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STOXX 600 514.26 ▼ 0.3%

10-YR.TREASURY ▼ 21/32, yield 3.727%

OIL \$71.92 **\(\)** \$3.27

EURO \$1.1165

YEN 143.92

What's News

Business & Finance

- ◆ Chip-making giants TSMC and Samsung Electronics have discussed building factory complexes in the U.A.E. that could transform the industry in the coming years and become a cornerstone for artificial-intelligence investments in the Middle East. A1
- ◆ The Fed is finally cutting interest rates, but one key gauge of borrowing costs, yields on longer-term U.S. Treasury, has been going up anyway, a reminder that the central bank doesn't have complete control over the costs of borrowing. B1
- **◆ Trial proceedings** in the U.S. government's antitrust case against Google's advertising business have provided a rare window into internal company anxieties about the Alphabet unit's role in buying and selling ad space online. B1
- ◆ Johnson & Johnson filed an unprecedented third chapter 11 case seeking to end the mass lawsuits linking its cosmetic talc products to cancer. B2
- ◆ The maker of Cards Against Humanity has filed a \$15 million lawsuit against SpaceX, alleging the Musk company trespassed on land the games company owns in Texas. B4 ♦ Brazil's Supreme Court said Musk's platform, X, must provide more documents to prove it is complying with a requirement for operating in the country. B4
- **♦** A federal appeals court blocked Boston Generating's creditors from recovering over \$700 million transferred to its shareholders before its bankruptcy. B8

World-Wide

- ◆ Israel and Hezbollah accelerated their cross-border attacks with their leaders exchanging saber-rattling threats in a rapidly deteriorating situation that has the adversaries closer to full-out war. A1
- ◆ The Israeli military raided Al Jazeera's office in the occupied West Bank, the news outlet said, and ordered it shut for at least 45 days. A7
- **Congressional leaders** backed a spending deal that would avoid a government shutdown before the election and give the Secret Service extra funding to help protect presidential candidates. A4
- **♦ The number** of homeless people in the U.S. continues to grow and is on pace to hit vet
- another record high this year. A3 ◆ Four people were killed and

at least 17 others injured in a

shooting in Birmingham, Ala. A3

- ◆ The chairman of drugmaker Roche denounced the boom in industrial subsidies by the U.S. and EU governments to boost against competition from China and other nations as a "waste of money." **A18**
- **◆ The Social Democrats** of German Chancellor Olaf Scholz won a narrow victory over a growing far-right party in Brandenburg. A18
- **♦** France's new conservative Prime Minister Michel Barnier has formed his cabinet, drawing ministers primarily from the centrist ranks of President Macron. A18
- ◆ Marxist lawmaker Anura Kumara Dissanayake won the Sri Lanka presidential race. A18

JOURNAL REPORT

Artificial Intelligence: What will Al look like in 2030? **R1-12**

CONTENTS Arts in Review.....A13 Business & FinanceB2,8,9 Business News...... B3 Closed-End Funds.....B7 Heard on Street......B9

Markets Digest.....B6 Sports. Technology.....





A reported Hezbollah strike on Sunday caused damage around Haifa, northern Israel, while Israel struck targets in Lebanon.

Israel and Hezbollah Approach Full-Scale Warfare

Militants target Iron Dome developer, air base, as Israeli jets hit southern Lebanon

By Carrie Keller-Lynn AND STEPHEN KALIN

Israel and Hezbollah accelerated their cross-border attacks over the weekend, with their leaders exchanging saber-rattling threats in a rapidly deteriorating situation that has the adversaries as close to full-out war as they have been in their nearly yearlong conflict.

Dozens of warplanes struck southern Lebanon on Saturday night and into Sunday morning, Israel's military said, in what it called a pre-emptive attack against rocket-launching positions earmarked for a broader attack on Sunday morning. Residents in the area said it was one of the heaviest bombardments of southern Lebanon that they could recall since the conflict began.

Please turn to page A7

◆ Israel shuts Al Jazeera's West Bank bureau...... A7

Cargo Ship Industry **Beset With** Sex-Assault Allegations

By Costas Paris AND JOE WALLACE

Hope Hicks was a 19-yearold cadet aboard a U.S.flagged car carrier vessel in the Red Sea when she said a group of senior officers pressured her to take repeated shots of liquor and one of them followed her back to her cabin and raped her.

Hicks, who was training to be an engineer at the time of the 2019 incident, said she woke up to find blood on her sheets and bruises on her body.

The Coast Guard later charged a senior engineer with sexual assault. But all charges against him were dropped after he voluntarily surrendered his merchant mariner license last year.

Allegations of sexual assault on ships that ferry goods around the world have put the ocean shipping industry under a harsher spotlight.

The profession is overwhelmingly male and has been slow to make the kind of changes that other industries adopted in the #MeToo era. Hicks's case helped spark a reassessment of the workplace culture and changes to policies and laws that govern it, yet many cases still fall into a prosecutorial void.

Congress passed a law in 2022 to strengthen oversight and investigations of alleged sexual assault and harassment in ocean shipping. The industry's main regulator mandated new training programs for seafarers. Shipowners have made it easier to report allegations and tried to boost the share of female workers.

Despite the changes, prosecution is rare.

The 2022 law expanded the Coast Guard's powers in dealing with sexual harassment and abuse on ships flying the U.S. flag, regardless of where they are traveling. But the vast majority of cargo ships fly flags of countries outside of the U.S., so what happens on those vessels is the responsibility of countries that

tend to have weaker laws. For cases involving U.S. Please turn to page A2

|Chip Giants Discuss Big Mideast Bet

Two chip-making giants have discussed building huge factory complexes in the United Arab Emirates that could transform the industry in the coming years and be-

By Asa Fitch, Alexander Ward and Jiyoung Sohn

come a cornerstone for artificial-intelligence investments in the Middle East.

Top executives at Taiwan Semiconductor Manufacturing Co., the world's largest chip

maker, have visited the U.A.E. recently and talked about a plant complex on par with some of the company's largest and most advanced facilities in Taiwan, according to people familiar with the interactions.

Samsung Electronics also is considering major new chipmaking operations in the country in the years ahead, according to other people with knowledge of its strategy. Senior leaders of the South Korean company have visited the U.A.E. recently and discussed the possibility, they said.

Discussions are still in the early phases and face technical and other hurdles that mean they might not pan out. Under initial terms being discussed, the projects would be funded by the U.A.E., with a central role for Abu Dhabibased sovereign development vehicle Mubadala, which is eager to develop a domestic tech industry.

The broader goal would be to increase global chip production and help bring chip prices down without hurting chip-makers' profitability,

some of the people said. A Mubadala spokesman

said MGX, a state-backed company that is spearheading some of Abu Dhabi's most prominent AI investments, had made semiconductor manufacturing a pillar of its strategy and was "in regular dialogue with partners around the world," although there are Please turn to page A6

◆ Intel's fall from chip giant to buyout target.....

♦ As AI matures, chips will get customized...... B3

10-year U.S. Treasury yield



Key Rate Up After Fed Cut

Rising 10-year Treasury yields are a reminder that an interest-rate cuteven a large one like the central bank did last week -can do only so much to lower overall U.S. interest rates. The yield on the benchmark 10vear Treasury note helps set interest rates on everything from mortgages to corporate bonds. B1

Civil War Legacy Still Splits South

Neighbors in small towns clash over Confederate monuments on public land

By Scott Calvert AND CAMERON McWHIRTER

EDENTON, N.C.—Rod Phillips and Michael Dean, a pair of white 70-something retirees, take opposing sides in the Civil War, usually between 11 a.m. and 1 p.m. on Saturdays.

They are separated by a bronze 7-foot Confederate soldier, in an unvielding though peaceful standoff going on almost as long as the war that divided the nation.

"It's racist," said Phillips, who wants the statue removed from public property. On Saturdays, he leads a

small band of regulars to protest the monument's looming presence over the town that Forbes magazine once called one of the prettiest in America.

"When it was put up, it was an expression of white supremacy," Phillips said. He owned a sign-making business in Raleigh, N.C., before moving to Edenton in 2018. He picked the town, population 4,500, because it is halfway between his family in Johnston County, N.C., and his wife's family in Virginia Beach, Va.

> Dean, who sometimes Please turn to page A8

In Brazil—Cheers, Confusion Ensue Fans merrily curse refs in Portuguese, ask

why 'there are so many damn players'

NFL Makes Historic Debut

By Samantha Pearson

SÃO PAULO—It might be the boldest move yet by the National Football League: bringing football to the land of futebol.

After playing its first regular-season game in Brazil this month in São Paulo, the NFL has hinted the soccer-mad country could become a per-Not that futebol manent venue for the

league as early as next year. Latin America's biggest country had never hosted so much as an exhibition game before the Philadelphia Eagles took on the Green Bay Packers

on Sept. 6 in the suburbs of

São Paulo.

Novice fans have described the game as a confusing and slow-moving match by men dressed as astronauts. Some

struggled to follow the ball. Others wondered why the game lasted so long.

"It's hard to see the ball when there are so many damn players," said João Oliveira, a soccer fan who came with some work

friends for the experience. Even his friends, self-described NFL obsessives who got hooked on the game when that it's imprecise and vacationing in the U.S., said can be misleading. A11 they understood maybe 70% of Please turn to page A8

INSIDE



PERSONAL JOURNAL Doctors are rethinking how to use BMI, noting

BUSINESS & FINANCE Elliott Hill loved Nike, but left in 2020; now he is back as the boss. B1

U.S. NEWS

Submersible's Operator Ignored Warnings

voyages cut corners before implosion, ex-employees say

By Joseph De Avila

Stockton Rush, the CEO of underwater-exploration com-OceanGate, needed someone to pilot his experimental submersible to give tours of the Titanic wreckage to wealthy clients.

Rush turned to Tony Nissen, OceanGate's engineering director. "I told him, 'I'm not getting in it,' " Nissen said.

Nissen thought Rush hadn't been truthful with him about the company's operations since he was hired in 2016, he said. The two argued about whether the company's submersible was safe. He was fired in 2019.

Nissen recounted his experiences with Rush during testimony at a U.S. Coast Guard hearing investigating last year's catastrophic implosion of OceanGate's Titan submersible. He and other former staffers said the company cut corners and didn't prioritize safety when building a vessel to ferry wealthy clients to the wreckage of the Titanic.

The two-week hearing continues Monday and is expected to conclude Friday. The investigation is ongoing.

Equipment issues

The Coast Guard, which has been investigating what went wrong with the submersible. detailed a litany of problems the company faced before the doomed voyage. During the 10 dives to the Titanic the company attempted in 2021, the Titan developed 70 equipment issues, the Coast Guard said. In 2022, the submersible saw

Firm that ran Titanic 48 more equipment problems over 13 more dive attempts.

A few weeks before the disastrous June 2023 dive, the submersible and its platform were found "partially sunk" after a night of high seas and fog, the Coast Guard said.

The ex-employees said Rush was known to lose his temper and didn't like to be pushed on safety concerns. Nissen said Rush made most of the major engineering decisions for the company.

Rush, who founded Everett. Wash.-based OceanGate in 2009, was among the five people who died aboard the Titan in the implosion.

Shahzada and Suleman Dawood, members of one of Pakistan's richest families; Hamish Harding, a British aviator and explorer: and Paul-Henri Nargeolet, a leading expert on the Titanic, were also killed.

Nargeolet's family filed a wrongful-death lawsuit last month, seeking \$50 million for what they called "persistent carelessness, recklessness and

OceanGate, which has shut down operations, has been cooperating with the Coast Guard investigation since it began, including at the continuing public hearing, said Jane Shvets of Debevoise & Plimpton, a lawyer for OceanGate.

There are no words to ease the loss endured by the families impacted by this devastating incident, but we hope that this hearing will help shed light on the cause of the tragedy," Shvets said.

Before he died, Rush said in public remarks the company was committed to safety.

Nissen said Rush wanted to keep Titan's expenses low. Rush complained about having Titan be certified by an authority that maintains technical standards for ships, because it would take too long and be too



Above, the Titan submersible at the bottom of the ocean in June 2023. Below, Stockton Rush.

expensive, Nissen said.

"In his words, 'It stifles innovation,' " Nissen said.

Earlier version

Nissen worked on an earlier version of the Titan, before the company started building a new Titan submersible in 2020. In other parts of his testimony, he said OceanGate did attempt to get that version of Titan approved by classifying authorities. But in the end, it didn't happen.

The company faced criticism from some in the industry when it didn't get an independent safety verification for Titan. The Marine Technology Society's committee manned underwater vehicles said in 2018 that the decision risked a potentially disastrous failure. A spokesperson for OceanGate previously declined to comment on the letter.

Nissen said he was fired in 2019 after he refused to approve a dive after a crack was discovered in Titan's hull. The hull wasn't salvageable, Nissen said. The dive was scrapped, but OceanGate blamed it on problems with a support ship, which wasn't true, Nissen said.

Renata Rojas, an OceanGate



customer and volunteer who testified later in the week, disputed that claim, saving Rush told her the dive was canceled because the hull needed repairs and because the support ship necessary for the dive wasn't available.

