers. He started driving around to nearby farms in a rented Zipcar and loading up as much produce as he could. One time he hauled away 500 pounds of butternut squash. He stored everything in the studio apartment he shared with his future wife, relying on air conditioning to keep the food cold. A self-taught coder, he published a simple website using Shopify, restricted sign-ups to the Philadelphia area and began advertising on Facebook. During the first week, he got a couple of thousand email sign-ups, but his initial customer base was small: about 25 people. He assembled the first boxes in the apartment; the only branding was some packing tape that read "Misfits Market."

The first shipments, in September 2018, included a truly arbitrary array of produce. Ramesh personally delivered his "mystery boxes" to his early customers—"sustainability-oriented suburban families," as he describes them. Word spread, and within a month or so he was fulfilling hundreds of orders and turning to FedEx Corp. and UPS for delivery.

"We get feedback all the time from customers who say th

The appeal, he says, was the same thing Misfits pitches today. "If you simplify our entire business over the past four years, it's two things: You're saving stuff that shouldn't be thrown away. But you're also saving money."

As Misfits grew, expanding into Boston, New York, Washington, DC, and eventually nationwide, Ramesh tinkered with its offerings and business model. He added flexibility to the mystery boxes, first allowing customers to select the number of leafy greens, fruits and vegetables they would receive, then which ones. (His own favorite is sweet potatoes, which he describes as "super grotesque and ugly" but also highly nutritious.) Then he phased out the mystery boxes entirely and expanded to new categories. Shoppers were still paying for a subscription, but the charge now fulfilled a mandatory order minimum. Any items beyond that cost extra.

With that shift, Misfits became less a fun way of getting fruits and veggies into customers' diets and more a serious bidder for their grocery budgets. Today the company ships food to 250,000 customers in more than 40,000 ZIP codes. On average, each customer orders 20 to 30 items and spends about $58 per week including the mandatory minimum order, which now tops out at $40. That's led to $386 million in revenue over the past two years. Ramesh wants Misfits on a path to $1 billion in sales—and with that, to profitability—in the next 18 months.

Getting there hinges on improving Misfits' fundamentals: adding customers in denser areas, streamlining warehouse operations and especially reducing delivery costs by increasing the number of items per order. "The trajectory for us is very much how you get someone to order their full grocery basket. When someone's ordering $150 worth of groceries, then the profit margins are a lot higher," Ramesh says.

To fill a basket, though, you first have to stock the shelves.

On a typically hot August day, I find myself standing in a parking lot about half an hour from the Salt Lake City airport, carrying a heavy winter coat, a wool cap and gloves. The reason for the getup: Ramesh is giving me a tour of Misfits' 200,000-square-foot Utah warehouse, one of the two the company brought online in the wake of the pandemic; the other is in Dallas.

Indoors, it's 36F. The operation is a sight: a cavernous, concrete-floored building with shelving units stretching to the 32-foot-high ceiling; hundreds of black crates containing all sorts of items; packers along a snaking conveyor belt grabbing ricotta cheese, reduced-fat milk and avocados. One box on the conveyor belt is filled with a dozen cans of Drink Vina prebiotic soda. We walk over

as workers pick heads of cabbage out of bins and put them in brown boxes.

"Packing produce is incredibly hard, everything about it," Ramesh says. "They're different sizes and shapes. You can't grab them with the same pressure."

He takes me inside a separate freezer where meat and fish are stored. The air is so cold my pen stops working.

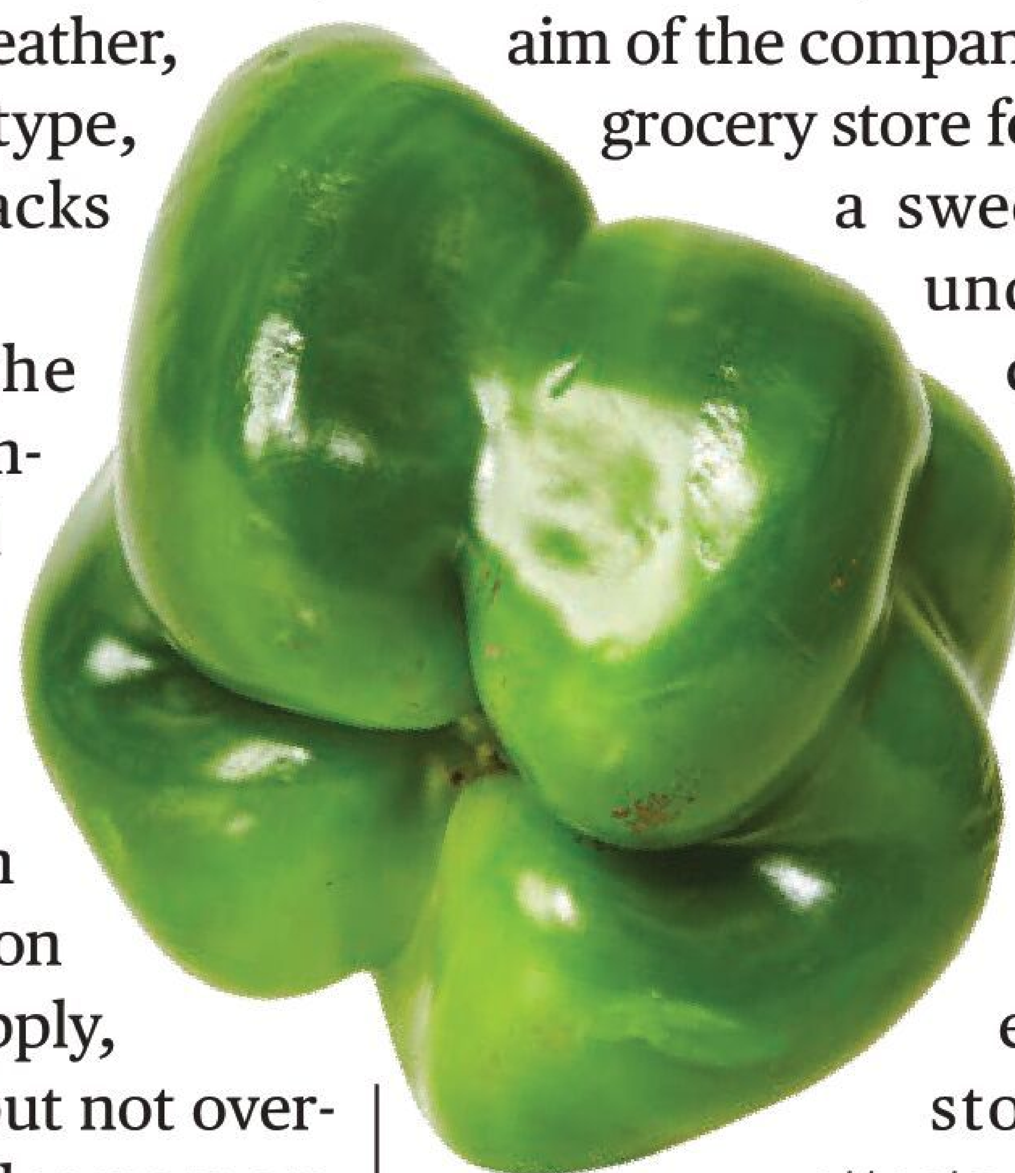
In some respects, the operation is similar to those of other e-grocers, with optimization algorithms that tell employees in what order to pull items and how to pack a box. Where Misfits really tries to differentiate itself is in what it packs and how. The inventory comes from about 150 individual vendors with items that fit the company's mission. Instead of salmon fillets, Misfits gets 3-ounce end pieces from a supplier in Texas. It also has blueberries from Driscoll's Inc., but they're usually smaller than in the grocery store.

Misfits' root vegetables tend to be the misshapen produce; imperfections in leafy greens and fruits are less noticeable. On occasion, the produce is actually too large. "We get feedback all the time from customers who say the food doesn't look misfit," Ramesh tells me later. "But it is."

e food doesn't look misfit. But it is"

Sourcing atypical products saves money: According to a third-party data system Misfits uses, one of its imperfect tomatoes sells for about 20% less than another of the same type would in a store.

That Misfits' staple fruits and vegetables are already in a sense "damaged" helps with packaging costs, too. They can go straight into the box, also burnishing the company's environmental bona fides, as anyone who's received a grocery box with a bell pepper mummified in a triple-shrink-wrapped Styrofoam tray can attest. Eggs and other fragile items get bespoke cardboard sleeves; refrigerated and frozen items get the more industry-standard recyclable gel packs. Custom software tells employees which of Misfits' five discrete boxes to use, a measure to cut down on packing waste. And it calibrates, based on variables such as weather, delivery distance and food type, how many of those gel packs might be needed.



Notable throughout the warehouse is the high number of empty shelves—a nod to Misfits' grand plan to add more products. As a private company, it doesn't release official figures, but Ramesh says it makes "a few dollars" on a per-box basis, counting supply, packing and delivery costs but not overhead. The customers who order more are the ones who are bringing in the money.

This is why Misfits has to beef up its inventory by thousands of items: When you arrive at its website, you have to know you can get most, if not all, of your groceries. Ramesh says he believes he can achieve that sort of scale over the next two years. But buying enough food to meet that goal will be costly, taking a sizable bite out of the half-billion dollars the company has raised. Already, Ramesh has invested some of it by buying a competitor, Imperfect Foods Inc., which operated mainly on the coasts. Terms of the deal, which closed in November, haven't been announced, but the acquisition comes with all of Imperfect's inventory, its five warehouses and its 550 delivery vans.

Although the core of Misfits' business has forever been misshapen fruits and vegetables, Ramesh knows that lumpy produce can take him only so far. "It's always going to be a big part of our strategy," he says, "but the mission has expanded to waste and inefficiency beyond just produce."

The mission, as well as the ultimate aim of the company, is to be an online grocery store for the masses. Such a sweeping change will undoubtedly involve compromises. This is how Misfits came to offer Fruity Pebbles, sourcing it from its manufacturer, Post Consumer Brands LLC, whenever there's overstock. As Ramesh attests, some people simply want their sugary cereal.

It's also why, in a sharp turn from its founding days, Misfits has begun buying and offering conventional produce. Only about 14% of all produce grown in the US is organic. That leaves the company without much choice if it's to sharply increase its inventory.

For Ramesh, preventing waste remains the key. But that's a challenging proposition, too: Misfits will need to bring on hundreds, if not thousands, more vendors. And the company is intent on working directly with suppliers, rather than relying on middlemen. "It definitely by default takes longer," says Daniel Litwin, the company's vice president for procurement. "Rather than calling up a distributor and unlocking their catalog of thousands and thousands of SKUs, we're taking the time to build direct relationships."

That effort means sending people from its procurement division to trade shows and meetings with brand representatives. This way, in Ramesh's view, Misfits can make itself the outlet of first resort when suppliers can't unload on distributors. Items stamped with the wrong date or wrapped in outdated packaging fit this paradigm nicely. Misfits has previously done the latter with products such as olive ▶

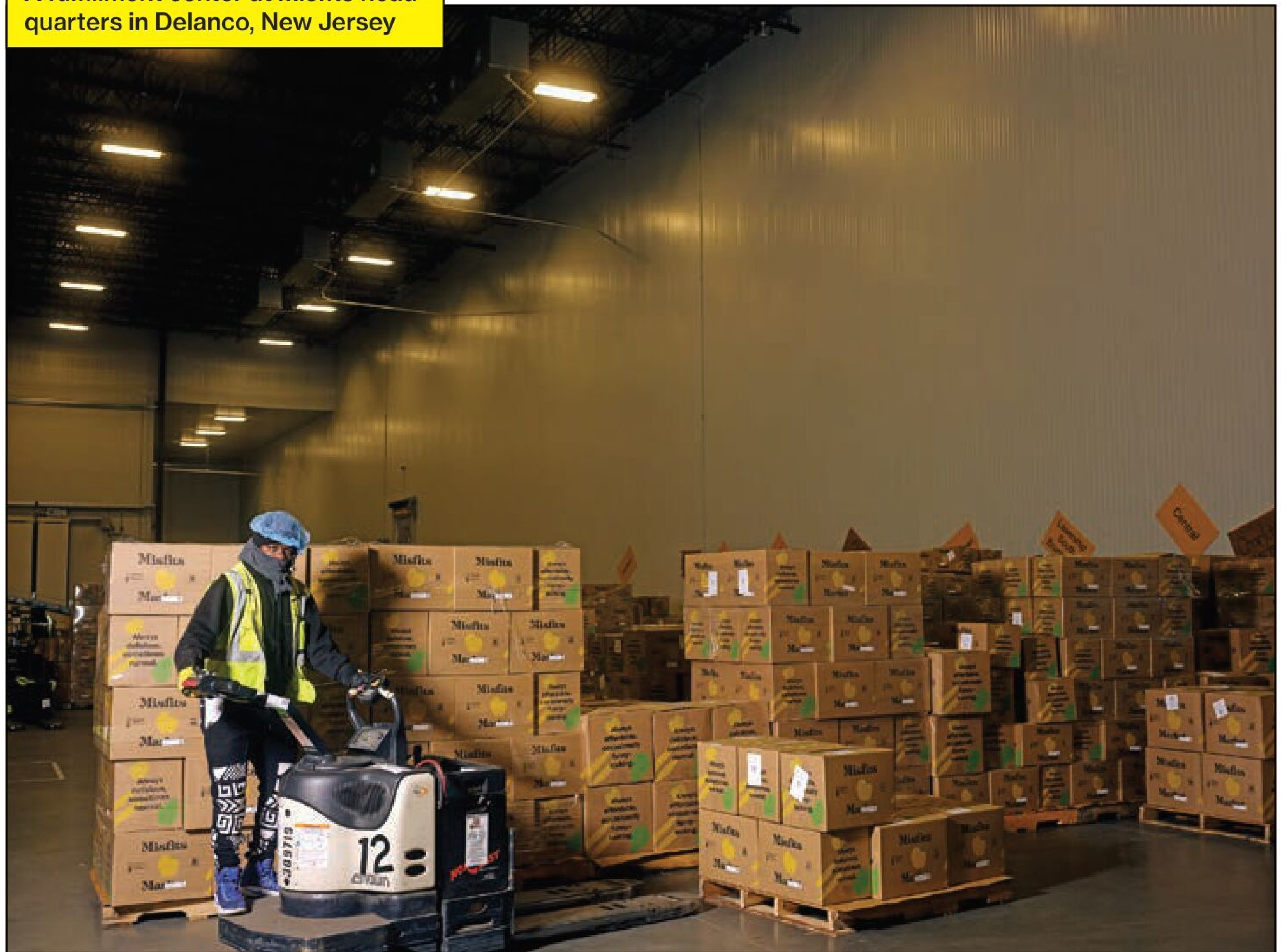
◀ oil and yogurt. "The second a major brand switches over to new packaging, all of your traditional retailers will want new packaging," Litwin says.

Another challenge with this approach is the customer experience it produces. Shoppers mostly want to pick only the items they need, and the site's dependence on salvaged food means there's a chance a product that was there one week will be gone the next. Litwin admits there's "a little bit of give and take" on that front. The main focus, he says, is "identifying the key basket builders and the core staples." With those, you get a significant price cut; the trade-off for other products—what he calls "treasure hunt items"—is unpredictability.

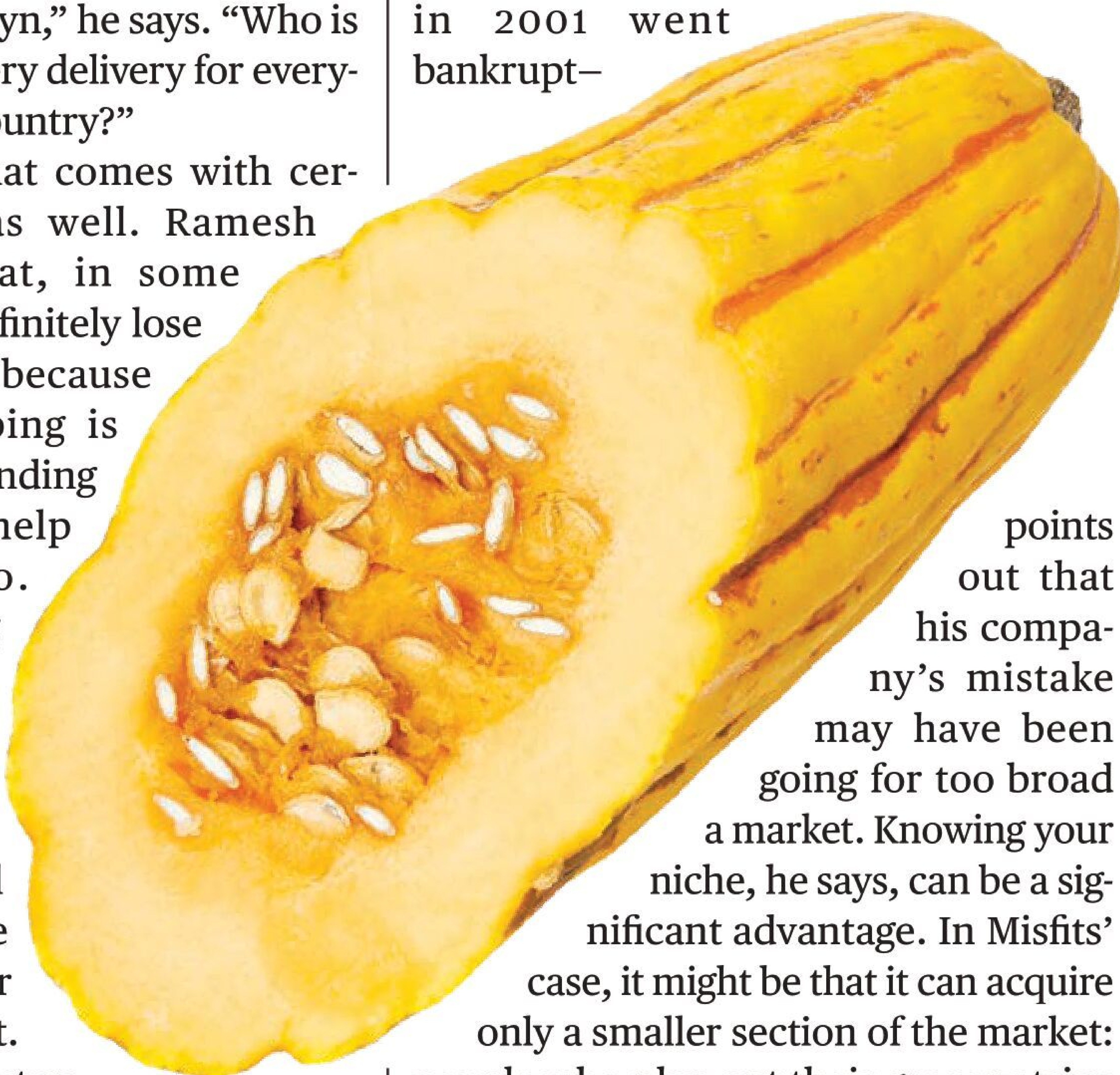
Solving these issues would mean not only continued viability but the potential to expand Misfits' customer base out of urban and suburban enclaves. Ramesh says the company saw "a ton of growth in ZIP codes that were a little bit more remote and isolated" when it went national in 2021. According to its own data, a majority of its shoppers live outside cities, with one-fifth of them in distinctly rural areas where grocery stores are in short supply. "There's going to be a billion different companies that claim to deliver groceries in 20 minutes to your door in Brooklyn," he says. "Who is solving online grocery delivery for everywhere else in the country?"

Trying to do that comes with certain challenges as well. Ramesh acknowledges that, in some rural areas, "we definitely lose money per box," because the cost of shipping is much higher. Expanding inventory could help with that, too. Misfits is also trying to figure out how to allow the 41 million Americans who participate in the Supplemental Nutrition Assistance Program to use their benefits as payment.

It's a lot for a startup founded on busted butternut squash to tackle. Companies as large and well known as Amazon and FreshDirect have found the e-grocery business challenging to crack at scale. But at least one person with significant expertise in the sector sees a window for Misfits to succeed, even if it never becomes a household name. Peter Relan, founding chief technology officer of Webvan—a dot-com-era e-grocer that went public in 1999, reached a customer base of almost 1 million and in 2001 went bankrupt—points out that his company's mistake may have been going for too broad a market. Knowing your niche, he says, can be a significant advantage. In Misfits' case, it might be that it can acquire only a smaller section of the market: people who plan out their grocery trips and don't care about the serendipitous experience of browsing the aisles, for example. Gunning for a smaller portion of the market is a "reasonable" strategy, Relan says. "You may never become mainstream, but that's OK. At least you're not going to go broke."



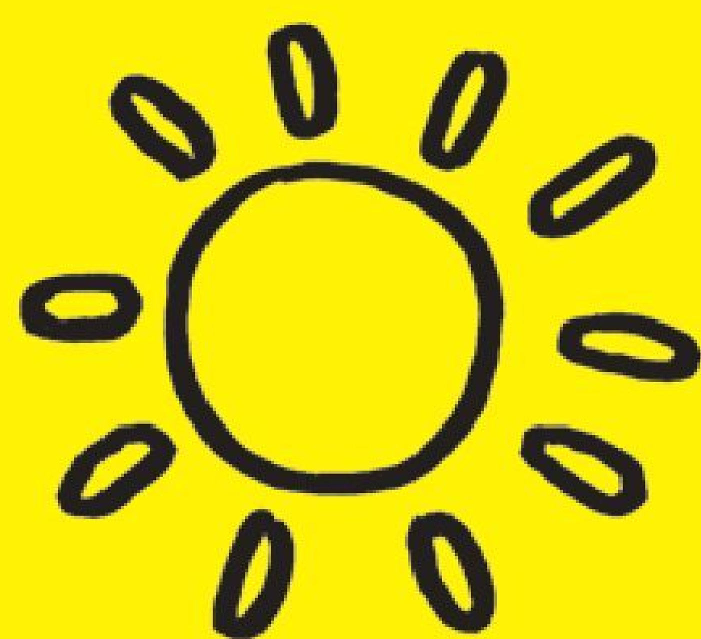
A fulfillment center at Misfits headquarters in Delanco, New Jersey



Yet for Misfits, the lure of something bigger beckons. Perhaps anticipating an opportunity to appeal to people who also appreciate brand loyalty, Ramesh recently started up Odds & Ends, the company's own private label. It sources items such as organic pumpkin puree or bags of mixed nuts—even broken cashews, apparently, can't find themselves a traditional home—and then offers them at the same discounted prices as other foods on the site.

At the fulfillment center in Salt Lake City, Ramesh shows me the new packaging, then invites me out back, where an additional 80,000-square-foot warehouse is under construction. He expects it to come online before the end of the year. That's another capital cost, but given his plans, he'll need the space. "The one thing I've learned with Misfits the last four years," he says, "is that we always go too small." **B**

# How to CASH OUT Without SELLING OUT



## Founders of purpose-driven companies are using trusts to protect their values

Sitting outside the Grand Central Bakery in the Beaumont-Wilshire neighborhood of Portland, Oregon, Chief Executive Officer Claire Randall examines her latte. “Ooh, look!” she says, pointing to a rosetta pattern in the foam. She’s still impressed with the barista artistry after almost 30 years with the company.

While Grand Central is known for its coffee and fresh baked goods, its progressive values and commitment to community are equally important to Randall and her five co-owners. For example, its 11 cafes and two production facilities in Portland and Seattle use carbon-neutral milk and avoid imported, water-intensive avocados. The business relies on local and sustainable farms, offers above-average salaries and benefits and donates a portion of sales to social causes.

Grand Central’s socially conscious values have made succession planning more complicated for the owners, who’ve been approached frequently by suitors. “Many investors want an aggressive return, and over time there’s pressure to grow unsustainably,” Randall says. If the owners sold Grand Central, she figures it would be sold again and again, to larger and larger companies. In time, it’s more than likely that the founders’ values would be whittled away.

It’s a dilemma many business owners confront. For Grand Central, a potential solution emerged in late 2018: an ownership model known as a perpetual purpose trust. More mainstream in Europe but little known in the US, a PPT enables entrepreneurs to transfer ownership to a trust that will guide the business based on values they define. “Our immediate reaction was, ‘Wow, this is so cool!’” Randall says. “You can have a reasonable return on your life’s work and also leave a positive impact.”

After doing a lot of research, as well as investigating other options, ▶

ILLUSTRATION BY C.W. MOSS

◀ Grand Central's owners in May announced plans to transition to a PPT. When the process is complete, likely in late 2023 or early 2024, the business will join a few dozen PPTs in the US. In September, the movement got a boost when Patagonia Inc. founder Yvon Chouinard said he was donating the $3 billion company to a trust and a nonprofit focused on the environment. Separately, Purpose, a network with offices in Chile, Germany and the US that includes both nonprofit and for-profit arms, is dedicated to spreading the concept. The organization shares research and information on purpose-driven business models and also assists companies interested in this kind of ownership structure.

Randall, Grand Central Bakery's CEO and one of six owners, has been with the company for almost 30 years

Organically Grown Co., among the largest US distributors of organic produce, in 2018 became one of the first PPTs in the country. The company was founded in the late 1970s, during the early days of the organic movement in the hippie hotbed of Eugene, Oregon. The owners weren't looking to get rich but rather to change the world, says David Lively, who's held various leadership positions with OGC since 1980. As the business grew, they became increasingly concerned about potential suitors. If the employee-owners voted to approve a takeover, it could strip away the values at the heart of the business. The way to preserve those values, they decided, was to become a PPT.

After the transition, the company was flooded with calls from other business owners looking for advice about making a similar shift. OGC founded an advisory firm—and later a small investment bank, Forcefield Capital LLC—that would focus on PPTs and other "steward ownership" models. "We see this alternative as an antidote to consolidation," says Peter Koehler, managing director at Forcefield, which is working with Grand Central.

To set up a PPT, owners must form a trust to hold all of the company's voting stock, then draw up governance documents, called a trust agreement, with a mission statement to guide the business. Grand Central's mission includes "supporting the food system, being the best employer we can and remaining local and independent," Randall says. Typically, founders who go this route seek outside capital from investors or lenders to finance the ownership transfer. (At Patagonia, Chouinard did things differently, donating his shares to the new entities rather than fundraising and walking away with cash.)

More than stating the company's values, the trust protects them in perpetuity—a board will make sure of this. That's different from a B Corp or an employee stock ownership plan, which can be sold to the highest bidder. "The key in steward ownership is to separate governance rights and economic rights," Koehler says. Whereas most companies distribute profits based on maximizing shareholder value, a PPT's profits are first used to support the mission, leaving more to reinvest. Shareholders receive dividends after that. At OGC, the produce distributor offered a 5% annual return to investors, plus additional upside depending on the company's performance.

Koehler will begin fundraising for the Grand Central transition in 2023, with a goal in the $5 million to $10 million range. "It's a small but growing niche of investors interested in deals like this," he says. "They're sacrificing a bit of control, but they're OK with that."

Grand Central's ownership group plans to maintain a stake in the business, and Randall will remain CEO, a position she's held since 2018. Other terms of the transition haven't yet been made public. And Koehler and Randall declined to comment on Grand Central's valuation other than to say the goal is

Grand Central Bakery has expanded to 11 cafes, including this one in Cedar Mills, a suburb of Portland



PHOTOGRAPHS BY JULES DAVIES FOR BLOOMBERG BUSINESSWEEK

to come close to what the business would fetch on the open market. "I think that's important for the movement," Koehler says.