Bonnie Carl, OceanGate's former director of human resources and finances, left the company in 2018 because of safety concerns, she told Coast Guard investigators. She said some technical papers about the Titan were kept hidden from her, raising her suspicions about the safety of the submersible.

"It became abundantly clear to me OceanGate was not a place I wanted to work if that was their attitude to safety," she said. "I didn't want to work for that company."

Tym Catterson, a former contractor for OceanGate, said he repeatedly raised concerns about Titan's carbon-fiber hull with Rush and other employees. Materials-science experts have said carbon fiber can fatigue after several trips and is susceptible to small cracks or chips under pressure. Submersibles are typically built with titanium.

Catterson told investigators he had never been on a dive on Titan and wouldn't feel comfortable going on an expedition in the submersible.

"I had my doubts" about the design, Catterson said.

A disputed dive

David Lochridge, former operations director for Ocean-Gate, said Rush crashed a submersible into the wreckage of a ship during an expedition with paying customers in 2016 off the coast of Nantucket, Mass. Rush got the ship stuck and panicked, Lochridge told the Coast Guard.

Lochridge said he pleaded with Rush to hand over the Titan's controller, which was a videogame controller, so that Lochridge could try to take the

submersible to the surface. Rush refused until one of the passengers shouted at him, with tears in her eyes, to give up the controller, Lochridge said.

Rush hurled the controller at Lochridge's head, Lochridge said. He brought the submers-

ible safely to the surface. Lochridge, who said he repeatedly raised concerns about OceanGate's safety operations, was fired in 2018. He said the incident with the controller was one of the main reasons he was terminated.

Lochridge worked on the earlier version of the Titan, not on the vessel that imploded. Rojas, the OceanGate cus-

tomer, was aboard the submersible on that trip. She disputed Lochridge's version of events at the hearing, describing her trip as a great dive. She paid \$20,000 for the expedition, she said. "He must have gone on a different dive," Rojas said. "Nobody was panicking. Nobody was crying. And there was definitely no swearing and yelling.

Rojas told investigators that she and other OceanGate customers were aware of the Titan's experimental nature and that every dive carried risks.

Rojas, who was volunteering with OceanGate as an assistant on the launch platform on the day of the deadly implosion, became emotional when she discussed the incident. She said all five of the passengers were excited for their voyage to the Titanic.

"What we have all gone through is still raw," Rojas said. "Nothing is going to bring our friends back."

Watch a Video



Scan here for a video showing wreckage of the Titan submersible.

Sex Assault Cases Beset Cargo Ships

Continued from Page One ships, only the Justice Department can prosecute, which it rarely does. That means most of those cases are sent back to the Coast Guard, which typically offers to drop charges in exchange for revoking the alleged perpetrators' licenses.

The Justice Department declined to comment on specific investigations. Officials there said the department prefers to have the Coast Guard handle investigations into sexual harassment or abuse off shore because the cases are complicated and difficult to prosecute.

Cargo ships are already among the world's most inhospitable workplaces, particularly for women. Around 95% of ship officers are male. and hierarchy is strictly enforced, which lawyers and accusers said makes it even more difficult for a crew member to go public with accusations against a superior. The industry has had a difficult time accommodating more diversity, according to industry executives.

Another obstacle is that many sailors work on temporary contracts, a status that can make them warv of reporting cases of harassment for fear of earning a reputation for being "difficult to work with," said Lena Dyring, director of cruise and international ferry operations for the Norwegian Seafarers' Union. Sailors also are at sea for months, keeping alleged abusers and victims in proximity.

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Hope Hicks outside the U.S. Merchant Marine Academy in 2022. Her case led Congress to pass the Safer Seas Act.

MERCHANT MARIN

Hicks wrote about her experience aboard the Alliance Fairfax in a blog post in September 2021, in which she identified herself as "Midshipman-X." She reported the incident to the Coast Guard the following month, during her senior year at the U.S. Merchant Marine Academy in Kings Point, N.Y.

In June 2022, Hicks filed a lawsuit against the ship's operator, Denmark's A.P. Moller Maersk. The case was settled five months later.

Maersk at the time called the alleged conduct involving Hicks unacceptable, and said that the company was working with the Coast Guard, maritime academies, labor unions and others to address problems.

Maersk set up a hotline for complaints and is training its entire crew of 12,500 mariners on how to deal with and

report abuse at sea. It also has introduced a policy to have at least two female crew members on its ships.

"We want a work environment where no seafarer must turn to anony-

mous blog posts to tell their story," Nynne Norman Scheuer, the company's head of marine human resources, said

Hicks, who grew up in Marietta, Ga., said she had always wanted to become a mariner, but the incident changed her plans to pursue

a career on commercial vessels. She is now an officer in the U.S. which Navy, she said is a safer work environment.

"It was absolutely worth coming

scary and difficult," Hicks told The Wall Street Journal in an interview. "While significant progress has been made, there's still years of work needed to ensure a just and safe maritime industry."

months investigating Hicks's allegations against the senior engineer, Edgar Sison, before it charged him with criminal assault and sent the case to the Justice Department.

probe that lasted about a year, the agency declined to prosecute. Sison gave up his license in 2023.

Sison previously has denied Hicks's allegations.

Hicks's case led Congress to pass the Safer Seas Act, which obligated U.S. shipping companies to report harassment cases to the Coast Guard. The law also required operators to install security cameras outside crew cabins.

A Coast Guard official declined to say how many complaints it has received before or since the Safer Seas Act was enacted in 2023, saying only that its lawyers were reviewing a number of cases.

"They are being flooded with reports," said Ryan Melogy, a maritime lawyer who has represented harassment victims including Hicks. Melogy said he has handled eight cases over the past three years, with four alleged perpetrators surrendering their licenses, three suspended for up to 15 months and one pending. A mariner license, obtained from the Coast Guard, allows maritime academy graduates to work on merchant ships.

Of the 1.9 million merchant seafarers operating about 74,000 vessels, 1.3% are women, according to a 2021 report by BIMCO, an association of shipping companies, and the International Chamber of Shipping.

Shipping companies have business reasons to encourage more women in the workforce. The BIMCO report said the industry needed to boost recruitment and training to avoid a shortage of officers

The International Maritime Organization, the United Nations body that regulates global shipping, said the issue is serious and there is no easy way to address it.

"There has been an increasing awareness of violence and harassment occurring on ships, including sexual harassment, which compound the already challenging working conditions," an IMO spokeswoman said.

She said the IMO has mandated new minimum requirements for basic training for seafarers, including how to prevent and respond to incidents of violence, bullying, harassment and sexual assault.

Ship executives and lawyers said the gender disparity starts at maritime academies.

"You have 20 male students training to run a ship and there is a single female," said Takis Stratos, a veteran captain of cruise and cargo ships. "Like on a ship, marine academies are a tough place to be a woman.

One case that has been prosecuted so far in the U.S. involved Francis Crowlev, a former engineering student at the Merchant Marine Academy in New York. Crowley was sentenced to nine years in prison for sexually assaulting then 19-year-old Stephanie Sheldon in her room on campus in 1997. He served 71/2 years of his sentence before being released.

Crowley was arrested and kicked out of the academy in early 1998. At the time he was a junior and Sheldon a sophomore. She went on to graduate with an engineering degree, then decided to become a doctor.

Crowley couldn't be for reached comment. Thomas Rossi, his lawyer, declined to comment. "I was ostracized on cam-

pus because many thought I was alleging something that never happened," said Sheldon, now a medical doctor in Wisconsin and a mother of daughters. wanted me to quit, but I said I won't back out."

The Merchant Marine Academy didn't respond to calls for comment.

CORRECTIONS ど AMPLIFICATIONS

Scale AI's code name for Google is Bulba, a Pokémon reference. An Exchange article on Saturday about Scale AI and its founder Alexandr Wang incorrectly said that the code name was boba, after the Asian bubble tea drink.

Readers can alert The Wall Street Journal to any errors in news articles by emailing wsjcontact@wsj.com or by calling 888-410-2667.

Around 95% of

in an interview.

ship officers are male, and hierarchy is strict.

ward, even though it was

The Coast Guard spent six

After conducting its own

Sison couldn't be reached. His lawyer didn't respond to emails and calls for comment.

Why Anti-Wind **Activists Love** Right Whales

By Shane Shifflett

Michael Shellenberger has spent years railing against renewable energy.

A nearly extinct whale helped him build a coalition that has played a part in slowing the rollout of wind turbines up and down the East Coast.

Shellenberger, a self-described environmentalist who turned against renewable energy in favor of nuclear power, claims offshore wind farms will decimate the 360 right whales that remain in the North Atlantic.

Some of the activist groups in his coalition are backed by conservative and libertarian think tanks with close ties to the fossil-fuel industry. Shellenberger argues the whales are killed by the construction of the giant turbines and the noise they generate during installation.

Many scientists don't buy Shellenberger's claims. Most right whale deaths are caused by collisions with boats, including those heading to the region's increasingly busy ports, or when whales become entangled in lines from commercial fishing fleets, according to the National Oceanic and Atmospheric Administration. Most right whale injuries are caused by fishing lines, NOAA says.

Wind companies say they are aware of the risk to marine life. They don't operate when whales are nearby or passing through the area on their 1,000-mile migration from off the coast of New England to the southeastern U.S. every winter.

Offshore wind turbines are seen as crucial for the energy transition. Turbines can rise nearly 900 feet above the sea with blades around 350 feet that generate vast amounts of power.

Projects planned in the U.S. would power four million homes. Booming wind power in Europe has helped offset the reduction in natural gas coming from Russia.

Shellenberger has used the whales to get backing from local politicians, oceanfront homeowners and commercial fishermen. Members of his coalition have used their cash to sue wind companies, delaying the projects and adding to their costs.

Shellenberger, a former public-relations executive, has his roots in the environmental and human-rights movements. In the mid-1990s, he joined a grassroots campaign to save California's last unprotected old-growth redwood forest from commercial logging. He has never stopped touting his credentials as an environmentalist. But he has become a big backer of nuclear power and has embraced increasingly extreme political positions.

Shellenberger's recently established Substack newsletter has become the most popular on the platform. One recent post was titled "The Censorship Industrial Complex," on a phenomenon that he said is driving a global transition to totalitarianism.

Some of Shellenberger's collaborators disavowed him after he began playing down the impact of climate change. 'He and I parted ways because I thought a lot of what he was saying wasn't true," said Kerry Emanuel, a Massachusetts Institute of Technology professor emeritus of atmospheric science, who was briefly on the board of Shellenberger's pronuclear nonprofit, Environmental Progress, now known as Civilization Works.

Shellenberger declined to comment.

Before Shellenberger and the right whale showed up, opponents of wind projects were typically beachfront homeowners and businesses. They were worried that the towers would spoil their views and keep tourists away.



A North Atlantic right whale breaches in waters off Provincetown/Truro in Cape Cod., Mass. The species is nearly extinct.

North Atlantic right whale injuries North Atlantic right whale deaths' 20 injuries 20 deaths Vessel strike Unidentified causes Entanglement Entanglement Dependent calf or Dependent calf 15 unidentified injuries Vessel strike '18 19 2017 '18 '20 '21 '22 '23 ′19 '20 '21 '22 '23

*Unidentified deaths includes unexamined carcasses and pending determinations

Source: National Oceanic and Atmospheric Administration

Noise Theory Is Disputed

A documentary produced last year by Michael Shellenberger showed a colleague cringing in pain while she listened to the sounds of wind-turbine construction on headphones.

"What caused these whales to hit the ships? They become deaf or panic when they hear this noise," said Apostolos Gerasoulis, a onetime member of Save

Local groups recruited Shel-

lenberger to organize the fight

against a New Jersey wind

project, according to event list-

ings and former group mem-

bers. "The anti-wind commu-

nity here, it's got to be a

single, united front against this

Right Whales and a Rutgers University computer science professor emeritus. He has overlaid the locations of whale deaths on maps of shipping traffic, which he said proves they were caused by wind activity. He focused on the deaths of humpback whales.

Those findings don't show cause and effect, said

monstrosity they want to build

up and down the Atlantic

coast," Shellenberger said at a

projects to environmental de-

struction and played down the

risk of global warming. Then

He tied renewable-energy

2021 rally in Ocean City, N.J.

David Wiley, a National Oceanic and Atmospheric Administration marine ecologist. He is an author of a May 2024 paper published in the journal Conservation Biology that found no link between humpback whale deaths and wind projects.

"I could correlate Nvidia stock with whale deaths, but no one thinks Nvidia is killing whales," Wiley said.

he invoked the right whale.

"The one whale species-the

North Atlantic right whale

species—that's really the most

threatened species in the

world is the one that's most

threatened by this wind proj-

ect," he said.

Fossil-fuel funding makes

People outside a shelter in the Lower West Side of Chicago earlier this year.

The homeless population, including those who are chronically homeless, reached new highs in 2023.

Partial count of U.S. homeless Total U.S. homeless count population† 600,000 600,000 400,000 400,000 200,000 200,000

*2021 count reduced by Covid-19 pandemic. †2024 represents data available thus far from

Number of Homeless People Is on Pace for Record

By Jon Kamp

The number of homeless people in the U.S. continues to grow, putting the country on pace to hit yet another record high this year.

Counts from encampments, streets and shelters are largely higher than they were in 2023, according to preliminary data collected and reviewed by The Wall Street Journal.

The numbers come from more than 250 homeless-service organizations covering cities, metro areas and vast rural areas. They are meant to reflect homelessness as it existed on a single night early this year. The Journal's count includes about 550,000 homeless people so far, up about 10% from what these places reported last year.

The trend thus far means the U.S. is likely to top the roughly 653,000 homeless people estimated in 2023the highest number since the government started reporting comparable data in 2007.

The final count will depend on outstanding data from places that haven't yet divulged their 2024 numbers, especially New York City, which reported the highest count last year.

Migrants bused by Texas to Chicago and Denver contributed to the latest increases when they landed in shelters there. Migrants have arrived in significant numbers in New York, which has long had a legal right to shelter, swelling numbers in last year's count.

The latest homeless counts were largely done in January, just after the U.S. set a record for illegal border crossings, and before a stark decrease at the southern border eased the pressure. Neither Chicago nor Denver has seen migrants bused there since June.

Growing homelessness also reflects a thorny mix of economic and social challenges. Soaring housing prices and high rents have pushed families out of homes, especially since pandemic-era aid wound down, according to advocates for the homeless. One poverty measure used by the government rose after pandemic-related tax credits

expired. "It's deeply unfortunate, but it's not surprising," said Diane Yentel, chief executive at the nonprofit National Low Income Housing Coalition, on

the latest homeless increase. Overlapping mental-health and fentanyl crises are contributing factors. The U.S. set a record last year for chronic homelessness, which entails people with disabilities who are persistently without a home.

The U.S. Department of Housing and Urban Development collects homeless data every year and expects to issue its report on 2024 in December.

Nearly 400 homeless-services groups, known as con-

tinuums care, perform the counts. Many posted data online, issued reports or made numbers available upon request. Some groups declined to provide figures ahead of HUD.

The numbers are still considered preliminary and reflect just a moment in time. They are widely considered to be undercounts that can be swayed by how many volunteers show up or severe weather. But the tallies form the backbone of HUD's annual report to Congress and help to identify trends.

The agency said many cities are making progress, noting 2024 decreases in unsheltered populations in Los Angeles and the Phoenix area. HUD cited the government's efforts, including spending to help at-risk veterans. It also pointed to \$175 million recently provided for permanent, supportive housing and \$40 million in grants aimed at legal help for low-income tenants facing eviction.

HUD said that it is still analyzing 2024 numbers and

Growing

homelessness

reflects a mix of

economic and

social challenges.

that the January snapshot doesn't reflect the situation today About 70%

of reports from around the U.S. that the Journal reviewed included higher numbers for 2024. Boston

said its tally rose about 11%, fueled in part by a migrant surge in Massachusetts.

Excluding cities and areas that report separately, Massachusetts numbers jumped to nearly 12,100 from about 4,430 last year, reflecting in part migrants sheltered in

hotels and motels there. Nearly half of the 7,250 families recently in Massa-

chusetts' family shelters were

migrants, according to the state, which provides emergency family shelter by law. Γhe state expects to spend more than \$1 billion on family shelters and the broader response this fiscal year.

San Francisco and the Seattle area reported homeless increases. Among other major cities, Philadelphia, Washington, D.C., and the Miami area also reported higher 2024 numbers. Milwaukee's count decreased 16%.

Chicago's increase was higher than any other seen thus far: The count roughly tripled while topping 18,800. More than seven of every 10 homeless people counted there was a migrant in a shelter, according to city data. The migrant count in shelters was significantly lower in September, and Chireduced projected cago spending on the issue this

The January count in the Denver metro area rose 42% to about 14,300, significantly boosted by bused-in migrants. But the point-in-time count occurred when the migrant population in local shelters was near its peak. The city received 144 charter buses sent by Texas in December alone.

In 2022, Civilization Works received \$20,000 from the George Mason Universitybased Mercatus Center, a freemarket think tank that received millions in donations from the Charles G. Koch Foundation, according to tax

Later that year, local anti-

wind groups began using simi-

lar language to promote a link

between whale deaths and off-

shore wind projects, according

to a Journal review of archived

websites and Facebook groups.

rapidly, publicly boasting

nearly two dozen organiza-

tions and individuals as part

of its network. The coalition

isn't a tax-exempt organiza-

tion, so donations to Save

Right Whales are routed

through Civilization Works.

Save Right Whales grew

records. Charles Koch and David Koch ran a fossil-fuel empire funding numerous efforts to undermine U.S. clean-energy policies. Some members of Save Right Whales are supported by other organizations with deep

ties to fossil fuels. In its infancy, a New Jersey-based coalition member, Protect Our Coast New Jersey, relied on the Caesar Rodney Institute, a libertarian think tank funded in part by a trade group representing the fossil-fuel industry, to handle donations, according to the group's president.

up a fraction of Caesar Rodney's overall donations, said David Stevenson, a director at the Caesar Rodney Institute and American Coalition for Ocean Protection manager.

Four Dead, 17 Injured After Mass Shooting In Alabama

By MICHAEL WRIGHT

Four people were killed and at least 17 others were injured in a shooting in Birmingham, Ala., late Saturday that police said was likely carried out by multiple gunmen.

The incident took place around 11 p.m. local time in the city's Five Points South neighborhood, where multiple suspects are believed to have fired upon a large group in a public area. Approximately 100 shell casings were recovered at the scene, authorities said.

Two men and one woman were pronounced dead at the scene, and another man died after being taken to a hospital. police said. Some of those wounded were in a life-threatening condition.

No suspects were in custody, police said. An individual at the location was the intended target, authorities said. That person was one of the four killed in the shooting.

"Detectives believe the shooting was not random and stemmed from an isolated incident where multiple victims were caught in the crossfire," Birmingham Police Department Assistant Public Information Officer Truman Fitzgerald said. Police urged anyone with information to contact law enforcement, saving it would help accelerate the investigation.

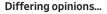
Five Points South in downtown Birmingham is a popular nightlife district and home to the University of Alabama at Birmingham campus.

-Ginger Adams Otis contributed to this article.

U.S. NEWS

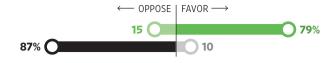
P W L C 10 11 12 H T G K R F A M 1 2 3 4 5 6 7 8 9 0 I X X

Share of respondents in favor of, or opposed to, each policy



Ordinary people Economists

Eliminate taxes on tips for service workers



Eliminate taxes on Social Security income, even if it

increases the national debt



Impose a tariff of up to 20% on all imported goods



Penalize companies that engage in price gouging for food and groceries



Make the 2017 Trump tax cuts that expire in 2025 permanent



Note: Excludes share of responses where the person didn't know or preferred not to say.
Sources: Wall Street Journal survey of 750 registered voters conducted Aug. 24-28, 2024; margin of error: +/- 3.6 pct. pts (ordinary people);

...and some agreement

Ordinary people Economists

Give first-time home buyers \$25,000 to put toward a down payment, even if it increases the national debt



Cap out-of-pocket spending on prescription drugs to \$2,000 a year for all Americans



Cap insulin prices to \$35 for all Americans



Partially reverse Trump's corporate tax cuts by increasing the tax rate on corporations to 28% from 21%



Provide a \$6,000 tax credit to families with newborns



University of Chicago's Clark Center survey of 39 academic economists (economists)

ANDREW MOLLICA/WSJ

Voters, Economists Diverge on Policy

By Paul Kiernan

Economists and ordinary people often seem to inhabit different planets, but seldom has the chasm been this wide.

As former President Donald Trump and Vice President Kamala Harris compete for any possible edge, they have offered a plethora of ideas that, while delighting voters by varying degrees, have appalled economists because they would distort markets or deepen America's fiscal hole.

The Wall Street Journal's recent poll asked 750 registered voters about the presidential candidates' proposed economic policies. Then, at the Journal's request, the University of Chicago's Clark Center put exactly the same questions to a panel of 39 top academic economists.

Trump's plan to stop taxing tips for service workers—an idea Harris adopted after the Republican announced it—is supported by about four-fifths of voters polled by the Journal. But among economists, 87% disapprove, saying it would arbitrarily benefit a small subset of lower-wage workers, distort the labor market, widen the budget deficit and create incentives to game the system.

has proposed Trump across-the-board tariffs of up to 20% on imported goods.

Forty-seven percent of voters approve of the idea, slightly more than those who disapprove. By contrast, 100% of the economists said they "strongly oppose" the idea.

Trade is a bedrock of economic development that, in theory, enables each country to focus on what it is good at.

"When you put a tariff on something artificially, you're going to make things more expensive, and if it's an input, like steel for example, then you're going to make the downstream companies that are using steel less competitive," said Steven Kaplan, a conservative-leaning economist at the University of Chicago's Booth School of Busi-

The American Economic Association defines economics as the study of how people use resources, respond to incentives and make decisions. Economists use data and theoretical models to evaluate whether government initiatives make people, and society at large, better off. The father of economics,

ness.

the 18th-century philosopher Adam Smith, extolled the invisible hand of markets and decried spendthrift kings and ministers. With fiscal rectitude out and populism in, modern economists say Smith would be holding his nose if he were alive today.

"We've done a terrible job of educating the American people," lamented Edward Glaeser, a center-right economist at Harvard University.

Eric Maskin, a Harvard economist and a 2007 Nobel laureate, said: "I also blame politicians who know better for not trying harder." Maskin said he can't recall an election cycle that reeked so badly of rotten policy. "I think this may be a new low," he said.

Harris has proposed a ban on corporate price gouging for food and groceries. It is one of her most popular policies. The share of voters who approve it exceeds the share who disapprove by a margin of 49 percentage points.

By contrast, two-thirds of economists disapprove and just 13% approve. "'Price gouging' is too vague to be useful—and would be harmful. if it was clarified enough to be significant," said William Nordhaus, an economist at Yale University and a 2018 Nobel laureate. "I doubt if it will be taken seriously."

History has shown that it is a bad idea for the government to attempt to regulate prices, which normally serve to balance supply and demand in a competitive market. "It interferes with the market system," said Maskin, who described his politics on noneconomic issues as left of center. "Higher prices help to equilibrate supply and demand, and they also serve a useful incentive function." "It's either a gimmick, or

it's a mess," said Carl Shapiro, a professor at the University of California, Berkeley, who served in President Barack Obama's administration.

There are areas where the public and economists agree. The public backs Harris's proposal to cap insulin prices at \$35. So do 64% of economists.

"I do not favor a general price cap on drugs," said Kenneth Judd, an economist at the conservative Hoover Institution who studies imperfect competition, among other topics. Insulin, however, is an exception, he said. "Insulin is a very important drug, it has been around for many decades with great success, and there was no justification for the recent price increases."

A few of the candidates' proposals are supported by most economists. These include Harris's plan to provide a \$6,000 tax credit to families with newborns, and to reverse Trump's corporate tax cuts partially by increasing the tax rate on corporations to 28% from 21%.

"We cannot keep cutting taxes forever," said David Autor, an economist at the Massachusetts Institute of Tech-

Leaders Agree On Short-Term **Spending Deal**

By Katy Stech Ferek

WASHINGTON—Congressional leaders on Sunday backed a bipartisan spending deal that would avoid a government shutdown before the election while also giving the Secret Service an extra \$231 million to help protect presidential candidates during the final hectic weeks of campaigning.

The proposal, backed by top Republicans and Democrats, would extend government funding until Dec. 20, giving Congress more time to figure out how much money to allocate each federal agency for the next fiscal year. The government faces a partial closure at the end of this month if lawmakers don't pass an extension.

The deal shows that GOP leaders have no appetite for a drawn-out fight just ahead of the Nov. 5 election, despite calls from some Republicans to demand spending cuts or a contentious voter-ID proposal as a condition for keeping the government funded. Last week, House Speaker Mike Johnson (R., La.) tried to pass a sixmonth stopgap spending bill with the Save Act voting provision attached, but it failed.

"While this is not the solution any of us prefer, it is the most prudent path forward under the present circumstances," Johnson said in a letter to House Republicans on Sunday about the revised approach.

Democrats reacted to the proposal by saying they were pleased that both sides came together for negotiations but made it clear that there is little time for Congress to act.

"This same agreement could have been done two weeks ago," said Senate Majority Leader Chuck Schumer (D., N.Y.).

The money for the Secret Service comes as officials have faced questions on whether a lack of resources contributed to the security lapses that enabled a gunman to shoot Republican presidential nominee Donald Trump in the ear during a campaign rally in Butler, Pa., in July. Secret Service agents stopped a second apparent assassination attempt on Trump at his Florida golf course Sept. 15.

The additional money wouldn't be available until the agency transmits a report on the first assassination attempt to a bipartisan task force investigating the incident. It would also give Secret Service officials the flexibility to move around money within the agency to accommodate demand through the end of the vear. Leaders of both parties and President Biden have said that they are open to sending additional money to the agency. Acting Secret Service Direc-

tor Ronald Rowe told report-

ers on Friday that the agency was maxing out its existing resources, though an internal investigation into the Butler shooting cited a litany of other problems, rather than a lack of manpower.

Rep. Mike Kelly (R., Pa.), the chairman of the House task force investigating the assassination attempt, said on ABC that getting more money to the Secret Service is crucial.