For investors, there is something of a catch: These deals are generally structured to avoid share price appreciation. That means if the new owners sell their shares, they'll only get back their initial investment. "It's still capitalism, but it's kind of a different angle," says Randall, who notes that she plans to be eating Grand Central scones when she's 80. "When I say it's important that we exist, I'm dead serious—not just Grand Central Bakery, but all kinds of local independent businesses." *—Maureen O'Hagan*

# BREAKING The (Wine) Glass Ceiling

**After building the biggest Black-owned winery, the McBride sisters want to give back by funding female entrepreneurs**

For almost half their lives, the McBride sisters didn't know each other existed. Robin McBride had grown up in California and Andréa McBride-John in New Zealand, and the two only met in 1999, after the death of their father. One of his last requests to his family was to find his daughters and tell them about each other. The family located Andréa after a long search and invited her to visit them in Alabama. While she was there Robin called. Speaking for the first time, the sisters immediately made plans to get together—the next day, in New York. "As soon as we met, we recognized each other immediately and hugged," Andréa recalls. "There was an instant bond."

Andréa began studying at the University of Southern California, and in the coming years the two met frequently. Both had grown up in areas thick with vineyards—Andréa in Marlborough, at the northern tip of New Zealand's South Island, and Robin in Monterey, California—so wine was typically on the table and on the list of things they talked about. One point they kept coming back to: The industry was overwhelmingly White and male, with only 1% of US wine producers owned by Black people. As Black women, they thought, they could begin to change that. "We had a lot of pushback as to whether or not Black women even drank wine, or if Black women could run a wine business," Robin says. "This fueled our passion and our mission."

In 2005 they decided to jump into the business, but since they had scant experience they began slowly, importing wines from producers Andréa knew in New Zealand. Four years later, they began producing their own vintages there, and in 2014 they formed a partnership with spirits giant Diageo to create and sell a California wine called Truvée. "We didn't have any wine business expertise and no capital, but we did have a lot of passion," Andrea says. "I think we had the naivete to not fully understand what we were embarking on, so it didn't scare us."

The Diageo partnership lasted just two years, and in 2017, seeking greater control of the business, they formed their own label, using grapes from suppliers across California and New Zealand. They soon introduced McBride Sisters Collection Reserve vintages, Black Girl Magic wine and She Can spritzers and coolers (delivered, of course, in cans). Deals they've sealed with big US supermarket chains and online retailers helped the company more than double sales last year.

For the sisters, inclusivity and equity are paramount. The McBride Sisters Wine Co. is the world's biggest Black-owned winery. Just over half their employees are people of color, and 93% are women—including the entire winemaking team.

As the business has grown, the two have sought to give back to their community. In 2019 they launched the She Can Development Fund, which mentors women in the industry and offers scholarships and grants. Over the past three years, the sisters have contributed over $400,000 to the fund, Meta Platforms Inc. kicked in $2 million, and other companies have helped out with smaller amounts. In total, the fund has provided more than $3 million to 3,000 women in spirits, hospitality, consumer goods and more. "We got to a place in our business growth where we felt we can help other women," Robin says.

The sisters have since launched various brand extensions and innovative strategies to raise their profile: a book club where titles are paired with one of their vintages, a wine club, and wine- and food-themed events across the US and Caribbean. But while the business is thriving and anecdotal evidence indicates there are more people of color among vintners these days, they insist much more must be done before the industry can really be called diverse. "There is definitely a generational change happening, with more women and people of color in middle management positions," Andréa says. Adds Robin: "Success will be when the industry fully represents the world around us and isn't dominated by one gender or race, but represents the consumer." *—Donna Wilson*

Robin McBride and her sister Andréa both hail from wine-growing regions—in California and New Zealand

# The New Guard

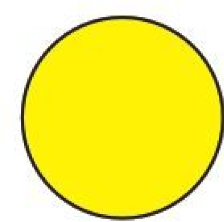
## Old-world power structures are being upended by women-led groups rewriting the rules of business, politics and activism

By Ella Ceron and Claire Ballentine, With Taylor Johnson
Photographs by Wayne Lawrence

"I was hurt twice last year, and this year I hurt my foot. When I told my manager, she told me to take off my sock and decided that because I didn't break my foot, I was OK. And what happens to me happens to everyone."
*—Guillermina Blancas, organizer and McDonald's worker*

"When I started working, there were so many problems. The company wouldn't pay me my salary, and there was a lot of vandalism. When a man pulled out a machete in the lobby of a restaurant I worked at, my manager didn't do anything. I was so afraid, but I had to return to work. My rights are my rights, and the injustices need to stop."
*—Perla Hernandez, Burger King worker*

From left: Guillermina Blancas, Perla Hernandez, Olivia Garcia and Yolanda Arreola



THE ORGANIZERS

It started with a 200-worker walkout in New York City, coordinated by labor and community groups. Ten years later, the **Fight for 15** movement has become a global phenomenon, touching 300 cities and six continents. Angered by commonplace injuries like cooking and oil burns, abusive customers and unfair pay, thousands of workers have participated in protests and walkouts, helping spur change such as new legislation to get a higher minimum wage in Seattle and more political power for restaurant workers in California. "I have learned so much about my rights. I knew nothing before I joined," says Guillermina Blancas, who's worked in fast-food restaurants for 23 years. "The most important thing is that it's an all-for-one kind of fight."

"We didn't have a voice before, and now we know how to fight and what we have to do. Our managers and higher-ups are shaking, because they know they can't steal our salaries; they know that they have to pay us for our sick days."
*—Olivia Garcia, organizer and Domino's Pizza worker*

"It's a superpower. You love and respect your grandmother, and if your grandmother is for or against something, maybe you ought to be for or against it, too." —*Lisa Burns, music teacher and retired program manager*

"Older people can get away with a lot of things that others don't. It's hard to give a hard time to an older woman. We've had people just stand up and clap at restaurants when we pass. They're talking to their young children about us, and it just feels like we are able to have some sort of impact." —*Janice Woldenberg Miller, retired video game designer*

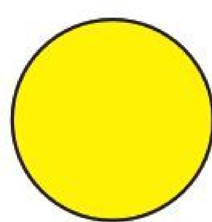
**From left: Peg Spak, Ruth Robertson, Lisa Burns, Janice Woldenberg Miller and Gina Cariaga**



THE ACTIVISTS

"You don't have to be a grandmother to be a granny," says Ruth Robertson, a California-based organizer for the **Raging Grannies**. For members of the three-decade-old social activist group, rage is a bigger part of the equation. Made up mostly of retired women, the Raging Grannies go to protests and political gatherings in over-the-top old-lady garb—a disarming shtick with a surprising ability to rile up a crowd. This year, the group's chapters held a silent march in Portland, Oregon, against gun violence, sang protest songs in Massachusetts in support of Iranian women and turned out for abortion rights rallies across the US. Says Robertson: "We don't necessarily wait to be invited."

"I try to dress like Queen Elizabeth. That's my granny look. But we go where our audience is. We use signage and slogans that let people know that yeah, we're into the internet, we look at Twitter. I'm an old person, but my sign is telling them I know what's going on." —*Gina Cariaga, retired technical writer*



THE POWER BROKERS

Forty years after the first Black woman was elected to Congress, Glynda Carr and Kimberly Peeler-Allen sat in a Brooklyn coffee shop lamenting how few others had been able to do the same. Determined to change the makeup of the country's officeholders, they started **Higher Heights for America**, which provides resources and endorsements to Black women getting into politics. It has helped candidates raise more than $1 million and formed a political action committee. Today, the tailwinds are finally shifting in the right direction: More than 500 Black women ran for federal, state, local or judicial office in the 2022 midterm elections. Although none won their races for governor or the Senate this year, it's clear the possibilities are expanding. "We wanted to be aspirational about where we wanted this country to go," says Carr, the chief executive officer. "Eleven years later, we're the political home for Black women."

"This is a long-term play. Even though our first 10 years we've made incremental gains, there's still a lot of work to be done. We are walking and chewing gum at the same time." —*Glynda Carr, president and CEO*

"It is not an easy road, but we are seeing more women stand in positions of power, we are seeing women who have won their races thank Higher Heights and acknowledge our impact. We continue to grow, and we are not done yet." —*Cheryl Pemberton-Graves, founding circle member*

Glynda Carr (left) and L. Joy Williams. IMAGE AT RIGHT: Cheryl Pemberton-Graves (left) and Joyce Johnson.

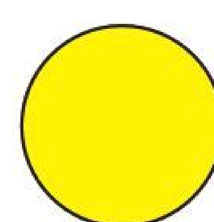
"A White man wakes up and looks in the mirror and says, 'I should run for office.' With Black women, you have to ask multiple times, you have to do a whole lot of convincing. I think our direct impact is more Black women waking up and looking in the mirror and saying, 'I can do this.'" —*L. Joy Williams, chair, Higher Heights for America Political Action Committee*

“When it comes to women’s equality in finance, there are so many different fights to fight. The wage gap impacts you by race, by sexual orientation. What’s good is that there are places where women can access the information.” —*Soraya Joseph, commissioning editor*

“We know that women are not less skilled than men when it comes to personal finance, but they do feel less confident than their male peers, so a lot of the work we do is to close that confidence gap.” —*Jane Whalen, head of brand partnerships*

**From left: Chelsea Fagan, Holly Trantham, Lauren Ver Hage, Soraya Joseph, Jane Whalen, Kristine Gaddi and Saidah Asano-Brooks**

“We’re very much the anti-girl-boss and anti-hustle culture. The girl boss mindset is just the same old capitalist boys’ club wrapped up in pink. We want to help people make the most of their money, without making money and work the center of their life.” —*Holly Trantham, creative director*



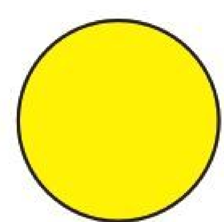
THE MONEY MAESTROS

The women who run the **Financial Diet** aren’t trying to deprive millennials of their avocado toast—they just want them to be able to afford a house, too. Chelsea Fagan started the personal finance media platform in 2014 as a first-person blog about taming her unruly finances and demystifying financial advice. Now the company hosts events, publishes articles and runs a YouTube channel with almost 1 million subscribers. Recent topics include “How Influencers Are Ruining Your Finances” and “Why Money Actually Does Buy Happiness.” Fagan believes there’s an urgency to provide women with sound financial advice: “A huge number of married women don’t even have their own bank accounts,” she says. “That’s a really dangerous place.”

"It's been a great way to showcase Black trans femmes and debunk that myth that there's only Laverne Cox. There's so many all around the world. It feels really great to empower people, especially marginalized folks that just don't get the credit that they deserve."
*—B. Hawk Snipes, board member*

From left: Jordyn Jay, B. Hawk Snipes and Daria Dee

"It's time to evolve and expand and let the world know and see that the girls are capable. The femmes are capable and we're here. It's not just one of us, it's the collective I'm excited about."
*—Daria Dee, board member*



THE TASTEMAKERS

Companies often pay lip service to diversity. Jordyn Jay, founder of the **Black Trans Femmes in the Arts Collective,** makes sure they follow through. Dedicated to advancing Black trans people in creative fields, BTFA has built a database of more than 100 artists for organizations to use when looking to diversify their hiring. Since its first meeting in 2019, BTFA has opened a 2,100-square-foot studio in Brooklyn, New York, built a 42,700-follower Instagram account to promote its members and funneled more than $500,000 to Black trans artists. The group backs people down on their luck, too. It's given grants to Black trans femmes facing housing emergencies; and during the Black Lives Matter protests, it even bailed some out of jail. Now, when companies and showrunners say, "I want to hire a Black trans femme, but I don't even know where to start," Jay responds, "We'll do it for you."

ADVOCACY

THE GOOD BUSINESS ISSUE

# JPMorgan Is Still Trying to Fix Health Care

An ambitious partnership with Amazon and Berkshire Hathaway fizzled, but the biggest US bank is giving it another shot—this time on its own

By John Tozzi
Illustrations by C.W. Moss

Bill Wulf was in a meeting when he missed a call from Jamie Dimon. As an internist and boss of a medical group in Columbus, Ohio, Wulf doesn't often hear from the commanding heights of the US economy. But when he rang back, the JPMorgan Chase & Co. chief executive officer immediately got on the line. Wulf's group had been involved in Haven, a venture led by JPMorgan, Amazon.com and Berkshire Hathaway that aimed to fix American health care with better technology and simplified benefits. But the project had flopped, and Dimon wanted to understand where it had gone wrong.

"Why did we fail? What happened in Columbus?" Wulf recalls Dimon asking in the call two years ago. The city is the bank's ▶

◀ second-biggest US employment hub, behind only New York, making it a crucial proving ground for Haven. Wulf told Dimon that the effort had moved too slowly. A virtual-care program, for instance, had attracted just 150 people in Ohio before the companies pulled the plug. Dimon was undeterred: "We want to do this again," he told Wulf.

For decades, corporate America has poured money into a health-care system that costs more each year without improving workers' health. JPMorgan's bill is about $1.5 billion for its 270,000 employees and their families worldwide, and the workers kick in $500 million more. Dimon, in his annual letter to shareholders this year, called the complexity of health care "staggering."

A 2019 study published in the *Journal of the American Medical Association* estimated that a quarter of the money the US spends on health care is wasted through failures such as overtreatment, overcharging, fraud and administrative complexity. Prices vary dramatically, with, for instance, a frequently prescribed blood test ranging from $18 to $443, the Health Care Cost Institute reports. Less expensive providers often have better records on safety and quality, but it's tough for patients to get reliable information on that. And as it's designed now, the system encourages doctors to deliver more care, and costlier services, even when patients might benefit from a less aggressive approach.

"Waste is what leads to unnecessary patient suffering, and that's what we should go about eliminating"

While individual companies—even the biggest US bank—are too small to change that dynamic, JPMorgan has formed a unit that aims to reshape the broader market for employer-sponsored health care. Morgan Health has $250 million to invest in startups that the company thinks will improve the quality, affordability and equity of health coverage. It's working closely with the bank's benefits team to bring new offerings to its own workers, starting in Ohio. And it's aligning with medical groups such as Wulf's Central Ohio Primary Care to amplify its influence.