The agency, Kelly said, needs "more people on the ground, people who are trained, people who are competent, and people who have a nose for all this....These guys are exhausted. They have been played out to the very end. Why don't we look at where we're spending money, redeploy it, try to get more people on board.'

Rep. Jason Crow of Colorado, the top Democrat on the task force, said on ABC that the Secret Service is "no doubt stretched thin" and that other federal agencies could step up to help more. On Friday, House lawmak-

ers voted unanimously on a bipartisan measure to expand Secret Service protection for major presidential and vice presidential candidates. The measure orders Secret Service officials to take the standard they use to determine how many agents should protect the president and apply it



House Speaker Mike Johnson

when figuring out a candidate's protection needs. It still needs Senate approval.

After Johnson's first proposal to extend government funding for six months, he turned to Democratic leaders in the House and Senate to come up with a new one.

In the letter to House Republicans, Johnson said it was necessary for the House to take the first step in drafting the proposal to "prevent the Senate from jamming us with a bill loaded with billions in new spending and unrelated provisions."

The measure is likely to get a vote on Wednesday. It would also need approval from the Democratic-controlled Senate

and Biden. Trump had called for House Republicans to use the leverage of a potential shutdown to strike a hard bargain with Democrats to tighten voter-ID rules.

-Sadie Gurman contributed to this article.

Trump Tells Women They Won't Think About Abortion if He Wins

By Natalie Andrews AND CATHERINE LUCEY

Former President Donald Trump claimed women won't think about abortion anymore if he wins the election, a day after Vice President Kamala Harris argued he was the "architect" of a reproductive healthcare crisis.

Trump said in a lengthy allcaps social-media post late Friday, and again at a rally in North Carolina Saturday, that women are less healthy, less safe, more depressed and less optimistic than they were four years ago when he was president. Speaking directly to women, he said: "You will no longer be thinking about abortion" because the issue has now been returned to the states to decide.

The comments underscored Trump's anxiety over the issue, which has proved to be a powerful motivator for women and could play a major role in the suburban areas that may decide the election. The Harris campaign quickly circulated his remarks, with a spokeswoman saying: "After ripping away our reproduc-

tive freedom, now he's trying

to tell us how to think."

Harris, who has campaigned aggressively on abortion rights, traveled to Georgia Friday where she assailed Trump for appointing three of the Supreme Court justices who overturned Roe v. Wade in 2022, and blamed Trump for states' restrictive abortion laws. "This is a healthcare crisis, and Donald Trump is the architect of this crisis." she She also referenced report-

ing by ProPublica on two women who died in Georgia, arguing that it was due to abortion laws in the state. "He is proud," Harris said. "Proud that women are dying?...How

A Wall Street Journal poll taken in late August found Harris leading Trump in a head-to-head matchup among women voters by 13 percentage points, while Trump led among men by 10 percentage points. Asked whether there was an issue they felt so strongly about that they wouldn't vote for a candidate they disagreed with on it, 33% of women in the poll identified abortion—far higher than

any other issue.



Republican presidential nominee Donald Trump spoke about abortion Saturday in North Carolina.

because

The Supreme Court ruling overturning Roe has unfurled a messy patchwork of state laws across the country. When Roe was overturned, about half of the states sought to ban or heavily restrict abortion. Today, that number stands at around 18, in part

abortion-rights groups have won seven

straight ballot referendums. While Trump has continued to brag about overturning Roe. he has wavered on abortion, as the issue has proved motivat-

ing for Democrats in midterm

and off-year elections.

Trump, a Florida resident, said earlier this month that the state's current ban on the procedure after six weeks of pregnancy was too short, and suggested he would vote for a ballot initiative that would allow abortion until fetal viability, or about halfway His campaign walked back the comments, and Trump a day later said he would vote

through a typical pregnancy.

In citing opposition to the Florida measure, Trump said Democrats were "radical" and wanted to legalize the procedure until the ninth month of pregnancy. He falsely claimed some states allow a mother to "execute the baby after birth." Infanticide is illegal in every state. Major medical associations say abortions can only be performed during a pregnancy, not after it has ended.

Harris said she supports legislation that would restore the protections in Roe v. Wade, which would make abortion widely legal until fetal viability, or until roughly 23 weeks of pregnancy. Roe provided exceptions after that if a woman's life or health was in danger.

Harris has repeatedly said that Trump would sign a national abortion ban. Trump has said he won't do that, but in his lone debate with Harris he declined to commit to vetoing such legislation if it came across his desk.

Harris, in Private, Pursues Backing of Corporate America

The vice president has sought advice of CEOs and investors as she campaigns

Texas billionaire Mark Cuban only occasionally spoke with President Biden or his aides.

But when he thought over the summer that drug-industry middlemen were hiking up the cost of medicines to drive

> By Tarini Parti, Emily Glazer and Maggie Severns

independent pharmacies out of business, he found an eager sounding board in Kamala Harris's presidential campaign.

Cuban, a celebrity entrepreneur who dabbles in politics, has spent hours in recent weeks on phone calls, text and email chains talking with the Harris campaign about the pharmacy problem—an issue he is familiar with because of an online pharmacy he cofounded—and taxes, Wall Street, and the deficit, too.

When the Harris campaign rolled out its platform, Cuban saw a nod to their conversations. The platform specifically mentioned that as president, she would take on the "pharmacy middlemen" that he opposes.

Like past Democratic candidates, Harris has made taking on wrongdoing by American corporations a central part of her pitch to voters, referring on the campaign trail to her record of taking on big business, blaming food manufacturers for high grocery prices and promising to increase taxes on corporations and the wealthy.

But in private at least, she is making a quiet play for Corporate America's support, seeking out advice from leaders across sectors. She has offered few policy specifics, but many executives say they view her openness to their feedback as enough for now.

Cuban's experience reflects that of other business leaders who say they have found an open ear and even hand in Harris. The vice president has worked to cultivate relationships with Wall Street and Silicon Valley—a different approach than the one taken by Biden, who business leaders say didn't make a concerted effort to engage them beyond formal meetings, such as a roundtable on prescription drug costs Cuban attended at the White House in March. Last week, Harris also spoke with another top financier, JP-Morgan Chief Executive Jamie Dimon, according to people familiar with the matter.

In the 10 days before Biden bowed out of the race, his campaign received around \$91,000 from about 990 donors who self-identified as CEOs, according to fundraising reports filed with the Federal Election Commission. In the 10 days after, Harris's campaign received nearly \$2 million from 5,000 such donors.

Harris has hosted dinners of 8 to 10 chief executives at the vice president's Naval Observatory residence, according to attendees, to discuss a range of topics with guests such as Visa's Ryan McInerney, who has donated to both Democrats and Republicans, Motorola Solutions' Greg Brown, a Republican, and CVS Health's Karen Lynch, who isn't publicly affiliated with either party.

Over the course of hours, attendees said, she would typically listen to their thoughts on infrastructure funding, the Inflation Reduction Act, diversity, equity and inclusion efforts, China and the labor market. Some of them came away impressed. "She was given a bad rap in the echo chamber," said one.

To be sure, many chief executives say they have found themselves without a natural political home this election season. Harris's criticism of her opponent Donald Trump for giving tax breaks to billionaires and big corporations turned off some business leaders who are choosing to sit on the sidelines, and some in Silicon Valley have shifted their support to Trump, in part over Democrats' approach to regulation.

Her personal courting of the business community has, however, fueled optimism that she would reject some progressive priorities as president that executives view as damaging.

Corporate leaders have already scored a major win: The vice president recently backed a less drastic increase in the top capital-gains tax rate, breaking with a plan Biden outlined in his budget blue-print earlier this year.

Executives have also

pressed Harris to ditch more of Biden's major tax proposals. One plan would tax unrealized capital gains above \$5 million at death. Another, which the administration calls the billionaire minimum income tax, levies taxes on some unrealized gains during life for people with a net worth over \$100 million.

Harris hasn't specifically weighed in on taxing unrealized gains but has said she supports a billionaire minimum income tax. A Harris adviser said she is open to structuring that tax differently than Biden did, though the nontaxation of unrealized gains is the core problem it attempts to solve.

Roger Hochschild, former CEO of Discover and a Harris supporter, said that, despite those uncertainties, he believes Harris would "find the right balance" on taxing the wealthy if elected. Hochschild was one of roughly 100 business leaders to sign a recent letter endorsing Harris.



Mark Cuban, shown outside the White House after a visit in March, has communicated often with the Harris campaign.



Democrats' Hopes Rest On Montana

By LINDSAY WISE AND ANTHONY DEBARROS

GREAT FALLS, Mont.—Voters here in one of the most sparsely populated states are wrestling with a question that could determine the direction of the entire country next year: Is Sen. Jon Tester still the same down-home dirt farmer they elected three times or has he become a Washington liberal who rubber stamps Democrats' agenda?

The stakes are high in Big Sky Country.

Tester, known for his signature flat-top haircut and three missing fingers—he lost them in a meat grinder when he was 9—is the most vulnerable senator up for re-election. If he goes down in this red-leaning state, so does the Democrats' Senate majority. They have a 51-49 margin but are sure to lose a seat in deeper-red West

A loss by Tester would give Republicans a stronger hand in rewriting the tax code for millions of American households and businesses in 2025. The party that controls the Senate confirms Supreme Court appointments and can approveor block—cabinet picks.

That is why this race is attracting tens of millions of dollars in outside spending and campaign ads. But for voters here, there is something more personal gnawing at them. The country is changing. Montana Has Tester changing.

"Look, I have never had a wide margin of victory," Tester reminded a crowd of nervous supporters one recent evening in downtown Bozeman. "And I ain't gonna have one this time,

Tester says he's the same centrist he has always been and votes to advance Montanans' interests, in line with their values. Many voters said they have had a personal interaction with him, bumping into the Democrat at a grocery store, the airport or a park. Some have heard him play his trumpet at Memorial Day events. In part, he is running on personal ties and familiarity.

But public polls show Tester, 68, trailing his Republican opponent, Tim Sheehy, a wealthy businessman and combat veteran who is running as a Trump-endorsed conservative. National election forecasters recently shifted the race from "tossup" to "lean" or "tilt" Republican.

Republicans are increasingly confident that they can finally oust Tester. They say his breed of "prairie populist" Democrat, once common in places such as Iowa, South Dakota, North Dakota and Montana, is headed for extinction, as rural, working-class and union voters shift toward the Republican Party.

Trump won Montana by 16 points in 2020, the same year the state's Democratic then-Gov. Steve Bullock lost by 10 in



Democratic Sen. Jon Tester on his farm. His race is drawing tens of millions of dollars in outside spending and campaign ads.

his Senate bid. Republicans have swept all other statewide offices and secured a supermaiority in the legislature. Even Tester, the thinking goes, can only outrun his party's fate for

Sen. Steve Daines, the state's other senator, said Tester's voting record is "out of step with where most Montanans are," and internal GOP polls show him losing. Ultimately, the voters will decide if Tester is done for, Daines said, "but he's the last Democrat left in Montana."

Sheehy's campaign declined to talk to The Wall Street Journal for this article and didn't respond to several requests for a reporter to attend his campaign events or speak with the candidate.

To pull off a fourth term, Tester will need a significant number of Trump voters to split their tickets, voting Democratic for Senate even as they

vote Republican for president. In 2012, the last time Tester ran in a presidential-election year, he outperformed then-President Barack Obama, who lost in the state, by almost 7 percentage points.

Tester's campaign is running ads featuring Trump voters who plan to support him. He skipped his party's Chicago convention and is the only Democratic senator who has declined to endorse Vice President Kamala Harris, saying he wants his race "to be about

Tester also is leaning into abortion rights, framing the issue as a matter of personal freedom in line with Montana's libertarian ethos. An initiative that would codify the right to abortion up to viability in Montana's constitution is on the ballot this fall, and Tester allies hope enthusiasm for the measure will drive turnout for him.

At the Bozeman rally, Tester was introduced by Alexis McGill Johnson, the president of Planned Parenthood Action Fund. Waving his two-fingered left hand, Tester strolled on stage to chants of "Dirt! Farmer! Dirt! Farmer!"

Tester asked: "You don't want a politician or a bureaucrat or a judge telling you, especially if you're a woman, what healthcare decisions you're going to make, do you?"

"No!" the crowd roared. Interviews with dozens of voters across the state found

Montanans divided over Tester's authenticity and his poli-"It's always been a tight

race for him in Montana. He just managed to get past 'em," said Susan Walker, 75, a retired music teacher who attended the abortion-rights rally. "I'm a little worried this

For other Montanans, Tester's dirt-farmer image has worn thin. Shannon Bice, a 53vear-old electrical engineer in Belgrade, said he has voted for Tester in the past, but he isn't going to support him this time.

"He's changed. He used to look at the issues and vote,' Bice said of Tester. "But now it's just straight with the Democratic side." Bice plans to vote Republican up and down the ballot.

Tester's camp has tried to paint Sheehy, who moved to Montana in 2014, as one of the wealthy outsiders who are flocking to the state, driving home prices and property taxes higher. Montana is the fifth fastest-growing state this decade, according to Census Bureau estimates. Since Tester's last election, about 54% of voters who moved to the state are Republican, according to estimates from voterfile vendor L2.

U.S. WATCH



JUMP-START: Performers practice in Uniondale, N.Y., for an event for India's Narendra Modi. who visited the U.S. for a summit with President Biden and leaders of Japan and Australia.

When people

are fed, futures

are nourished.

FEEDING AMERICA

NEW YORK CITY

Police Official's Homes Searched

Federal authorities searched the homes of New York City's newly named interim police commissioner and seized materials unrelated to his police work, he said.

Thomas Donlon, who became the interim commissioner just one week ago after the resignation of his predecessor, said "this is not a department matter, and the department will not be commenting." His statement didn't address what the investigation was about, which federal authorities were involved or what materials had been seized.

The previous police commissioner, Edward Caban, resigned after federal authorities seized his electronic devices as part of a probe.

-Associated Press

NORTH CAROLINA

Aides to Governor Candidate Resign

Several top staffers in North Carolina Republican Lt. Gov. Mark Robinson's campaign for governor have guit their posts. marking more fallout from a CNN report outlining evidence that he made disturbing posts on a pornography website's message board more than a decade ago.

The campaign said Sunday that senior adviser Conrad Pogorzelski III, campaign manager Chris Rodriguez, the campaign's finance director and the deputy campaign manager "have stepped down from their roles with the campaign." Information on new staffers would be forthcoming soon, the campaign said.

"I appreciate the efforts of these team members," Robinson said.

-Associated Press

HEALTH

Free Covid-19 Tests **Available Soon**

Starting this month, Americans will be able to order free Covid-19 test kits that will be mailed to their homes.

U.S. households will be able to order as many as four nasal swab tests at COVIDTests.gov when the federal program re-

The U.S. Health and Human Services agency overseeing the program hasn't yet given an exact date when ordering can begin.

An agency spokesperson has said the tests will detect current virus strains and can be ordered ahead of the holiday season.

The Centers for Disease Control and Prevention already has recommended this fall's shot for everyone age 6 months and older.

—Associated Press

Chip Giants Discuss Bet

On Mideast

no specific plans currently for

Continued from Page One

a facility in the U.A.E.

The discussions with TSMC and Samsung reflect both the U.A.E.'s growing tech ambitions and a global push to fund expanded chip production, in large part to satisfy the needs of the AI boom. Costs have ballooned in recent years, to the point that a single cutting-edge chip factory can require \$20 billion. Projects on the scale being discussed in the U.A.E. involve complexes that could contain numerous factories and cost over \$100 billion in aggregate.

Abu Dhabi has one of the world's largest pools of sovereign wealth, and Mubadala said its portfolio of investments was valued at about \$300 billion as of last year.

Government officials and industry executives said substantial technical and political hurdles remain. One concern is that chip manufacturing requires large amounts of superclean water for uses such as rinsing the silicon wafers that microscopic circuits are etched onto. Much of the U.A.E.'s water is produced through desalination and would require sub-



FROM PAGE ONE

Top executives at chip maker TSMC have visited the U.A.E. recently. Above, the TSMC Hsinchu campus in Taiwan.

stantial purification.

There also are concerns about the availability of engineering talent to staff major new factories far from the companies' home bases, in a country without much of an existing chip-making supply chain. If TSMC and Samsung were

to go forward, the projects could usher in a next wave of industry expansion following an era of manufacturing growth driven by government subsidies in the U.S., Europe and East Asia.

ing Intel and TSMC.

"We have worked exten-The U.S. is putting \$39 billion of grants into domestic chip-making under 2022's Chips Act, coupled with tax incentives expected to be Security worth much more. European tional leaders have cobbled together spokesman said. their own incentive packages, drawing in companies includ-

As they consider new projrialize soon, and construction

ects in the U.A.E., TSMC and Samsung have had discussions with U.S. government officials who are concerned about shipments of advanced AI chips into China, a U.A.E. trading partner.

The parties have spoken to Biden administration officials about giving the U.S. oversight on the production and shipments of chips coming from any U.A.E. factories, although details have yet to be worked out.

sively with the U.A.E. on areas of advanced technology over the last two years, and the partnership is moving in the right direction, " a U.S. Na-Council

The chip makers aren't expecting a resolution of U.S. concerns about China to mateon the factories likely won't start until that happens, according to people involved in the discussions.

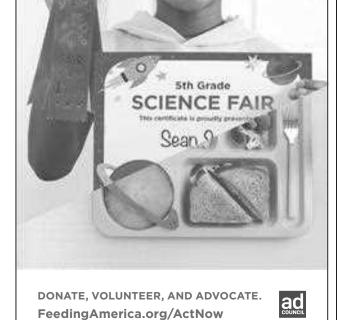
The U.A.E. has made headway recently in its effort to be a player in advanced technologies. OpenAI Chief Executive Sam Altman has talked with investors in the U.A.E., among other places, about dramatically expanding production of chips, power and other essential inputs for developing AIefforts that ultimately could entail investment of as much as \$5 trillion to \$7 trillion, The Wall Street Journal reported in February. Emirati entities

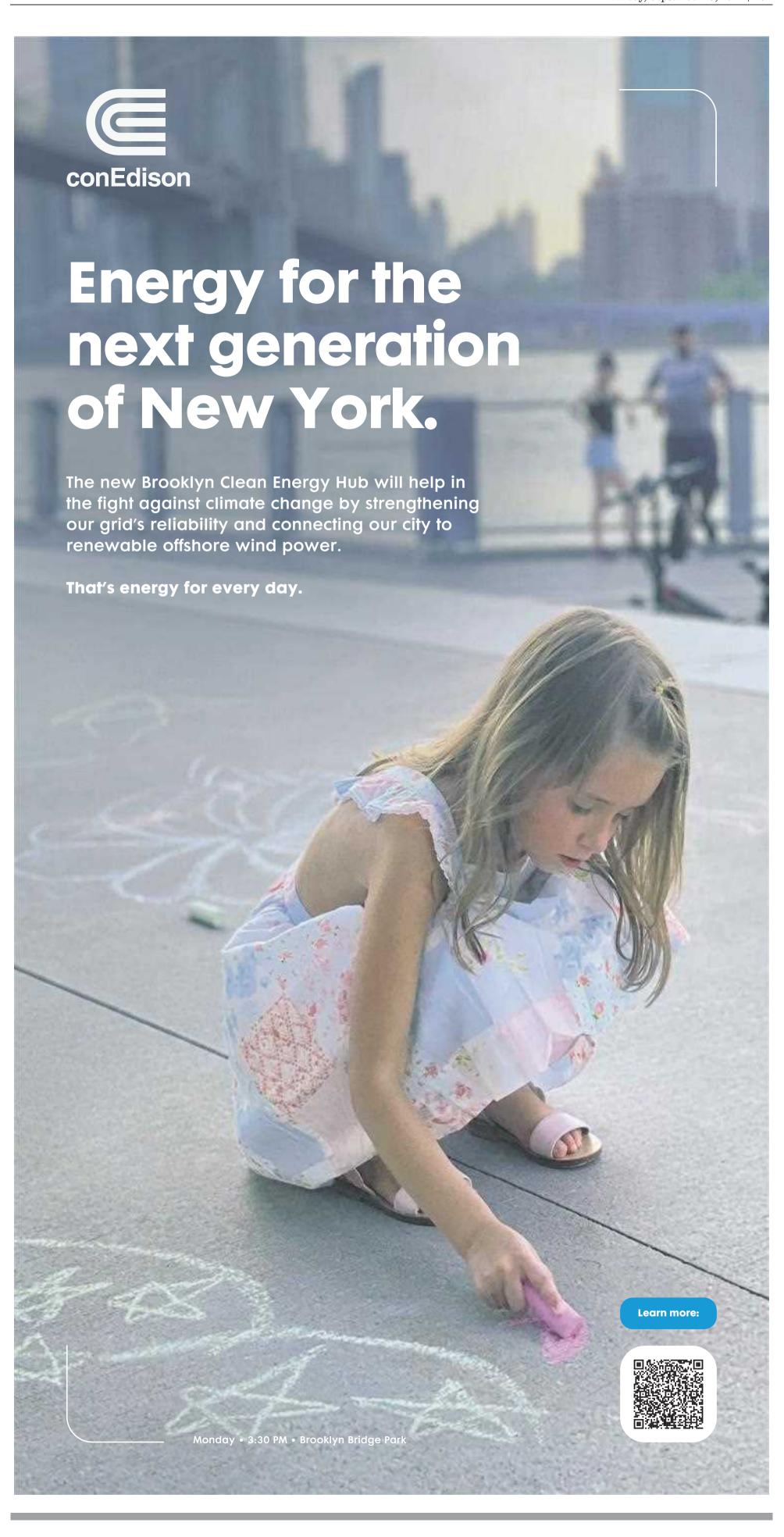
forged ties with other big companies in AI, including a stake in the startup Anthropic of nearly \$500 million and recent talks about participating in the latest funding round for Altman's OpenAI. The country's leading AI company, G42, received a \$1.5 billion investment from Microsoft this year.

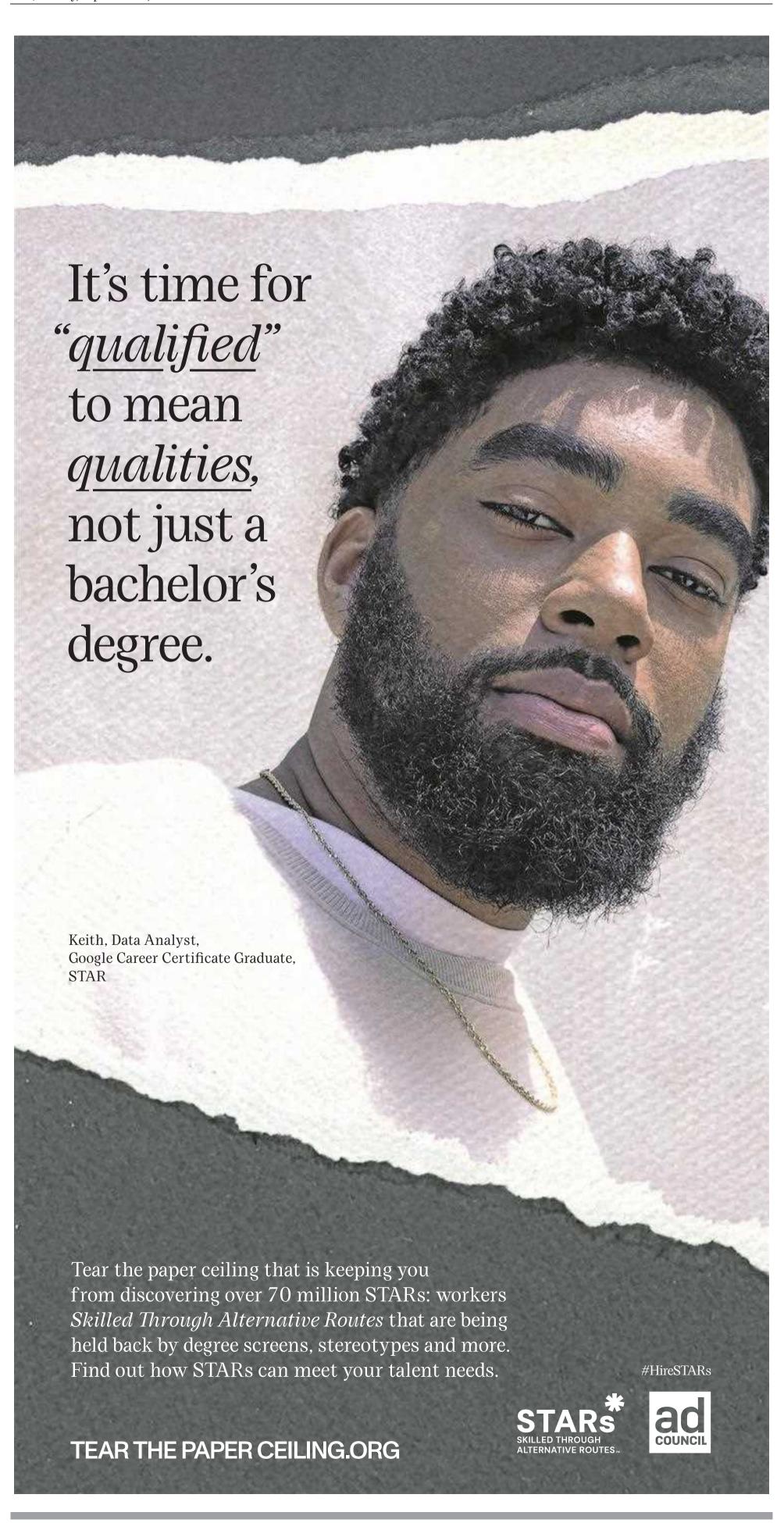
MGX also has partnered with companies including BlackRock and Microsoft on a fund announced this month to invest up to \$100 billion expanding and building artificial-intelligence data centers.

Abu Dhabi has invested in the chip industry before, taking control of the former manufacturing operations of Advanced Micro Devices in 2008 as part of a spinoff.

-Yang Jie, Berber Jin and Tom Dotan contributed to this article.