With almost 500 physicians, Wulf's practice serves about a quarter of JPMorgan's workers in the area. Wulf believes the factors that make America's health-care system maddening for patients are the same things that make it so expensive for employers: twisted incentives, needless tests and procedures, and missed opportunities to prevent illness. "Waste is what leads to unnecessary patient suffering, and that's what we should go about eliminating," he says.

The Morgan Health experiment will test the extent to which large employers can sway health-care markets. Other companies have tried new, localized approaches, but they rarely reach the scale they aspire to, says Elizabeth Mitchell, CEO of the Purchaser Business Group on Health, a coalition of large employers such as Boeing Co. and Walmart Inc. focused on health-care innovations. (JPMorgan is not a member.) "The challenge becomes, even when you find something that works, how do you move the entire market?" she says.

US employers and their workers spend $1 trillion a year on insurance for more than 150 million people. In 2004, a General Motors Co. executive said the automaker paid more for health benefits than for steel. Over the following decade and a half, US health expenditures roughly doubled, increasing twice as fast as incomes, spurring Warren Buffett to call health care "a hungry tapeworm on the American economy."

To control costs, employers have tried health maintenance organizations that tightly manage care, high-deductible plans that are more expensive for people who get sick, and wellness programs that put people with no symptoms through batteries of tests and screenings. They've placed medical clinics on corporate campuses and tested myriad apps and programs targeting discrete problems such as diabetes or back pain. While some approaches show small-scale success, the relentless rise of medical expenses each year drains company finances, public-sector budgets and workers' wages. The cost of health insurance, shared between companies and employees, is now $22,463 for the average family. Every year.

By the time Haven wound down, Covid-19 had forced companies to face new health-care problems. Beyond the logistics of testing and vaccination, the pandemic amplified a national mental health crisis. And George Floyd's murder brought fresh awareness to long-standing health disparities that disproportionately cut Black lives short.

Not long after Dimon called Wulf, the CEO assigned a top lieutenant, Vice Chairman Peter Scher, to lead the renewed effort on health care. At first, Scher wasn't convinced it was worth another shot. "There are a lot of things we could be spending our time on," he says. "I was perfectly prepared to go back to Jamie and the operating committee and say, 'Listen, it was a good try.' "

As record numbers of workers quit across the economy, Scher recognized that for the bank to compete, delivering better benefits was an imperative, and that helped him get over his initial doubts about the initiative. The pandemic had exposed inequities in the health-care system—and among the bank's staff. "How do we think about our lower-wage employees, people who work in the branches who can't step out and sit on hold with the insurance company for two hours?" he says.

Scher brought on Dan Mendelson, an industry veteran who'd founded and sold an influential Washington, DC, consulting firm called Avalere Health. A skeptic of Haven, Mendelson spent three months in early 2021 helping the bank develop a playbook for Morgan Health aimed at succeeding where the earlier effort had failed. Then he signed on to lead it. Without other companies involved, it could be more nimble, with clearer governance and a sharper focus, Mendelson says.

Morgan Health now has about 30 employees and recently hired Cheryl Pegus, Walmart's top health and wellness executive. The bank has set a five-year goal to reduce unnecessary hospital trips, improve management of conditions such as diabetes, lower financial barriers to care, and narrow health disparities across race, income and geography. To get there, Mendelson says, the company has to encourage doctors to

achieve measurable results rather than reward those who prescribe the greatest number of tests and procedures. "What we're doing is flipping the incentives," he says. "The providers that are working with us are responsible for improving the health of our employees."

On the outskirts of Columbus, in an expanse of office parks and shopping centers known as Polaris, 10,000 JPMorgan employees occupy a broad four-story office complex on a former soybean field. It houses one of the bank's three fixed-income trading floors (along with New York and London), the largest corporate solar panel array in the US outside Apple Inc.'s headquarters and one of Ohio's busiest Starbucks. The Polaris campus, with 2 million square feet of office space, was a major center for Bank One, the company Dimon led before its merger with JPMorgan Chase.

Across an atrium from the Starbucks is a new clinic that's a linchpin of the Morgan Health strategy. While the bank has long had medical centers in its offices for urgent needs and programs such as flu shots, the clinic is meant to be something different: a full-service practice where employees can develop long-term relationships with primary-care providers, wellness coaches, mental health providers and care coordinators.

JPMorgan has opened five clinics in the Columbus area—three in the bank's offices and two nearby for family members on the company plan. Those will also be open to other employers who want to sign on. The goal is to "identify high-risk patients and then bubble-wrap them," Wulf told Ohio business leaders over lunch at the JPMorgan campus in October. "How do we keep you out of the hospital?"

The clinics are operated by a joint venture between Wulf's Central Ohio group and Vera Whole Health Inc. In its first deal, Morgan Health last year invested $50 million in Vera, and it's the only portfolio company that's also signed JPMorgan as a client. (Other investments include a primary-care-centered health plan called Centivo; home-testing company LetsGetChecked; and Embold Health, which provides data on physician performance.) Vera operates clinics for other employers such as the Bill & Melinda Gates Foundation and Seattle Children's Hospital, and it aims to address mental well-being and social circumstances as well as physical health.

Vera considers each visit an opportunity to change the trajectory of a patient's health, even if the person shows up simply to get a cut bandaged. At the new clinics in Columbus, all appointments are booked for at least 30 minutes and many are an hour, giving clinicians time to understand people's concerns and help them manage chronic diseases. To build long-term relationships, patients generally see the same practitioner for each visit—the kind of care that's been squeezed by pressure to cram the schedule with as many patients as possible. "Especially that younger generation, they've never seen good primary care," says Marla McLaughlin, Vera's associate chief medical officer. "They don't even know what they're missing."

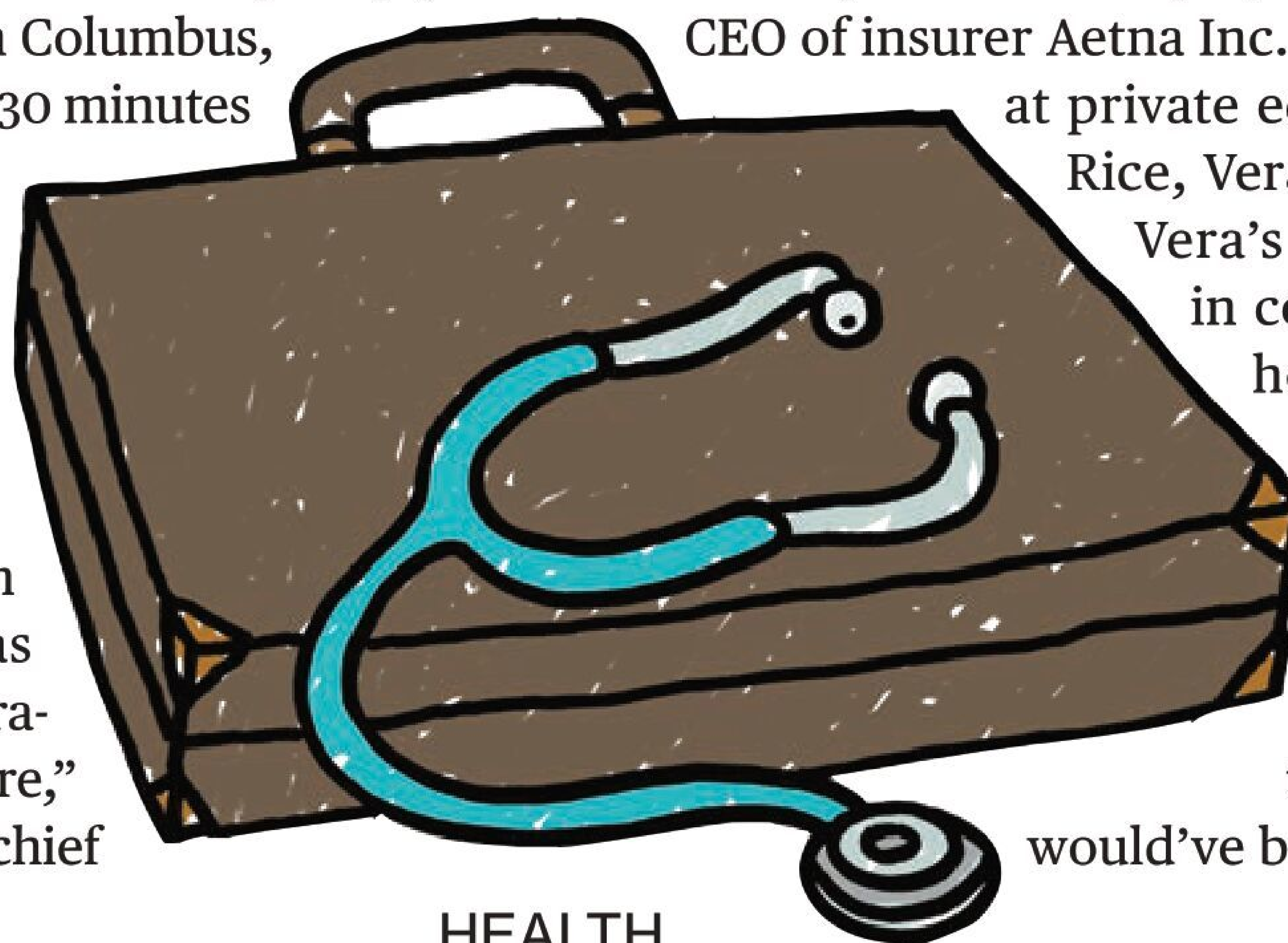
The bank's agreement with Vera ties payments to health goals. It aims for progress on measures such as controlling high blood pressure, keeping diabetics' blood sugar levels in check, and providing people with proper cancer screenings. And Vera will be rewarded for avoiding emergency room visits and steering patients to more appropriate—and less costly—alternatives. JPMorgan declines to discuss financial details of the effort but says the motivation is improving the health of workers and their families, not cutting costs. If it works, though, the bank says the investment in prevention and primary care will reduce high-cost services and hospital stays, ultimately leading to meaningful savings.

Subodh Keskar visited one of the new Columbus facilities in August. A product analyst who works on systems that automatically send out replacements when Chase customers lose their credit cards, he fainted last summer while on vacation in India and spent a night in a hospital there. Back in Ohio, the 45-year-old called more than 15 doctors from his insurance plan's directory before getting an appointment six weeks out.

Then he heard about the new on-site clinic, which had openings right away. The doctor spent more than an hour with him and referred him to a top hematologist. When test results came back, his Vera doctor got on the phone to discuss them. "How many times you call a doctor's clinic and the doctor actually talks to you?" Keskar says, smiling broadly as he recounts the story. He seemed to be healthy, and the doctors thought the fainting was unlikely to recur. But he was instructed to call his Vera physician if anything seemed off. Keskar is converted. "I told my doctor, I'm your permanent patient," he says. "Anything happens, I'm coming here."

To meet Morgan Health's loftiest goals, the bank will have to replicate that experience, and not just for its own workers. The Vera clinics in Ohio saw almost 1,700 patients in the three months after opening. JPMorgan hopes other employers around Columbus will sign on, potentially putting more pressure on local medical providers to shift their practices (and drawing more business for Vera). Beyond Ohio, the bank is looking for like-minded medical groups in markets where it has lots of workers such as New York, Chicago and Dallas.

It will be a yearslong effort that could sputter out like Haven. But if it succeeds, Morgan Health's strategy will offer a road map for other employers, says Ron Williams, a former CEO of insurer Aetna Inc. He's now an operating adviser at private equity firm Clayton, Dubilier & Rice, Vera's majority owner, and chairs Vera's board. If JPMorgan can rein in costs while improving workers' health, other companies "will watch what happens and be fast followers," Williams says. Haven, of course, raised similar hopes. While Williams is optimistic, he's also realistic: "If it were easy," he says, "it would've been done." B



# England's GREEN and TREELESS Land

The UK has a plan to fight climate change with mass tree planting. That's much easier said than done