WORLD NEWS

Biden's Nuclear-Deal Envoy Hit by Probe

FBI is investigating Robert Malley over his handling of secret information

By Brett Forrest

Robert Malley, the Biden administration's Iran envoy, arrived in Vienna in the spring of 2021 seeking a negotiated return to a landmark 2015 agreement to prevent Tehran from developing nuclear weapons. Forged under President Barack Obama, the deal had been abandoned by President Donald Trump.

But within 16 months of starting, the talks were dead, and Malley ultimately found himself caught in a spiraling FBI investigation into whether he had improperly handled secret information. He has been sidelined, his top-secret security clearance suspended.

And despite several years of efforts by the Biden administration to contain Iran's ambitions, it is two weeks away from producing enough fissile material for a nuclear weapon, Secretary of State Antony Blinken said in July.

The investigation into Malley's conduct led to a tense meeting between senior Federal Bureau of Investigation and State Department officials, according to people familiar with the conversations. A State Department spokeswoman declined to comment on the meeting or other aspects of the probe into Malley's conduct, but said that the department "would never look to direct the FBI on how to conduct any investigation.' The FBI would neither confirm nor deny the existence of an investigation into Malley.

The 61-year-old Malley had gone to school with Blinken in Paris and spent decades in and out of government going farther than any other prominent recent U.S. diplomat to engage adversaries and terror groups in the Middle East.

He helped broker the 2015 nuclear accord with Iran, signed with the European Union and several of its members, along with Russia and China. But in 2018, Trump pulled the U.S. out, characteriz-



Robert Malley, here in 2022 in Vienna-site of failed nuclear talks with Iran—is on unpaid leave from the State Department.

ing it as dangerous and naive. After Biden won the 2020

election, Blinken phoned Malley, asking if he would be willing to give the deal another attempt. Angry at the U.S. for having left the nuclear deal, Iran officials refused to negotiate with their American counterparts directly. European and Chinese diplomats were enlisted to ferry messages.

Malley proposed removing the portion of the U.S. sanctions that related to Iran's nuclear program, attempting to mirror the conditions of the original agreement. His direct approach worried some members of his 10-person negotiating team, who believed he was showing his hand too soon.

Some Western negotiators considered their Iranian counterparts cagey and opportunistic—ready to pounce on anything the U.S. suggested as though it were a formal of-

fer—and believed they were using the negotiations to buy time to advance the nuclear program. Iran's mission to the United Nations didn't respond to a request for comment.

Iran pocketed U.S. proposals and demanded more deal points. Tensions within the U.S. negotiating team arose over competing impulses making a deal quickly or pursuing a lasting agreement.

Talks broke off without a deal in June 2021. When Tehran's negotiators met with U.S. counterparts in late November 2021, Iran said it wanted to start from scratch.

Malley advocated staying, believing that the price for persuading Tehran to return to talks later would prove too costly. And the U.S. did stay, a decision that fractured the country's negotiating team.

"The U.S. showed that it was quite desperate to get a deal," a European negotiator said. "The Iranians knew they could just string it out."

The negotiations again stalled for several months but in what Western officials described as a last push, Euro-

pean negotiators presented Iran with a draft of a deal, which Iran rejected.

Last spring, law-enforcement officials at the State Department received information about Malley that could affect his ability to hold a clearance, according to the inspector general report. According to people familiar with the matter, Malley had clicked on a phishing link, compromising a personal email account. Investigators examining the breach discovered evidence that Malley had potentially moved classified material to a personal account. His clearance was suspended.

In a twist a few months later, the Tehran Times, an Iranian state media outlet, published a photograph of the letter Malley had received informing him that his clearance was suspended, without explaining how it had obtained the material. A State Department spokeswoman declined to comment on the matter.

Malley remains on unpaid leave from the department, awaiting resolution of the FBI's investigation.

Israel, Hezbollah Near War

Continued from Page One

On Sunday, Hezbollah said it targeted Israel's Rafael Advanced Defense Systems—one of the developers of its Iron Dome air-defense system—as part of the group's initial response to the explosion of thousands of its communication devices, an attack attributed to Israel that killed more than 30 people, including a number of civilians. The company is located near Haifa, about 15 miles from the Israel-Lebanon border.

The Lebanon-based militant group also said it targeted Israel's Ramat David air base, also near Haifa, with rockets made in Syria. The Israeli military didn't confirm the targets of the strikes but said Hezbollah had struck deeper than usual into Israeli territory.

The strikes followed a week of sharply rising tensions between Israel and the U.S.-designated terror group, heightening concerns that the parties could escalate to a full-blown war and drag the rest of the region along with them. Through a series of Hezbollah last week, Israel has aimed to push Hezbollah to has shown no sign of retreat.



Hezbollah supporters jammed Beirut's southern suburbs for Sunday's funeral of Ibrahim Aqil, a senior military commander.

"If Hezbollah doesn't understand the message, I promise them—they will understand the message," Prime Minister Benjamin Netanyahu of Israel said shortly after the Sunday strikes. "We will take whatever action is

necessary to restore security." Hezbollah initiated the current conflict with Israel on Oct. 8 as a show of support for shocking blows inflicted on Hamas after the Palestinian militant group in Gaza launched the Oct. 7 attacks on stop launching attacks on southern Israel in which Israel northern Israel. But Hezbollah said 1,200 people were killed and 250 taken hostage. Hezbol-

lah has said more than 500 of its own fighters have been killed by Israel. Tens of thousands of civilians on either side of the Israel-Lebanon border have been forced from their homes because of the fighting. More than 150 civilians also have been killed in Lebanon along with more than two dozen Israeli civilians, authorities in both countries said.

The U.S. State Department urged U.S. citizens on Sunday to leave Lebanon while commercial travel options remain available. It also said those who

choose to remain should be prepared to shelter in place.

Some 115 projectiles were fired into Israel from Lebanon on Sunday morning, the Israeli military said. Most were intercepted or fell in open areas, but Hezbollah landed three direct hits on Israeli communities, including two on residential buildings in the city of Kiryat Bialik, stateowned Army Radio reported. Videos circulating online and confirmed by the military show vehicles and buildings set ablaze, and emergency

forces said four people were

injured by shrapnel. The Israeli military launched dozens of additional strikes in southern Lebanon on Sunday after Hezbollah's attack, killing at least three people, Lebanon's Health Ministry said.

Fatima, a resident of the town of Ebba in the Nabatieh region, said that throughout the night she heard strikes about every half-hour and a bomb had fallen near her sister's house. 'They've left no place un-

touched," she said by phone. On Friday, Israel killed 16

senior Hezbollah members in Beirut, in an attack that Lebanon said also killed more than 30 civilians. Israel's message is that either a solution must be reached or it will push on with the fighting, even into a war that is expected to be devastating to both sides.

Defense Minister Yoav Gallant of Israel promised to keep up the pressure until Israel's northern residents could return home. "This is the goal, this is the mission, and we will use everything necessary to achieve it," he told air force commanders on Sunday.

Several thousand Hezbollah supporters jammed the streets of Beirut's southern suburbs on Sunday for the funeral of Ibrahim Aqil, a senior military commander killed on Friday.

Hezbollah's deputy secre-

tary-general, Naim Qassem, spoke at the funeral, saying the group had entered a new phase in its confrontation with Israel and was prepared for escalation. "Threats will not stop us and we don't fear the most dangerous possibilities. We are ready to face all the military possibilities," he said. "We don't need to make threats and we won't define the type of response to the aggression."

—Adam Chamseddine and Michael R. Gordon contributed to this article.

Watch a Video



Scan this code for a video about Israeli and Lebanese

Israeli Raid Shuts an Al Jazeera Bureau

By OMAR ABDEL-BAOUI

The Israeli military overnight raided and closed Al Jazeera's office in the occupied West Bank for at least 45 days, the broadcaster said, in Israel's latest attempt to clamp down on the influential Middle Eastern news channel.

Several Israeli troops, armed and some masked, approached Al Jazeera's West Bank bureau chief, Walid Al-Omari, with a document announcing the order as Al Jazeera broadcast their conversation at the entrance of the office, before soldiers moved in and blocked cameras.

"This is a decision that was made by one of the Israeli generals. He is ordering us to immediately leave the office and take our personal belongings and cameras," Al-Omari said on air as a soldier handed him the notice.

The Israeli military said the order was made after it was determined that the offices were being used "to incite terror."

"The channel's broadcasts endanger the security and public order in both the area and the State of Israel as a whole," the military said, adding that it confiscated equipment and sealed Al Jazeera's offices.

Al Jazeera confirmed in a report that the military's closure order accused the network of incitement to and support of terrorism and that the military confiscated equipment, including cameras.



A separate Al Jazeera statement said the news outlet rejects the allegations made by the Israeli government and military. "The raid on the office and seizure of our equipment is not only an attack on Al Jazeera but an affront to press freedom," the network said. "These oppressive measures are clearly intended to prevent the world from witnessing the reality of the situation in the occupied territories."

Al-Omari and other Al Jazeera staff left the building and continued reporting from the street after receiving the order shutting the bureau. Israeli soldiers were then seen on a live broadcast taking the microphone from Al-Omari's hand and blocking the camera before the feed was cut.

The closure of the West Bank bureau comes as Israel continues its attempts to rein in Al Jazeera, which is based in Qatar, is funded by the government there and is the most-watched broadcast-news channel in the Arab world. The outlet is one of few with a large presence in Gaza. Oatar is one of the main mediators in cease-fire negotiations between Israel and Hamas, alongside Egypt and the U.S.

The board of the Foreign Press Association in Israel and the Palestinian Territories, which represents journalists there, said the move threatens press freedom and that the government should reconsider it.

In May, the Israeli government closed the Israel-based offices of Al Jazeera and prevented its correspondents from reporting inside Israel, saying the broadcaster was hurting national security. That decision drew criticism from press-freedom groups and democracy advocates and led Israel-based Al Jazeera journalists to relocate to Jordan. The order also allowed Israel to block people from accessing the channel within Israel, where about 20% of the population is Arab.

Al Jazeera journalists are effectively prevented from working in the West Bank, said Mohamed Moawad, managing editor of Al Jazeera.

"We are banned. We are not allowed to operate, we are not allowed to cover news from the West Bank," he said in an interview. "We've asked our teams not to report and to wait for us to challenge this in the courts. Safety of our colleagues is a priority."

The Israeli military didn't questions whether Al Jazeera journalists are allowed to continue reporting at all in the West Bank.

Several Al Jazeera journalists have been killed in Gaza in the past year. Most recently, in July, an Israeli airstrike killed Al Jazeera correspondent Ismail Al-Ghoul in the Gaza Strip. Israel accused him of being part of Hamas, which Al Jazeera called a baseless fabrication used to justify the killing.

In 2022, Shireen Abu Akleh, a renowned journalist with Al Jazeera, was killed by Israeli forces in the West Bank, according to a United Nations inquiry into her death.

A portrait of Abu Akleh hanging on the facade of the building housing Al Jazeera's office was torn down during the raid, footage on Al Jazeera

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FROM PAGE ONE

NFL Comes To Land Of Soccer

Continued from Page One the rules.

But that didn't dampen the excitement, with some fans turning up at the stadium 10 hours before kickoff. Brazil joins England, Mexico, Canada and Germany as the only countries outside the U.S. to have hosted a regular-season NFL game, and the first in the Southern Hemisphere.

As night fell, the crowd got into the swing, Brazil style. Even before the Packers received the opening kickoff, the Brazilians had erupted into thunderous cheers.

Minutes later, the Eagles were called for a penalty and Brazilians fell back on another local tradition: merrily cursing in Portuguese at the referee.

'It was loud the entire time," A.J. Brown, wide receiver for the Eagles said after the game, which the Eagles eventually won 34-29.

"I don't know if São Paulo knows when to cheer," he said, grinning during a postgame press conference.

They don't. Brazil's popular Estadão newspaper published an article after the game, headlined: "Why NFL players were annoyed by Brazilian fans making so much noise."

Home teams—the Eagles in this case—are normally at an advantage as their fans keep quiet when they are on the attack so coaches can communicate with the quarterback via

radio, the newspaper explained, some six hours too late. It wasn't only the intricacies of the game that baffled some Brazilians, but also the thousands of Americans who had flown in to watch it, largely identifiable as the only people clapping in the stadium (Brazilians usually shout and cheer) or trying to order beer in Spanish.

In Brazil, known for its extravagant carnival dancers, NFL cheerleaders failed to impress everyone.

"Their rhythm was off,"

sniped Bruna Mesquita, who described the game as "the best experience of my life." Brazilians are a natural target for the NFL as it looks to

expand outside the U.S., largely for one reason: there are 203 million of them.

Though American football isn't mainstream in this country, the NFL estimates it has some 36 million fans here.

Brazil's best-known supermodel, Gisele Bündchen, did her part in 2009 by marrying a quarterback, known here as Giselo or "Gisele's husband." (Tom Brady to the rest of the world.) They divorced in 2022. Taylor Swift has since picked up the baton, dating Kansas City Chiefs tight end Travis Kelce and drumming up interest in the sport in Brazil, home to millions of Swifties, said Gustavo Pires, head of Sp-Turis, the government-owned events company in charge of tourism in the city.

Pires, who plays in Brazil's league, said he became obsessed with bringing an NFL game to the city after joining SPTuris in 2021. By 2023, the NFL had narrowed it down to São Paulo, Rio de Janeiro, Madrid and Barcelona.

"We started emailing them every 15 days," he said.

Scoring South America's first NFL game ahead of Rio was even sweeter.

Brazil's two biggest cities have long been locked in a rivalry, with São Paulo priding itself on being the country's hardworking business hub, while Rio flaunts its famous natural beauty.

"Sure, we may not have beaches, but São Paulo is going to host six Bruno Mars concerts," said Pires of São Paulo's efforts to lure tourists. "São Paulo is bigger than New York, São Paulo is bigger than Paris, São Paulo is diverse, São Paulo is for everyone."

Anthony Peabody, a Wisconsin exterminator, flew down to root for his Packers.

"Yeah, they should have had it in Rio, it's on the coast," he said.

However, Peabody—like many fans-praised the marble-floored stadium.

'The restrooms here are nicer than I've ever seen in any football stadium in the

United States!" he said. Fans were cautioned by U.S. tour groups against wearing green because of possible attacks from Corinthians soccer supporters, who have feuded with their green-shirted rivals, Palmeiras, for more than a

"I'll tell you, it's safer than what we were led to believe!"" said Jane Marnocha, a Green Bay fan dressed head-to-toe in green Packers merchandise. Friends and family also

warned her about forest fires, some 30 miles away. But the biggest risk, it turns out, was heartburn, she said.

"My God, I've never eaten so much steak."

Civil War Echoes Tear At Towns

Continued from Page One wears a bespoke gray Confederate uniform, leads a handful of counter protesters across the street every Saturday. The statue is, plain and simple, a memorial to the 47 soldiers from Chowan County who lost

"Some of my ancestors were Confederates," Dean, 72 years old.

state, he said.

In Dean's view, defending the statue is a stand against Marxists trying to rewrite history and "outsiders coming here stirring the pot," he said. Efforts to erase Confederate memorials are symptoms of America's moral decline, he said, along with more unwed mothers, disrespect for the law and "drag queens teaching reading to first-graders."

Phillips, 79, usually musters a slightly larger group. But Dean says the law is on his side, a point Phillips disputes.

A Republican-controlled North Carolina legislature in 2015 approved a statute protecting "objects of remembrance," a law since used to shield monuments that commemorate the four-year rebellion waged by the Confederate States of America.

In 2020, when protests over police violence against Black men and women spread around the U.S., the campaign to take down Confederate monuments in the South drew national attention. That year, statues were removed in Richmond. Va., the former Confederate capital, and in most of the 11 states that had seceded

from the U.S. In North Carolina, around 20 monuments were removed in a single month, some under the preservation law's publicsafety exemptions. Three were hauled from the grounds of the state capitol in Raleigh. "Monuments to white supremacy don't belong in places of allegiance," said North Carolina's Democratic Gov. Roy

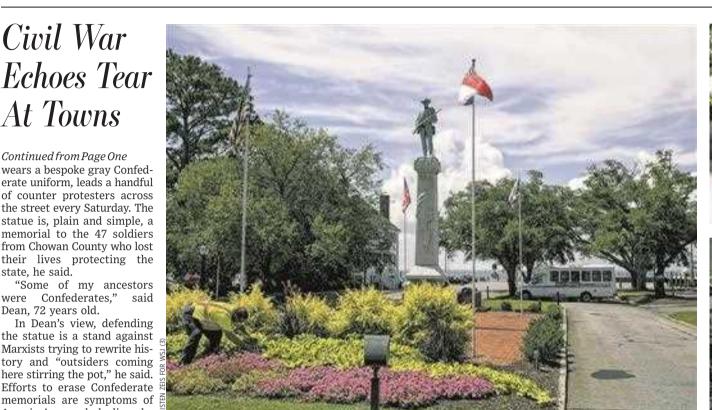
Cooper, who gave the order. Yet more than 70 remain in public spaces around the state, largely in small towns and rural communities where local residents, like Dean, refuse to surrender their Confederate landmarks, saying they are a piece of history worth saving.

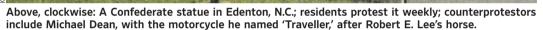
Similar fights are underway across the South, where hundreds of Confederate monuments and memorials remain.

"We've lost so much respect for our elders," said Dean, a retired engineering technician who serviced ATMs. "Saving these memorials and saving the memory of these soldiers who died defending their homes and families, that's part of that tradition, part of the country we don't want to see lost."

Local opponents have paid for billboard messages, including: We apologize for the Confederate statue. We're working

Edenton's 115-year-old bronze Confederate soldier, rifle in hand, stands atop a 19foot granite column in the heart of town and is visible for blocks. Last year, the town council voted to move the statue to a nearby park. But a judge issued a restraining order after the vote, in response to an emergency request from heritage-preservation groups, the Sons of Confeder-Veterans and United Daughters of the Confederacy.





The groups had earlier sued to keep the monument in place.

Dean, an area commander in the Sons of Confederate Veterans, said many of the Black people pained by the statue were "being told to be offended."

John Shannon, a 69-yearold church pastor who joins the Saturday protests led by Phillips, also favors moving the monument away from its high-profile locale at the shore of Albemarle Sound. Shannon, who is Black, said some passersby give the group a thumbs-up. Others are hostile.

Shannon recalled one man who pulled his car over: "He looked at me and said, 'Hey, little black boy. You need to go home, don't vou?

At a public meeting in June, Edenton Councilman Elton Bond said he worried

about the simmering tensions. "It's going to explode downtown," he said. "Some-

Change 'the world'

body's going to get hurt."

Most of the Civil War monuments and memorials, from Texas to Virginia, were erected from around 1890 through the 1920s. They include Confederate generals on horseback, soldiers on foot and other commemorations standing on public property.

Historians say these public monuments were intended to reinforce the belief, embraced by many white Southerners then and now, that the Confederates pursued a noble cause about states' rights, not preserving slavery. Most historians agree that protecting slavery was behind the Confederacy's creation, a position supported by numerous speeches and documents from Southern leaders of the pe-

Confederate monuments stand near county courthouses in roughly 30 of North Carolina's 100 counties, including Tyrrell County. That courthouse-located in the town of Columbia, N.C., population 600-has a 23-foot high monument, a Confederate soldier on a pedestal.

It includes the inscription, IN APPRECIATION OF OUR FAITHFUL SLAVES.'

Sherryreed Robinson, a 49year-old resident who serves on the local library board, said the notion that Black people served loyally and contentedly in bondage was absurd and offensive. "The courthouse and the justice system is for justice," she said. "To me, that statue represents inequality."

Robinson led a march to the courthouse in 2020 that kicked off what she and others believed would be a swift campaign to remove the statue, "changing the world, one statue at a time," she told supporters.

The monument, dedicated in 1902, remains. Robinson's group, Concerned Citizens of Tyrrell County, has urged moving it to a park. County officials say their hands are tied, citing the state's 2015 preservation law. In May, Robinson and three other resi-

dents filed a federal lawsuit, alleging that the county was engaged in racially discriminatory government speech by refusing to remove a monument with the phrase "faithful

slaves." In a court filing, lawyers for the county commissioners said the county wasn't protecting the monument "for any discriminatory purpose," but was prohibited from taking action by the state law. Local officials declined to comment or didn't respond to requests for comment.

One of the lawsuit's plaintiffs Joyce Sykes Fitch, 77, grew up in Tyrrell County and graduated from a segregated Black high school. She moved back to her hometown after living in New Jersey for more than five decades. On her return, Fitch said, she saw the monument with fresh eyes. "They think we were faithful? We wanted to be a slave?"

Since 2017, about three dozen Confederate monuments in North Carolina have been removed, according to an analysis of University of North Carolina data by The Wall Street Journal. A few were de-

Battles over

Confederate

monuments

persist across

the South.

stroyed by protesters. Many more were removed by local governments. A national poll released in

Washingtonbased Public Religion Research Institute found that

bv

the

June

American views about Confederate monuments split largely by race and political party, particularly in the South.

The poll found that 81% of Republicans nationwide were in favor of preserving the monuments compared with 30% of Democrats and a quarter of Black respondents. Together, that yielded 52% of respondents nationwide and 58% of Southerners in favor.

The North Carolina legisla-

ture passed the law a few weeks after the 2015 racially motivated killing of nine Black people who had gathered for a Bible study at a church in Charleston, S.C. The man, convicted of murder in 2016, posed online with a Confederate flag. The North Carolina preservation law had been in the works before the murders.

The South Carolina governor at the time, Republican Nikki Haley, called for a vote by state lawmakers to remove a Confederate battle flag flying at the capitol, saying many saw it as "a deeply offensive symbol of a brutally oppressive past."

Shared experience

A lone protester stood by the Confederate monument in Edenton on Juneteenth 2021 and started ringing a bell. It turned into a weekly ritual.

Phillips heard about the bell-ringer later that year and decided to spread the word. On Christmas Day 2021, Phillips and a handful of others

held their first protest. Dean said he and a couple of friends, also veterans, then began their weekly counterdemonstrations, calling themselves "Vets for Vets." They saw the statue as a memorial to Confederate soldiers, he said, not a monument to the

Confederacy.

REMOVE THIS

"We decided these people on the other side," Dean said, "they were only presenting one side. It was the wrong side." After about a year, a nearby chapter of the Sons of Confederate Veterans invited Dean and the others to join the group.

Dean and Phillips don't recall having any conversation between them. Despite their differences, the two men share similar backgrounds. Both grew up in the segregated South and became activists only in retirement, tethered to the same statue.

Phillips lived on a rented farm as a boy until his family moved to the town of Micro, N.C., which counted 458 resi-

dents in the 2020 census. His father took a job at the general store owned by Phillips's grandfather. The store served people of all races, Phillips said, and extended credit to customers for

months at a time. Dean tells of a similar neighborliness by his grandmother, who ran a country store in rural North Carolina. He grew up in Monroe, La., joined the Navy after high school and served for eight vears. He settled in Edenton. got a college degree and put in more than 37 years as a technical troubleshooter for

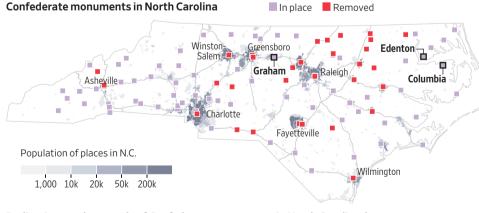
Phillips attended segregated all-white schools and graduated from the University of North Carolina. He did social work for a while before entering the sign-making business in Raleigh.

ATM-maker Diebold.

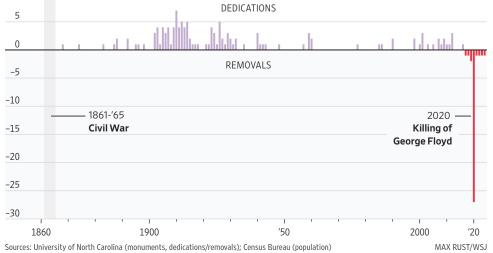
Phillips, who leaned left politically from a young age, steered clear of civic activism during his years in Raleigh, too busy with his business and other interests. But in Edenton, he said, "If you don't step up, there may be no one else that will do it."

Dean thought the same, and he has since helped establish a local chapter of the Sons of Confederate Veterans.

Local business owners have become wary of the weekly skirmish. They temporarily sidelined demonstrators during the summer: The owners snapped up town picketing permits at the statue in July for 11 a.m. to 1 p.m. "Residents are kind of tired of the little show that goes on down there," said restaurateur Joe Wach. The two sides showed up as usual on a recent Saturday with what seemed like war-weariness. "It's important that we keep up the pressure," Phillips said. "As long as the Marxists are there, we will be there," Dean said.



Dedications and removals of Confederate monuments in North Carolina, by year 10 monuments



Siebel Scholars Class of 2025

The Siebel Scholars program was founded in 2000 to recognize the most talented graduate students in business, computer science, and bioengineering. Each year, over 80 outstanding graduate students are selected as Siebel Scholars based on academic excellence and leadership and join an active, lifelong community among an ever-growing group of leaders. We are pleased to recognize this year's Siebel Scholars.