By Willem Marx
Photographs by Francesca Jones

The Carbon Community site in Wales
is growing about 100,000 trees



Charles Nicholls, who chairs the
Carbon Community, holds a tree-to-be

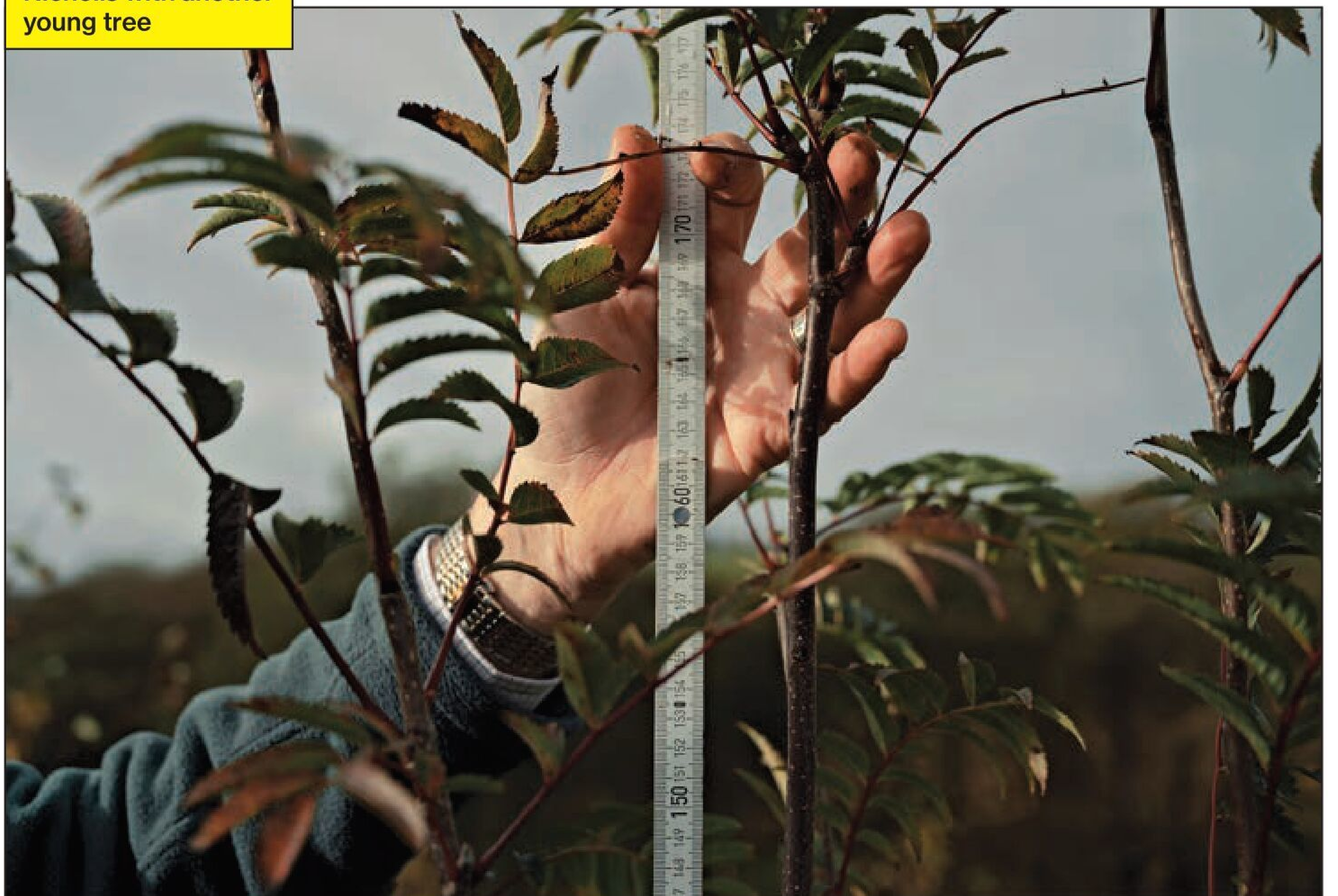
Accelerating along a series of twisting grass tracks, Charles Nicholls pushes his off-road golf cart up the hillside, passing hundreds of saplings sheltered by vertical plastic cylinders. Reaching the top, he clambers off, his thick, dark eyebrows jiggling beneath a mop of gray hair. From that height, Nicholls admires a classic British view: grazing sheep, bright green fields and jagged hedgerows extending in all directions. But like many places in the UK, something is missing from this patch of central Wales: forests. Apart from the planted saplings, the only visible trees are confined to narrow patches along roads, rivers or the edges of farm plots. "We absolutely think of 'England's green and pleasant land,' " Nicholls says, quoting a line from a William Blake poem that's been taught to generations of schoolchildren. But, he says, it's "not necessarily green including forestry."

Compared with most of its neighbors, the UK is relatively treeless, its woodlands felled centuries ago and never replanted. Just 13% of its territory is covered by forest, compared with roughly a third or more in France, Germany and Spain. Along with forestry experts, scientists and policymakers, Nicholls is part of an unprecedented effort to bring back trees and, in the process, transform Britain's climate strategy. The UK has set a goal of reaching net-zero carbon emissions by 2050. Even the most ambitious scenarios don't call for a complete end to fossil fuel use, so meeting the target will be impossible without finding ways to capture carbon from the atmosphere.

One of the simplest and cheapest ways to do this is to expand forests, which extract carbon dioxide from the air as they grow. Last year, the UK government said it intends to help plant as many as 120 million trees annually by 2025—equal to seeding an area the size of Manhattan every 10 weeks. If successful, the effort could serve as a model for other tree-deficient countries looking for ways to offset emissions.

The Carbon Community, the charity Nicholls chairs, is growing about 100,000 trees at its 170-acre site in Wales, where it's taken over several steeply sloped fields purchased from a sheep farmer. Those trees on their own won't make much difference, but they could help solve a problem that bedevils any strategy to cut emissions through planting: No one really knows which combinations of tree species and soil types allow a new forest to pull down and store carbon most effectively, not least because Britain's climate is changing along with that of the rest of the world, becoming hotter and drier. Finding the answers could dramatically increase the capacity of new forests to absorb planet-warming emissions—making net-zero climate goals more attainable.

Roughly a quarter of the trees spread out across the Carbon Community's plot are being used in the research. In one corner of a 28-acre experimental zone, downy birch and sessile oak, species common in Britain, are planted atop samples of a fungus-rich soil taken from established forests nearby—one of several variables being introduced to see whether they encourage faster, more resilient growth and greater carbon storage. A few hundred yards away are Sitka spruce, native to Alaska and the Pacific Northwest, their roots sprinkled with crushed basalt. The theory, so far explored primarily in the lab, is that the rock helps accelerate the carbon absorption of soil around trees. In all there are 72 zones with different combinations of tree species and soil additives. As its samples grow, Carbon Community staff, volunteers and scientists will estimate the amount of carbon stored both in the trees and the surrounding earth to identify which combination of treatments helps sequester the most. "There are big gaps in our knowledge, scientifically, that we needed to try to help fill," Nicholls says.



Nicholls with another young tree

The effort to reforest the UK is a race against time. Planting rates are ramping up far more slowly than will be needed to hit the government's 2025 target, stymied by reluctant landowners, difficulties recruiting planting crews and planning regulations that often favor farms over forests. And while the two-and-a-half-decade runway to net-zero is an eternity in political terms, it's barely enough time for trees planted today to reach full maturity and realize their maximum carbon offset potential. "We're in a bit of a bind," Nicholls says. "We need to go faster."

Trees only began growing in what's now the UK around 10,000 years ago, after the end of the last Ice Age and the retreat of the glaciers that covered much of northern and central Europe. Varieties such as birch and aspen took hold, their seeds likely carried to the British Isles by wind, insects or, in some cases, people. Large-scale logging started not long afterward. From 3000 to 2000 B.C., a small army of Neolithic humans cut down hundreds of trees in southwestern England, using log rollers and wooden staves to haul, position and then raise up the blocks we now know as Stonehenge. Over the subsequent

centuries, millions of trees came down to provide firewood, frame houses and build the hulls of the seagoing vessels that would allow Britain to rule the waves. By the late Middle Ages, there were relatively few wooded areas outside of "royal" forests, which were left in their natural state to provide hunting grounds for monarchs and the nobility. (The semimythical Robin Hood lived in the most famous among them, Sherwood Forest.)

**By the late Middle Ages there were few wooded areas except for "royal" forests, such as Sherwood, where Robin Hood was said to live**

The UK overall is more densely populated than any other large European country, while England is about as dense as the Netherlands, leaving little space for replanting. Not surprisingly, residents stopped relying on their own forests for raw materials a long time ago; today, the UK is the second-largest net importer of timber after China, spending just under $9 billion on overseas wood last year.

In June 2019, under Prime Minister Boris Johnson, Britain became the first major economy to pass legislation establishing a net-zero target. Opinion polls indicate the policy is widely popular, and new leader Rishi Sunak has said he's committed to it. At the time the net-zero goal was formulated, the Committee on Climate Change, a government body that advises on environmental issues, warned that "a sharp, sustained increase in afforestation is essential in order to deliver natural greenhouse gas removals at the necessary levels." Over the next several months, George Eustice, then the environment secretary, announced a series of forestry programs with a two-year budget of about £750 million ($919 million), intended to more than triple annual planting by 2025.

The UK fell off the pace almost immediately. Unlike in the US, where federal and state governments control huge swaths of land, the vast majority of rural property in the UK belongs to private owners. Despite generous subsidies, few seemed interested in converting farming or grazing land to forest. In the most recent planting season, which ran from April 2021 to April 2022, fewer than 14,000 hectares (34,600 acres) were reforested, equating to perhaps 23 million trees. That may sound like a large number. But a calculator from the US Environmental Protection Agency, combined with recent UK research, indicates that this forested land's carbon storage would counteract just a year's worth of emissions from fewer than a million cars.

"I would think it's highly unlikely that we're anywhere near close to achieving those targets, just based on obvious things like land availability," says Beth Brook, chief executive officer of the Heart of England Forest, a nonprofit focused on reversing woodland decline. "We are very pleased to see those targets, but they've not really thought about the implications." A spokesman for the Department for Environment, Food and Rural Affairs says the UK is now "firmly on the trajectory towards achieving" its 2025 goal. Based on the most recent government data, this would require a 117% increase in the planting rate over the next 27 months.

Scientists are trying urgently to ensure that all those trees are the right species and planted in the right sort of soil. In the most basic terms, a tree's ability to absorb carbon is a function of its biomass, or the total volume of its leaves, branches, trunk and roots. Not surprisingly, established forests are more effective at the job than fields of young saplings—a big part of why the UK helped broker a deal at last year's United Nations climate conference in Glasgow under which 100 nations agreed to rein in deforestation. Brazil and Indonesia, which have faced bitter criticism from environmentalists for allowing rainforests to be destroyed for industrial agriculture, co-sponsored and signed the pact.

Tree scientists have a variety of tools for calculating biomass, which is typically estimated using measurements such as trunk diameter, canopy spread and height. Determining a precise rate of carbon sequestration is tricky, not least because it's impossible to weigh a living tree. Instead, the forestry industry relies on rough estimates derived from those more easily measurable data points. There is continued scientific debate, though, about which parts of a tree sequester carbon and at what speeds, particularly when it comes to roots, given their contact with the soil. (The acidity of soil directly determines how quickly carbon molecules pass from the tree into the earth, where they can remain.)

Precipitation is also a major factor. Water is key to leaf growth, which allows for more successful photosynthesis. But in some landscapes, rainwater runoff can carry away important nutrients. The surrounding temperature and atmospheric gas levels can also alter a tree's carbon storage capabilities; warmer, dryer weather means the soil around roots doesn't absorb as much carbon, while elevated $CO_2$ levels in the immediate area can help with carbon uptake.

Tree-planting efforts have created opportunities for companies such as Tilhill Forestry Ltd., a commercial forestry company headquartered in the ancient Scottish city of Stirling. Among other services, Tilhill manages forests for clients who range from individual investors, with just a dozen or so acres planted, to large asset managers with tens of thousands. Some are in it purely for the financial return, while others are looking to offset their own carbon footprints, in line with net-zero pledges that have been adopted by hundreds of major corporations. A key aspect of Tilhill's business model is persuading landowners to transition away from traditional farming and instead create forests, which Tilhill argues can be more lucrative, especially now that subsidies can cover most planting costs.

Once planted, forests can generate profits a few different ways. The most obvious is through harvesting: cutting down trees for lumber once they've reached full maturity. For most species, that takes 30 years or more, but that's no deterrent to investors, including pension funds and university endowments, which need to lock in long-term returns. ▶

◀ Assuming the harvesting is carried out sustainably (for example, by leaving enough healthy trees to ensure a woodland can regenerate), the carbon sequestration at that site can continue. If the harvested timber is used for construction, the carbon captured in the wood is locked up for generations, essentially as long as a building remains standing.

Another path to profit is through the UK's carbon market, which split from the European Union's larger Emissions Trading System after Brexit. British law requires some big emitters, including airlines and fossil fuel power plants, to purchase permits for each ton of $CO_2$ they produce. The current price of a 1-ton permit is about £70; at that level, the net volume of $CO_2$ accumulated in British forests in 2020 alone would be worth £1.42 billion. Landlords can sell their credits on the open market; thanks to another government-backed program, they're also guaranteed a financially viable price for carbon credits when the market price is low.



Tilhill plants more trees than any other organization in the UK, but its forestry director, David Edwards, isn't convinced that Britain can hit its reforestation goals. "It's not like an international manufacturing process where you can just speed up the conveyor belt," he says. Relatively few British workers are willing to spend long hours on their hands and knees, digging out holes for saplings; nurseries are often backed up and may not stock hardier species, such as oak variants from southern Europe, that may be likelier to thrive in a warmer climate. The biggest obstacle is the UK's ferocious land-use planning system, which makes would-be forest owners jump through complex approvals from local bureaucrats. That's especially true when the goal is to convert agricultural land, which is often protected on environmental grounds, though it's been intensively shaped by humans for centuries.

Relatively few British workers are willing to spend long hours on their hands and

One of Tilhill's recent projects illustrates the challenge. In southern Scotland, the company had teamed up with a tenant farmer who wanted to buy land he'd previously leased. To finance the purchase, the farmer had asked Tilhill to help find an investor who wanted to plant trees on 100 hard-to-farm acres, while he continued to cultivate the rest as before. The potential investor would wait 30 years for the trees to be ready for harvesting, after which their initial outlay—reduced by government planting grants—could roughly quintuple in value.

Scotland's agriculture department, which must approve any change in land use, soon vetoed the plan, telling Tilhill that the land "was of a quality we would prefer to see retained in agriculture," despite the UK's climate goals. The company considered appealing the decision on the grounds that the plot was only marginally useful for agriculture, but the farmer worried that such a challenge would be too costly. Meanwhile, the uncertainty created by the initial refusal made it hard for Tilhill to recommend the land to investors.

Edwards of Tilhill Forestry, which tries to persuade landowners to transition from farming

Edwards argues that the UK can balance farming and tree planting, particularly because many farms include patches of land that are ill-suited for planting and harvesting crops efficiently. But they might just sustain a few thousand viable trees. And the potential climate gains from nationwide tree planting are significant, especially if the industry incorporates lessons from sequestration research that's now under way.

The summer of 2022 was one of the UK's hottest on record. Temperatures in London soared above 35C (95F), while one town in Lincolnshire recorded a high of over 40C, shattering the national record. Britons aren't accustomed to extreme heat; almost no one has air conditioning, and railways, office buildings and power networks weren't designed to cope with Miami-like temperatures. For some, this can be a matter of life and death. Preliminary analysis from the Office for National Statistics found that deaths spiked by an average of more than 100 per day during the summer's hottest periods.

Common British trees such as oak, chestnut and beech, which have evolved in the UK to rely on frequent rain and moist soil, are similarly vulnerable. And if a tree can't thrive in its environment, its carbon sequestration capacity falls. If its surroundings are so hostile that it dies, its carbon storage function ceases—or even goes into reverse as the wood decomposes, releasing carbon molecules back into the air. According to a 2019 study by a group of scientists at the Swiss Federal Institute of Technology,

Emson, a venture capital investor, is working on growing more sequoias

London's climate by 2050 will match that of Melbourne today, while Manchester will see temperatures and rainfall comparable to that of modern-day Montevideo, the capital of subtropical Uruguay.

Unless the UK introduces tree species that are more resilient to its likely future conditions, "we're planting trees to die," says Kevin Martin, the head of tree collections at the Royal Botanical Gardens in West London. At Kew Gardens, as the sprawling facility is known, decades-old beech trees are beginning to suffer from lack of water. Some have had to be cut down to prevent dead branches from falling on visitors.

Researchers trying to determine which trees to plant in the UK are therefore chasing a moving target. They don't just need to know which species will best absorb carbon now, but also how that mix is likely to change in the future. Henrik Sjoman, a plant scientist at the Swedish University of Agricultural Sciences, studies the performance of trees in urban environments, and particularly how they're likely to cope with more extreme climatic conditions. "This is not rocket science," Sjoman says. "The bigger, the healthier the trees are, the more ecosystem services they can deliver"—not just carbon sequestration, but also cooling hot neighborhoods and filtering rainfall through their root systems. "But to be able to deliver all these ecosystem services, they need to tolerate the future climate."

In 2018, Sjoman traveled with colleagues to the former Soviet republic of Georgia, on the Black Sea, to look for trees. Known throughout Eastern Europe for its wine, Georgia is warm enough to be a popular summer beach destination. Its current climate is similar to what scientists expect for London in the late 21st century, and Sjoman wanted to learn more about the trees that thrive there. In a town called Kutaisi, some locals helped Sjoman and his group pinpoint an area of ancient forest.

After bumping down country lanes and across fields in their four-wheel drive, they reached the right GPS coordinates, finding dense stands of oak, hornbeam and elm from subspecies obviously well-suited to warm, dry conditions. "That's a hallelujah moment," Sjoman says. The researchers collected samples of the trees' seeds and brought them back to Sweden, where they now grow in a botanical garden. After getting a better understanding of the trees' attributes, they plan to pitch them to nurseries in the UK and the Nordic countries. If all goes well, their saplings could soon be planted in London and other cities, absorbing carbon as they grow.

A baby sequoia at a Great Reserve site in Wales

d knees, digging out holes for saplings

On another hill in Wales, not far from the Carbon Community's experimental plantation, a venture capital investor named Henry Emson is trying to grow an unusual kind of tree. Exceptionally long-lived, with trunks as big as 10 meters in diameter, giant sequoias are popularly associated with California's Sierra Nevada, where they're under increasing threat from warmer temperatures and wildfires. But they've been successfully grown in small numbers in more northerly regions, and establishing populations in Europe may help guarantee their long-term survival. Emson is aiming to dramatically increase their numbers through his company, the Great Reserve, which charges individuals about $1,000 to plant a giant sequoia sapling. In theory, this can offset a lifetime's worth of carbon emissions.

While his pitch can sound like a gimmick, Emson is backed up by science. Sequoias are prodigious carbon absorbers, mainly because they grow so much larger than more common species. "We need to think carefully about tree-planting strategy for the purpose of addressing climate change," he says. Alongside each Californian import, the Great Reserve seeds three native broadleaf trees, such as rowan and silver birch, in an effort to promote biodiversity. The company's ultimate goal is to plant at least 100,000 giant sequoias in the UK, outstripping the number believed to remain in the US.

As Emson speaks, an older man, Graham Bond, appears some way down the hillside. Bond is picking out a young sequoia to plant with his wife to mark their 40th wedding anniversary. He underwent surgery to remove a brain tumor just weeks earlier and is a bit unsteady on his feet, but he insists on digging up the earth himself to place the sapling he's chosen. After he finishes, he kneels down, easing the infant tree into the hollow. "It's an amazing thing the planet can do to replenish itself," Bond says. "In 3,000 years' time, it'll hopefully be in the same spot." B

# Getting to Work in America

## When thousands of migrants arrived in New York City, many tried to find jobs to survive. It's harder than it may seem
Photographs by Natalie Keyssar

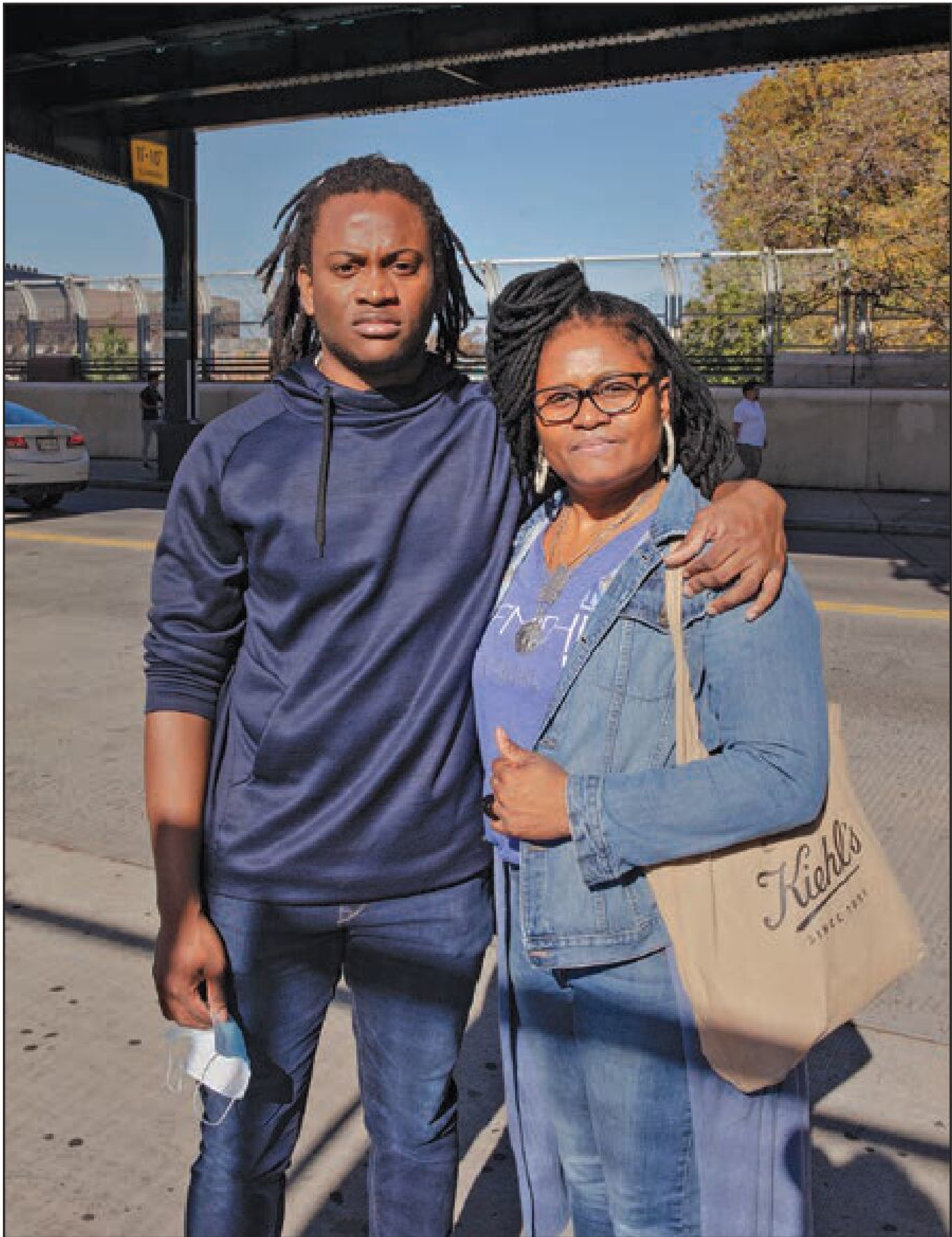
New York experienced an influx of new arrivals this year, as people fled political instability and economic upheaval in South America. Thousands were bused into the city from states such as Texas and Arizona. Now they have to make ends meet. That typically means finding a job.

But for those still waiting for their papers, work can be grueling and hard to come by. To help migrants navigate the city's informal economy, multiple nonprofits have sprung into action. Volunteers and organizers from groups including New Immigrant Community Empowerment (NICE) and Catholic Charities of the Archdiocese of New York have enrolled people in construction-site safety trainings and informed them of their rights as workers. They've also started crowdsourcing work boots for adults and coats for children and have circulated information about so-called *paradas*, the Spanish term for street intersections where people can pick up day labor jobs.

It's still risky: Migrants can be denied asylum if courts learn they collected pay while undocumented. Many people show up anyway, hoping to earn \$80 or \$120 a day in cash. "We meet them in the reality of their situation," says Diana Moreno, the deputy director of NICE. "You have to eat, you have to pay for your family." —*Ella Ceron*

A LABORER'S HAVEN
Many organizers and volunteers at NICE are immigrants. Working out of a center in the Jackson Heights neighborhood in the borough of Queens, the group focuses on migrant families and laborers from countries including Colombia, Honduras and Venezuela. It offers Occupational Safety and Health Administration clinics and job training, and it's launched an initiative to prevent wage theft—a persistent problem for undocumented workers.

◀ Moreno of NICE tries to help people understand their rights and stay afloat without jeopardizing their immigration status.

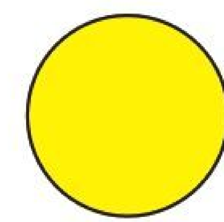


▲ Martin Alvarez, 19, stands with his mother, Karen, a lawyer from Honduras who was forced to flee after advocating for land rights for the country's Afro-Indigenous Garifuna people. They both work at El Centro del Inmigrante, a group that helps immigrant workers and their families. Karen offers assistance with addressing wage theft, as well as other legal aid, and Martin works as a front-desk associate.

▲ Jhonnys (left) and Juan came to the US from Venezuela. They crossed the notoriously dangerous Darién Gap along Panama's border with Colombia on foot with their wives and are currently living in a hotel in Midtown Manhattan. Multiple hotels in New York have been repurposed to accommodate the influx of people.

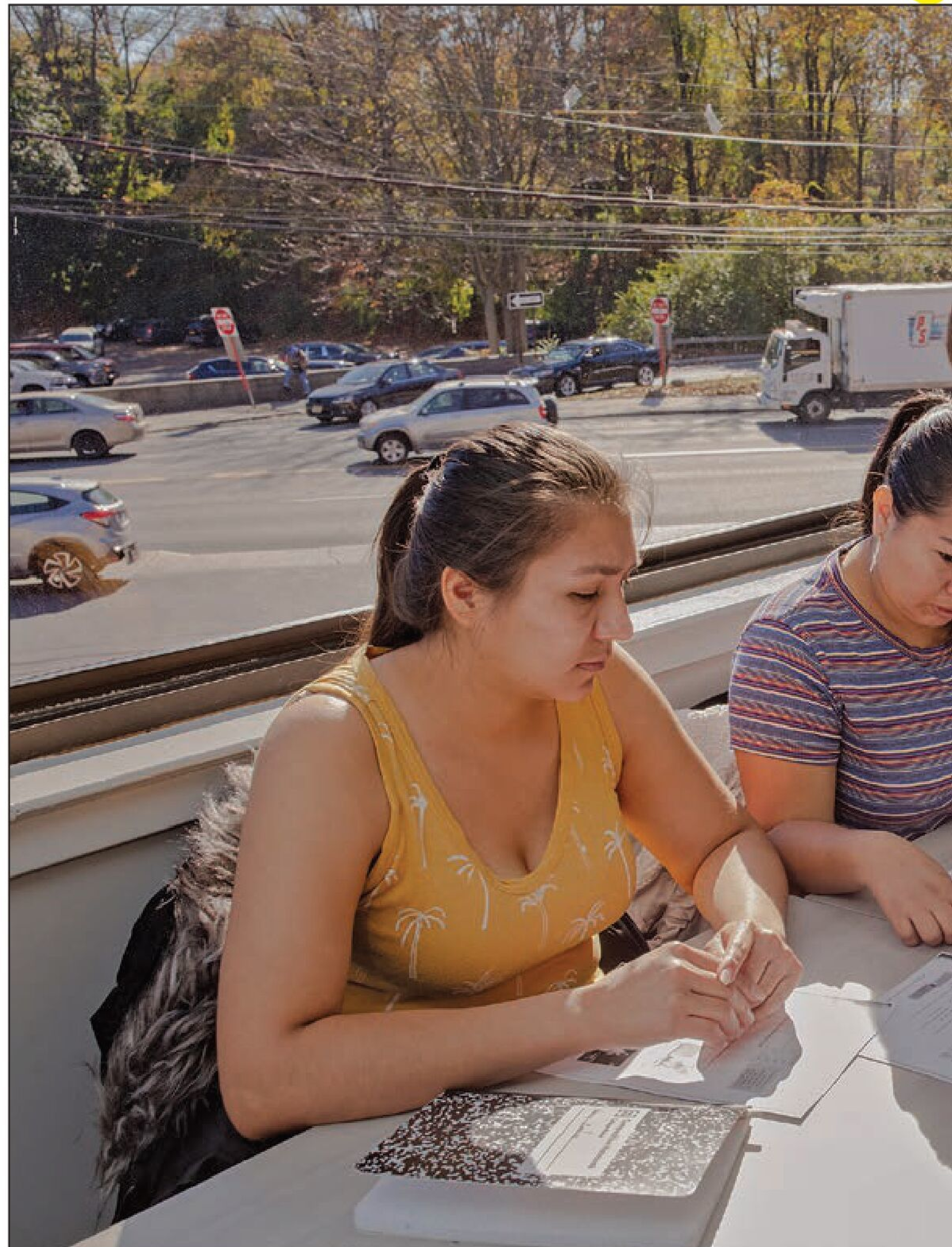
▼ At NICE, helmets hang above the organization's monthly calendar to memorialize immigrant workers who were killed at job sites. Part of the group's mission is to raise awareness about dangerous and unregulated businesses such as construction using immigrant labor, and to highlight the exploitation many laborers face on the job.

▼ Gloria Valencia, from Puebla, Mexico, has been in the US for 17 years. She volunteers with Catholic Charities providing free haircuts to migrant workers and their families. Her philosophy: “One has to give back a bit to the community in whatever way they can.”



FOOD AND A HAIRCUT

Catholic Charities of the Archdiocese of New York recently bought the top floor of a strip mall in Yonkers that’s long served as a parada for migrant workers seeking jobs. The group uses the space to provide English classes, food, training and a place to warm up. Below, two native Spanish speakers take free English lessons at the center.



▼ Jose (left) looks for work every day and finds it about two or three days a week, mostly soldering. “There are good people, and there are people that treat us like animals,” he says. “People that want to squeeze the last drop out of you when you’ve already given everything, and people who are the type to say, ‘Hey it’s really hot out, go take a break.’ ”

◀ Catholic Charities offers free meals to people looking for work. It also helps with immigration paperwork and work authorization applications.

▼ Olimpia Campos, from Mexico City, is on the board of the Catholic Charities center in New York. Immigrants are an "essential part of our community," she says. "It is so important to provide them with the skills needed to make a living in their new homes."

# The Club With a 60,000-WOMAN Waitlist

**A $1.1 billion startup is creating support groups for women in the workplace. Only executives need apply**

When Ashley Cordova was promoted to chief financial officer of the cancer treatment company Novocure Ltd., she was the only C-level executive there who was a woman.

The experience was lonely. Her male colleagues were supportive, but they had different experiences and challenges at work. And few of her closest female friends could relate to the stresses of running the finance department of an $8 billion oncology corporation.

Now, Cordova meets every month with a group of about 10 women who have similar roles across different industries and can discuss common problems and management strategies. The meetings, which run for about 90 minutes, are facilitated by a startup called Chief—a kind of private club for female executives. "I was looking for a group of colleagues, women I could trust," says Cordova, who became a member two years ago. "What I really needed was a group of peers."

Launched in 2019, Chief has about 20,000 members and a waitlist that's 60,000 names long. The startup became a unicorn in March, when its valuation reached $1.1 billion. It's attracted prominent investors such as General Catalyst and CapitalG and hosts speaking events featuring leaders like Martha Stewart, Amal Clooney and Diane von Furstenberg.

Variations on women-only professional networks stretch back decades. Some have been more successful than others. A few high-profile examples—such as the Lean In meetups spearheaded by Facebook's Sheryl Sandberg and the now-defunct coworking space the Wing—have faded. Others are still around, such as New York-based groups Luminary Legacy LLC and Ellevate Network. But while most women's networks have aimed for broad inclusivity, for the attendees of Chief's 10-person gatherings the smaller tent is the point.

Only women who have already reached a senior executive level are eligible to join Chief. Each new enlistee is assigned a group of other executives with similar levels of experience. They can change groups if they get a promotion. The point isn't mentoring, according to Chief co-founders Carolyn Childers and Lindsay Kaplan; it's creating a way for members to get practical help and advice.

"The system is slow, and the system is slow on purpose," Kaplan says. "We need to be sure that the people who do break through are supported when they get there."

Chief started operating in a tastefully decorated clubhouse in New York City's Tribeca neighborhood. Quickly, the group's waitlist ballooned to 1,000, its founders say. Over the following year, they added four more cities. Then the pandemic hit.

Covid-19 lockdowns wrought havoc on the world of coworking. Female-focused spaces like the Riveter closed their brick-and-mortar operations, and the Wing shut down entirely. But Chief





ILLUSTRATION BY C.W. MOSS

hung on to its physical spaces, which it envisioned as clubhouses and not as offices. At the same time, it pushed hard into digital offerings, embracing virtual meetings and seminars.

The result was liberating, the founders say. Membership surged, and this year Chief officially opened up its services nationwide. In January the startup will launch its first international location, in London.

Not every organization ascribes to Chief's model of meeting in small, elite groups. Many women struggle to reach the C-suite at all, sidetracked during their child-bearing years or otherwise stalled on the corporate ladder, says Cate Luzio, founder and chief executive officer of the women's networking platform Luminary. "Women are promoted on performance, and men are promoted on potential," Luzio says. "This is a systematic barrier that's facing all women in all industries." Luminary has 60 corporate partners and about 5,000 members who include women at every stage of their careers, and even some men. "Our mission is to advance women in the workforce, but we can't do that without men," she says.

By contrast, Chief's main offering is its 10-person networks, called "Core" groups. Novocure CFO Cordova counts the members of her Core group as friends, and she makes a point of carving out time for their call every month—routinely dialing in from Switzerland, which is seven hours ahead of her Eastern time zone schedule. In one recent meeting, the group counseled a member who was seeking a promotion and a raise. Each woman offered advice based on her own experiences trying to break into her respective old boys' club.

"We want to show up for each other," says Jenna Freed, human resources chief at Acres Capital LLC and part of Cordova's Core group. "We all know the path we took to get where we are has been a lot of teeny-tiny steppingstones." *—Jeff Green*

# Faux Cocoa's ETHICAL EDGE

## Makers of imitation chocolate offer supply chains free from child labor and mass deforestation

For thousands of years, humans have been drawn to chocolate. Its production these days, though, is linked to widespread deforestation and child labor, posing an ethical quandary for consumers. A British startup says it has the answer: a guilt-free alternative to chocolate that can be indistinguishable from the real thing.

Chocolate's irresistible flavors depend on the fermentation of cocoa that occurs shortly after harvesting, when beans are piled under banana leaves and left for several days. In its East London facility, WNWN Food Labs Ltd. aims to replicate that process using British barley and carob from southern Europe. Squares sampled by *Bloomberg Businessweek* journalists were convincing imitations of cocoa-based bonbons in terms of taste, texture and appearance; a hazelnut variety was a more believable substitute than the milk chocolate one.

WNWN—pronounced "win, win" and originally derived from the phrase "waste not, want not"—uses gas chromatography mass spectrometry techniques employed by vegan food manufacturers to analyze a particular chocolate's flavors and aromas at the molecular level and to identify traits it wants to mimic. "The real drivers of the flavor creation, the way we tease these flavor molecules out of our plant-based substrate ingredients, is the fermentation," says Johnny Drain, ▶

Bars made by WNWN contain fermented carob and barley

PHOTOGRAPHS BY CARLOTTA CARDANA FOR BLOOMBERG BUSINESSWEEK (3)

WNWN co-founders Pak and Drain

◀ WNWN's co-founder and chief technology officer. Other startups with similar ambitions include Munich-based Planet A Foods, which makes fake chocolate treats from fermented oats, and California Cultured Inc., which uses cacao cells to produce lab-grown chocolate in Davis, California.

Two decades ago, Nestlé, Mars, Hershey and other big chocolate makers signed what's called the Harkin-Engel Protocol, a pledge to end the worst forms of child labor in their supply chains. But the US Department of Labor estimates that 1.56 million children still work in the industry. And after cattle, oil palm and soy, cocoa is the commodity that's replaced the most forests globally. Ivory Coast, the top cocoa producer, has lost about 85% of its forests since the 1960s, mainly as a result of the trade.

Candy companies have set targets for cocoa purchases that are certified as ethical by groups such as Fairtrade International and Rainforest Alliance. They're trying to improve the traceability of beans beyond direct suppliers, and they've started educational initiatives and programs to help families get children back into school. But nonprofit campaigners argue there's a simpler solution to the industry's ills: Companies need to pay more for cocoa. Ghana and Ivory Coast have imposed surcharges and premiums on cocoa exports to bolster farmers' livelihoods, but some buyers have been able to negotiate out of paying up, particularly during times of weaker demand.

Growing consumer awareness about cocoa's dark side has opened the door to entrants selling premium-priced bars advertised as sustainable and ethical. The most notable is Amsterdam-based Tony's Chocolonely Bars BV, founded in 2005 by three journalists, which says it can trace 100% of the beans it sources. But even Tony's finds child labor in its supply chain.

WNWN says it's better to just avoid cocoa altogether. Drain, who's worked as a gastronomic consultant for restaurants including Copenhagen's Noma and Mirazur in Menton, France, founded the company in 2021 with Ahrum Pak, a former investment banker. They secured $1 million from FoodLabs, a Berlin venture capital fund, and are working on a seed financing round.

WNWN plans to open a factory next year in Portugal, where it aims to produce as much as 150,000 kilograms (331,000 pounds) per month. It released two limited-edition bars in 2022 and plans to make one product available in UK supermarkets next year. Eventually it wants to supply major food companies with alternatives to chocolate and other ingredients that pose sustainability and ethical issues, such as vanilla and coffee. "We call ourselves an alternative ingredients company," says Pak, who's chief executive officer. Drain says opting for alternative ingredients could allow Nestlé SA to use 60% less water in the making of its Kit Kat, as well as reduce the greenhouse gas emissions impact of the bar's production by 80%.

Nestlé declined to comment on the prospects for cocoa-free chocolate. A spokesperson says the company sources half of its cocoa through its Cocoa Plan, which aims to curb child labor and tackle deforestation in producing countries. The company's initiatives include offering farmers cash incentives for keeping their kids in school and adopting regenerative agriculture practices.

Temperature is monitored closely during the mixing of ingredients used in WNWN's fake chocolate

One challenge for makers of imitation chocolate is that they're going after the same target market as brands such as Tony's Chocolonely, and it's unclear whether consumers will make the switch, says Arlin Wasserman, founder of food consulting firm Changing Tastes. It's also difficult for people to ascertain which brands are really succeeding at weeding out child labor, he says. "Most of the chocolate products that I see are all making a claim to address the issue," says Wasserman.

The cocoa-free companies can learn from producers of meat substitutes, says Cyrille Filott, global strategist for consumer foods, packaging and logistics at Rabobank. "Initially it is about creating attention, which requires a lot of money," he says. "And from there, hopefully the product has a good taste and texture."

Drain insists taste and texture are areas where WNWN's products shine. "It's not just a carob chocolate bar," he says. "It's a facsimile, analogous to chocolate." —*Clara Hernanz Lizarraga*

# Wrestling With a Russian Exit

A list of companies that have left Russia highlights the economic costs of sanctions

By Robb Mandelbaum
Illustration by C.W. Moss

Jeffrey Sonnenfeld woke up to a bit of encouraging news one day last summer: He was officially an enemy of the state. The Russian state, that is. A professor at the Yale School of Management, he'd inserted himself into that country's war with Ukraine by creating a global list of foreign companies that trade in Russia. Sorted by the extent to which businesses have retreated from Russia since the invasion, the list assigns grades to almost 1,400 of them, from an A for complete withdrawal to an F for what Sonnenfeld calls "digging in." His directory quickly became a cudgel against companies stubbornly holding fast and counting their rubles—and a long stick to poke the Russian bear. It's also elevated a mild-mannered business professor famous in management circles into an unusually influential role in the campaign to bring President Vladmir Putin's would-be resurrected Russian Empire to heel.

Now Sonnenfeld found himself among 25 American policymakers and academics added to a Russian "stop list" who are barred from entering the country. First Lady Jill Biden led the list, but Sonnenfeld notes, with a wry smile, that as the sixth name, "I'm higher than Mitch McConnell."

Sonnenfeld is careful not to explicitly articulate a point of view on whether companies should stay in or leave Russia, but his work speaks for itself. "Our position isn't overtly one about advocacy," he says—just before acknowledging, with a slight laugh, that "it might subtly be so, when you're listing companies and grading them." In conversation, he calls the executives who've pulled out of Russia "courageous."



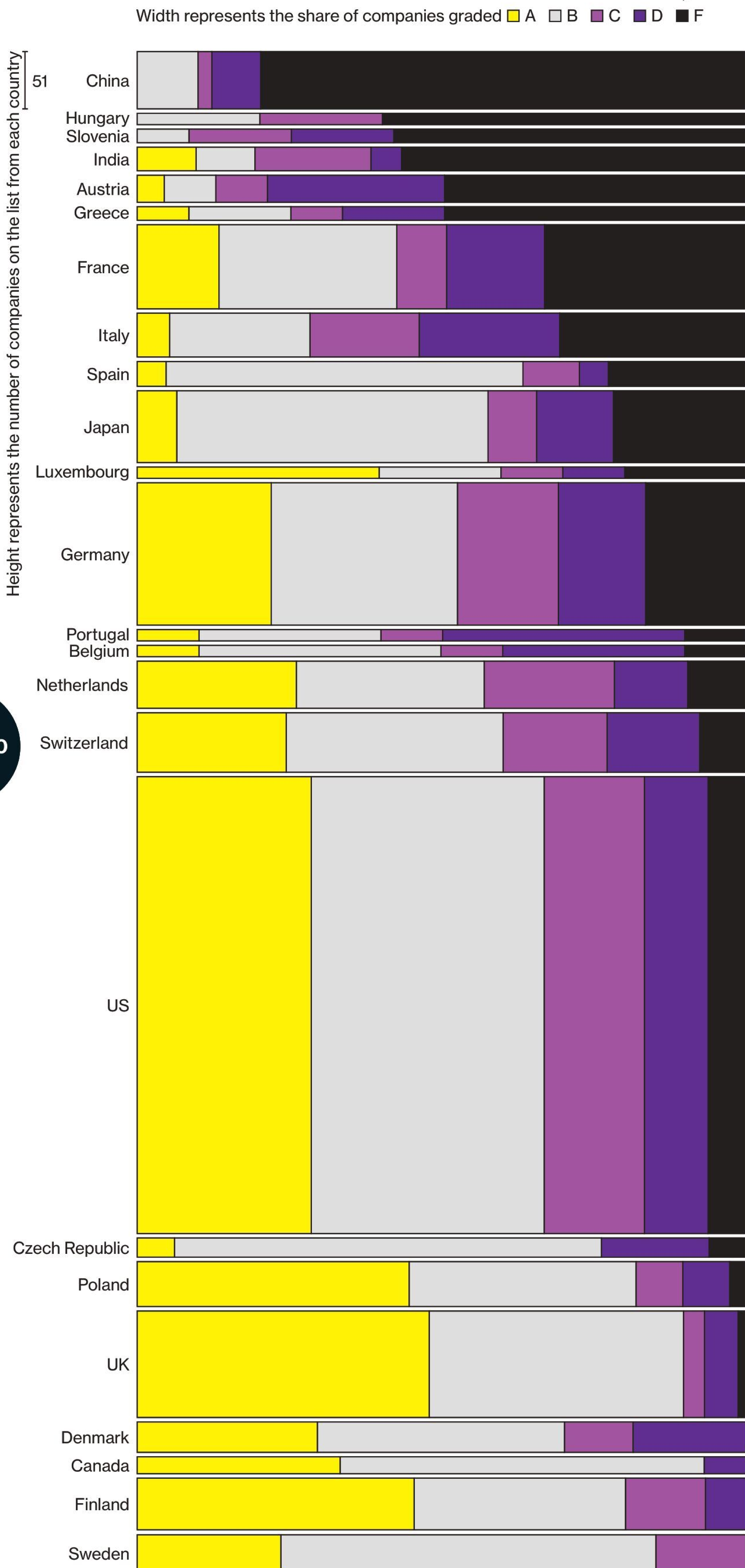
In 45 years of investigating corporate management, Sonnenfeld has gone from observer to intermediary, bringing leaders from business, politics and other arenas together at his Chief Executive Leadership Institute and his frequent conferences. He convenes annual meetings for mayors and university presidents. He's advised thousands of C-suiters over the decades across the spectrum of management challenges, yet he's built his brand on social responsibility. After the Chinese government imprisoned journalist Rui Chenggang in 2014, Sonnenfeld pressed the dissident's case with Chinese executives and leaders of the World Economic Forum.

"I did not know when I was in solitary confinement, or in the gulag," says Rui, who served six-and-a-half years in prison. "But after I got back to Beijing, I learned that Jeff had the courage and integrity to demand answers on numerous occasions."

Sonnenfeld played a pivotal role in organizing corporate CEOs to oppose Donald Trump's attempt to claim victory in the 2020 presidential election. "I had maybe 30 CEOs trying to reach me at the same time," he says. "Each one of them would think, 'Well, you know, I am the CEO of the world's second-biggest media company, I think you'll take my call'—except I had the No. 1 media company and the No. 3 already on the phone. I tried to merge them in, and I hit the limits."

But in the days after Russia's invasion of Ukraine, it was Sonnenfeld who reached out. He watched as US businesses started withdrawing from Russia and noticed an unconventional pattern. The first movers weren't consumer brands sensitive to public sentiment but businesses with good reasons to stay—oil giants with complex local ties and huge sunk costs, ▶

### Who's Still Trading With Russia—and Who's Backing Away




COUNTRIES WITH 10 OR MORE COMPANIES ON THE LIST. DATA: YALE SCHOOL OF MANAGEMENT, AS OF NOV. 28

**A** Companies totally halting Russian engagements or completely exiting Russia

**B** Companies temporarily curtailing most operations while keeping return options open

**C** Companies scaling back some significant business operations but continuing others

**D** Companies postponing some future planned investment

**F** Companies continuing business as usual

◀ tech companies wary of the political complications and professional firms that hate to offend their clients. "I just wanted to understand why they were doing it and what was likely to happen next," he says.

After talking to a dozen CEOs, Sonnenfeld learned that professional and tech companies responded to employee pressure to take a stand out of concerns about social responsibility. And oil company leaders could see starkly how their business would directly fund Putin's war. The execs fumed that the media hadn't sufficiently acknowledged the difference between what they'd done and the companies that merely sent their thoughts and prayers to the Ukrainian people while clinging to the Russian market. "It's demoralizing to the people who really put something at risk. Like, why bother?" says Sonnenfeld. "So we wanted to separate out the fraudsters."

Sonnenfeld and the institute's research director, a recent Yale grad named Steven Tian, immediately began sorting through the 500 largest US companies and checking for statements of intentions from those with Russian investments. "If companies said they were leaving, that was the next best thing to actually leaving," Sonnenfeld says. "What was very damaging to Putin is the statement of disdain of companies saying, 'We're pulling out because of this war.'" It helped that besides his expansive Rolodex, Sonnenfeld has a photographic memory and a talent for multitasking. "Even as he was teaching," says Tian, "he literally kept on sending me emails like, 'Do you think this company should be exiting Russia or not exiting Russia?'"

Around the beginning of March, just days after Russian troops poured across the border and Russian missiles assailed Ukrainian cities, Sonnenfeld posted online the first version of his list, naming a few dozen companies that had pulled out. By Sunday, March 6, the list had grown to 200 departing companies, and 30 that had chosen to remain in Russia.

On March 7, Sonnenfeld published a commentary on *Fortune.com* that called out McDonald's Corp. and several other prominent companies staying put—then singled out the fast-food giant again later that day in a two-minute riff on CNBC. The following day,

McDonald's announced it would temporarily close its 847 Russian locations and "pause" all operations in the country. In mid-May it pledged to withdraw from Russia entirely, writing off about $1.3 billion in assets there.

On March 9 alone, almost 300,000 people discovered Sonnenfeld's list. Dozens of volunteers were lining up to help him uncover foreign companies' Russian connections: current students, graduates who'd burrowed into highly specialized sectors of finance, people he'd never met from Eastern Europe and Russia. Company insiders leaked information. The American property insurer FM Global, for one, found itself on the wrong side of the list, partly because an employee sent Sonnenfeld the names of 192 of its Russian reinsurance clients.

Over the next two months, Sonnenfeld's tally of companies went global, ballooning to more than a thousand. It also became more nuanced, as Sonnenfeld realized that there were degrees to withdrawing—as well as ways to pretend to withdraw. Lawyer friends suggested that he add a "Buying Time" category for companies pledging little more than forgoing often-vague future investments in Russia, as FM Global eventually did when it announced it would no longer write or renew contracts for Russian insurers. (The insurer declined to comment.) In late March, when Sonnenfeld assigned the letter grades to each category, "Buying Time" became a D.

To date, the list has drawn almost 3 million unique page views—including some from C-suites. CEOs, says Sonnenfeld, like to know what other CEOs are doing; the list allows them to benchmark their actions in Russia against their peers'. Robert Zoellick, the veteran Republican economic hand and former World Bank president, says he admires Sonnenfeld's work. "I tell business executives that they should pay attention to it—customers and employees do," says Zoellick, now a senior counselor at global affairs consulting firm Brunswick Group. "I don't know of anyone who has been critical."

Journalists have mined the list to call attention to local companies that were persisting in Russia. Activists sympathetic to Ukraine have used the list to pressure executives at those companies.

A handful of companies have publicly challenged their place on the list. Early in April, for instance, newly anointed Hertz Global Holdings Inc. CEO Stephen Scherr appeared on CNBC, where host Andrew Ross Sorkin asked him about Hertz's F grade for operating at several Russian airports. Scherr disputed Sorkin's characterization. "We have withdrawn," he told the host, "and have not been taking reservations in Russia."

Sonnenfeld promptly pulled Hertz from the "Digging In" category and moved it, Tian says, to Withdrawal, the A grade. That summer, Sonnenfeld quietly arranged a meeting with Scherr. He and his collaborators shared instances of Hertz's former agent in Russia still using the company's signature black-on-yellow logo and Hertz advertising on Russian websites uncovered by NewsGuard, the online misinformation tracker founded by Steven Brill and Gordon Crovitz.

Hertz spokeswoman Lauren Luster says the company had a very small presence in Russia, through a local rental car agency, before the invasion and stopped advertising and taking reservations there on March 2. 'We welcomed Mr. Sonnenfeld's input," she says, which "helped prevent the further, unauthorized use of the Hertz brand in Russia."

Says Sonnenfeld: "The reason we keep turning the stone over, it has got to be right." He claims that since the list was created, lawyers for 22 companies have sent threatening letters, but all backed down in the face of the evidence his team mustered.

In May, anticipating a different line of attack, this time from right-wing pundits who might accuse withdrawing CEOs of being "woke" at shareholders' expense, the team began crunching numbers. They found that the markets quickly rewarded businesses announcing a Russia exit. Public companies tended to see their stock prices rise; their private counterparts paid less interest on new debt. "We had such a large database of 1,300 companies," says Sonnenfeld, "we could show [it] without a lot of complicated statistical gymnastics. These companies made an announcement, and then right away something happened to their stock price."

The researchers then examined the toll the business withdrawals and sanctions have taken on the Russian economy. They say Russia's commodity exports and imports of finished goods and components have all plummeted, devastating domestic production and consumption. Russia's monthly motor vehicle production in May was down by three-quarters from May 2021. By June, Russian gas deliveries to Europe dropped by more than 60% from the previous year. Only a heavy-handed, and ultimately unsustainable, government intervention in the economy, they argue, has staved off complete collapse.

Today, Sonnenfeld has become a sort of unofficial ambassador for the sanctions regime. The analysis his team published in late July has been downloaded almost 100,000 times, making it the ninth most popular ever posted to SSRN, the giant academic research paper data bank, in its 28 years. Every week, Sonnenfeld accepts several invitations to speak to academic and elite economic and political organizations around the world, including the US Congress and State and Treasury departments. In October, he hosted Volodymyr Zelenskiy at a videoconference at Yale. (This was the Ukrainian president's second video appearance with Sonnenfeld; Zelenskiy accepted a "Legend in Leadership" award from his institute in June.)

Sonnenfeld has set his sights on other targets. After Saudi Arabia pushed OPEC to cut oil production in October—a move that he, like many other observers, believes is meant to prop up inefficient Russian production and prices—he began investigating US arms transfers to the kingdom. Two days after the decision, on a Friday night, Sonnenfeld persuaded Senator Richard Blumenthal of Connecticut and Representative Ro Khanna of California to jointly sponsor a bill to block those transfers for a year. Although both are Democrats, the men "never had one word in common with each other," says Sonnenfeld. "I just said, 'Look, I think you're both interested in the same topic here.'" So he merged the two of them into a conference call.

The following Tuesday, Blumenthal introduced the legislation in the Senate. B

# Bad Business Has a Price

A list of the largest US corporate settlements reads like an atlas of boardroom disasters. After the financial crisis, Bank of America Corp. set a record with a mortgage-related settlement of more than $16 billion, and following the Deepwater Horizon oil rig explosion, BP Plc faced thousands of claims from people affected by the spill. In California, utility PG&E Corp. was penalized after its equipment ignited wildfires. And in New York, JPMorgan Chase & Co. settled claims that it failed to stop Bernie Madoff's Ponzi scheme. Good Jobs First, the Washington nonprofit that compiled the data, notes that in most cases, even if they pay large settlements, companies don't admit wrongdoing. But the litany of multibillion-dollar payments is a reminder that good business is cheaper than the alternative.

## Corporate payouts by type of allegation

Settlements and penalties of more than $1 billion since 2008

Financial services ■ Pharmaceutical ■ Auto ■ Oil and gas ■ Other

Financial services companies faced steep penalties for their role in the 2008 market crash.

**Securities violations**

S&P GLOBAL
CITIGROUP
WELLS FARGO
BARCLAYS
CREDIT SUISSE
GE
GOLDMAN SACHS
JPMORGAN CHASE
NATWEST
BANK OF AMERICA
MORGAN STANLEY
DEUTSCHE BANK

**Insider trading charges**

SAC CAPITAL

**Fraud**

WELLS FARGO
WELLS FARGO
PERFECTUS ALUMINUM
BOEING
PURDUE PHARMA

The US opioid crisis triggered thousands of lawsuits against pharmaceutical manufacturers and distributors.

**Improper medical product promotion and distribution**

JOHNSON & JOHNSON
MCKESSON
RECKITT BENCKISER
TEVA PHARMACEUTICAL
PFIZER
CARDINAL HEALTH
WALMART
GLAXOSMITHKLINE
ABBOTT LABORATORIES
AMERISOURCEBERGEN
JOHNSON & JOHNSON
ABBVIE
ELI LILLY
MALLINCKRODT

**Energy market manipulation**

GLENCORE

**Consumer protection lapses**

CORINTHIAN COLLEGES
NAVIENT

**Safety violations**

CHEMCHINA
STRYKER
PG&E
BAYER
HYUNDAI
TOYOTA
JOHNSON & JOHNSON
TAKEDA

**Mortgage violations**

OCWEN
JPMORGAN CHASE
WELLS FARGO
BANK OF AMERICA
CITIGROUP

**Anticompetitive practices**

MASTERCARD AND VISA
BLUE CROSS BLUE SHIELD ASSOCIATION
TEVA PHARMACEUTICAL

**Investor protection lapses**

MF GLOBAL
BANK OF AMERICA
UBS
WELLS FARGO
JPMORGAN CHASE AND MORGAN STANLEY
MERRILL LYNCH, GOLDMAN SACHS AND DEUTSCHE BANK
CITIGROUP
ALLIANZ

**Money laundering**

JPMORGAN CHASE

**Tax violations**

CREDIT SUISSE

**Environmental**

HALLIBURTON
BP
MERCEDES-BENZ
VOLKSWAGEN
ALLIANT ENERGY
ANADARKO PETROLEUM

**Privacy violations**

META

**Foreign-corrupt practices or sanctions**

BNP PARIBAS
ZTE
HSBC
GOLDMAN SACHS

Volkswagen and Mercedes-Benz were embroiled in an emissions cheating scandal.

Millions of gallons of oil spilled after the Deepwater Horizon explosion.

DATA: GOOD JOBS FIRST VIOLATION TRACKER. THE LIST DOES NOT INCLUDE SHAREHOLDER LAWSUITS OR SETTLEMENTS BETWEEN COMPANIES AND THEIR INSURANCE CARRIERS



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## ONLY HUMAN

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