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Benjamin D. Killeen
Denis Routkevitch
Fangchi Shao

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STANFORD UNIVERSITY SCHOOL OF ENGINEERING

Chew Chai Andy YiHsuan Chen Taylor H. Nguyen Andrew Sho Perley Netra Unni Rajesh

UNIVERSITY OF CALIFORNIA, BERKELEY COLLEGE OF ENGINEERING

Claire Hilburger Eric Markley Sakshi Shah

UNIVERSITY OF CALIFORNIA, SAN DIEGO JACOBS SCHOOL OF ENGINEERING

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UNIVERSITY OF CHICAGO BOOTH SCHOOL OF BUSINESS

Yigit Akdemir Yana Kaplun Dongyu Mao Carolina Ortega-Londono Michelle Xuming Zhang

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HARVARD JOHN A. PAULSON SCHOOL OF ENGINEERING & APPLIED SCIENCES

Zana Buçinca Daniel Halpern Tao Lin Spandan Madan Sanket Shah

МІТ

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Robert Chen Ammar Ratnani Joe Tsai Zhiyu Xie Han (Paris) Zhang

TSINGHUA UNIVERSITY DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY

Qilin Chen Haitao Li Hao Liu Niqi Liu Zheyuan Zhang

UNIVERSITY OF CALIFORNIA, BERKELEY COLLEGE OF ENGINEERING

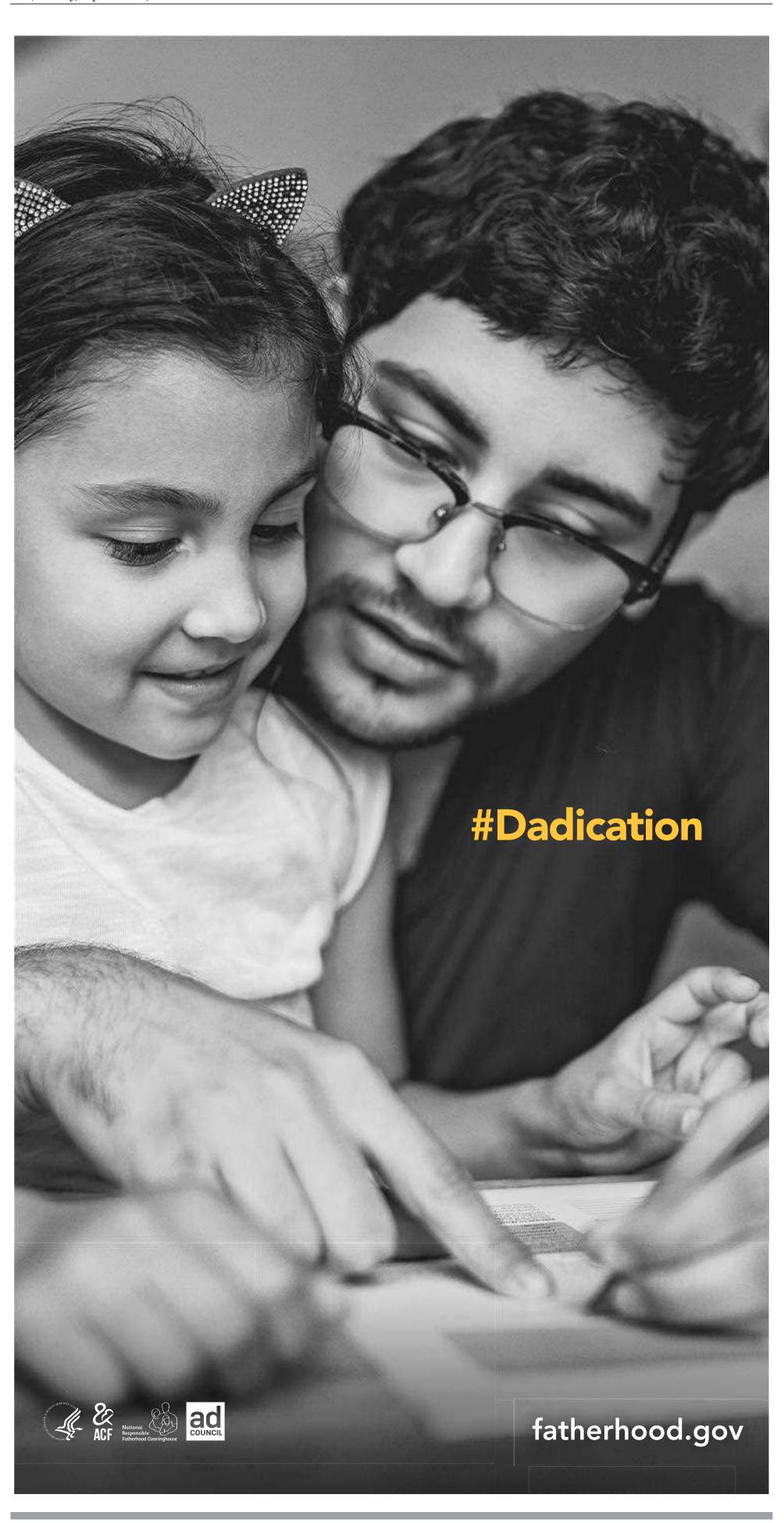
Cade Gordon Jessica Lin Oliver Yu

UNIVERSITY OF CHICAGO SCHOOL OF COMPUTER SCIENCE

Zewei Liao Michael Rosenbaum Brennan Schaffner Lennart Maximilian Seifert Shawn Shan

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN COLLEGE OF ENGINEERING

Tanay Dixit Hao-Yu Hsu Baoyu Li Ashutosh Sharma Alan Wang





What's Your BMI? Doctors Rethink Main Weight Metric

Critics note it doesn't distinguish between two types of fat or identify where our fat is located



HEALTH SUMATHI REDDY

t's the main calculation used to assess healthy body weight and helps determine eligibility for in-demand GLP-1 weight-loss drugs. It's also imprecise at best, misleading at worst, say doctors.

Body-mass index, commonly called BMI, is a ratio of height to weight that is used to classify people as being at a healthy weight, overweight or obese. One of its biggest flaws is that it doesn't distinguish between two types of fat-subcutaneous and visceralor identify where our fat is located. That information is essential to understanding not just your size but your health.

Visceral fat, which tends to be concentrated deep in the abdominal region around important interanal organs and leads to weight 🗟 gain around our belly, is the more concerning kind of fat. It influ-Eences our risk for developing g problems like elevated blood sugar and blood pressure, which in- $\stackrel{\cong}{\scriptscriptstyle{arepsilon}}$ crease the chances of heart disease and Type 2 diabetes. Subcutaneous fat, which is the fat you can pinch just under the skin, is less detrimental to your health.

BMI also doesn't distinguish between muscle and fat, or account for differences between people of different genders, races and ages.

"Just because someone is small doesn't mean they're healthy,' says Dr. Fatima Cody Stanford, an associate professor of medicine and pediatrics at Harvard Medical School and an obesity medicine physician at Massachusetts General Hospital Weight Center. "And just because someone is large doesn't mean they're not healthy."

The limits of BMI

BMI originated in the 1800s when a Belgian scientist used data from European males to come up with average body weights. In 1972 Ancel Keys, an American physiologist who studied diet's impact on health, evaluated the BMI and several other formulas and concluded that BMI was preferable, says Dr. George Bray, an obesity researcher and professor emeritus at Pennington Biomedical Research Center in Baton Rouge, La.

The metric was meant for population-level data, doctors and researchers say, as it is useful for



▲ Some ways of assessing weight health take waist circumference into account.

tracking obesity across large groups of people.

For individuals, though, BMI is more useful when looked at in combination with other health metrics, doctors say.

"It's a single number and no single number is going to encompass a person's total health situation," says Dr. Wajahat Mehal, a professor at Yale School of Medicine and director of the Yale Weight Loss Program. "People put too much emphasis on it.'

Other measurements

There are a few sophisticated, precise tests that can measure percentage of body fat and tell you how much visceral versus subcutaneous fat you have. Those tools in-

■ BMI is a ratio of height to weight that is used to classify whether you're at a healthy weight, overweight or obese.

clude MRIs and DEXA scans. But such tests aren't practical for wide use because they're expensive, and DEXA scans expose people to small amounts of radiation.

Some doctors' offices also have bioelectrical impedance scales, which measure body composition by sending a small electric current through the body. But their reliability varies, doctors say.

A better, more realistic way to assess weight health is to use a formula that takes waist circumference into account. That gives you a better sense of visceral fat levels, because it tends to accumulate in the abdominal region.

Some doctors have proposed using a ratio of waist-to-hip circumference as an alternative. That calculation may better predict metabolic health than BMI does, but its disadvantage is that it's hard to measure accurately, says Dr. Mitchell Lazar, director of the Institute for Diabetes, Obesity and Metabolism at the University of Pennsylvania.

A better way to measure obesity is a calculation commonly used in England, a ratio of waist circumference to height, says Bray. If that number is greater than 0.5, that means you have increased central fat and are at greater risk for health problems.

Some researchers have also proposed a so-called body roundness index, which takes waist circumference into account.

Racial differences

BMI's usefulness can vary depending on your race and gender, notes

Dr. Gitanjali Srivastava, a professor and co-director at the Vanderbilt Weight Loss Center in Nashville, Tenn.

For example, Asians are born with more visceral fat. As they age, they face risks for cardiometabolic diseases at a lower BMI threshold compared with people of other races, she says. "A South Asian adult who has a BMI of 25 is not equivalent to a BMI of 25 in a Caucasian counterpart of similar gender, sex, height and weight, because his or her [visceral fat] is significantly greater," says Srivastava, making their risk for heart disease and diabetes higher.

Women have about 10% more body fat than men but they have less visceral fat until they reach menopause. When women's estrogen levels drop during menopause, their visceral fat levels in crease and they tend to gain midsection weight, making their health risks equivalent to men's,

doctors say. "It's not just about how we look, it's about our health," says Stanford.

By Tom Corrigan

alifornia leads all states in providing social mobility to its college students, according to the 2025 Wall Street Journal/College Pulse rankings.

Fifteen of the 20 schools doing the most to help college students climb up the socioeconomic ladder are in California, including all of the top five. The University of California. Merced, which came in at No. 18 in the overall ranking for the best colleges, took the top spot, followed by four California State University campuses: Stanislaus, San Bernardino, Fresno and Los Angeles.

These Colleges Help Students Move On Up

These colleges and others at the top of the social-mobility ranking take in high proportions of low-income students and excel at improving those students' graduation rates

"It's a true point of pride for us," savs Brian O'Bruba, interim vice chancellor for student affairs at the University of California, Merced, where 63% of last year's incoming class were first-generation college

and their salaries later in life.

SOCIAL MOBILITY RANK	COLLEGE	SOCIAL MOBILITY SCORE
1	University of California, Merced	86.8
2	California State University, Stanislaus	82.1
3	California State University, San Bernardino	81.2
4	California State University, Fresno	80.4
5	California State University, Los Angeles	78.5
6	Florida International University	78.2
7	California State University, Long Beach	77
8	Baruch College, CUNY	76.8
9	California State University, Northridge	76
10	California State Polytechnic University, Pomona	75.8

TOP 10 COLLEGES FOR SOCIAL MOBILITY

Public colleges dominate the upper tier of the social-mobility ranking. Of the top 50 colleges for social mobility, 37 are public.

Two key questions

The Journal, working with data scientists at Statista, devised its ranking of the colleges contributing the most to social mobility using research by the Third Way policy-research think tank and the Brookings Institution. Two key questions are at the heart of the analysis: How much does a college improve its students' chances of graduating on time? And how much will it improve the salaries those students earn after they graduate?

The social-mobility ranking further considers the proportion of students who receive Pell Grants at each college, rewarding colleges that take in a high number of students from families with lower incomes.

At California State University, Fresno, where nearly 60% of students receive Pell Grants, tutoring is built into classes, like some chemistry courses, that the school knows are especially difficult for students to pass. "We have done mining of data that has given us next steps on where students are getting stumped," says Fresno State President Saúl Jiménez-Sandoval.

Jiménez-Sandoval says getting his students through the most difficult classes helps them to feel they belong and motivates them through

the rest of their college years. 'The students we receive at



▲ The University of California, Merced, heads 37 public colleges in the top 50 for boosting students' social mobility.

Fresno State come from humble backgrounds," he says.

Tomás D. Morales, president of California State University, San Bernardino, says targeted academicsupport services such as advising and mentoring are critical to helping students get over the finish line.

Keeping prices low Colleges that do well in the socialmobility ranking stay accessible to low-income students by keeping tuition costs low. The net price for No.

8-ranked Baruch College, CUNY, for

the 2021-22 academic year was \$3,644, the fourth-lowest of all 500 schools in our rankings.

Net price is the average annual overall cost of attending the college for students who receive federal financial aid, including tuition and fees, room and board, and books and supplies, taking into account any grants and scholarships. Baruch is one of only six schools in the ranking with an average net price under \$5,000.

To keep up with rising costs, the California State University Board of Trustees recently approved tuition increases at its 23 campuses. Many students won't be affected, because their tuition is fully covered by grants or waivers.

PERSONAL JOURNAL.

He's Making **Indie Rock** Big Again

Guitarist MJ Lenderman continues his solo career with a new album, sold-out shows

Rock critic Steven Hyden calls

Lenderman's 2023 live album "And

the Wind (Live and Loose!)" his

2020s. There's been so much fuss

freshing approach to slacker-rock,

"Most everything I've seen about

in fact, that he's felt the need to

me is generally positive, but even

whose real name is Mark Jacob,

though his friends call him Jake.

shirt (from the Mississippi Re-

that f- with me," says Lenderman,

In a Mississippi Wreckers T-

cords store in Portland, Ore.), with

his scraggly, shoulder-length hair

recently chopped shorter, Lender-

man seems even more boyish than

he normally does. He just relo-

thriving music scene, to Greens-

boro, N.C., a more populous city a

couple of hours away. Unlike gen-

erations of aspiring musicians,

from Jim Morrison to Chappell

cated from Asheville, with its

get "totally off the Internet."

lately over the songwriter's re-

favorite record of the entire

By NEIL SHAH

ext month, MJ Lenderman will perform three back-to-back, sold-out shows at Brooklyn's 650-capacity Music Hall of Williamsburg, an unusual feat for a young, upand-coming indie-rock artist.

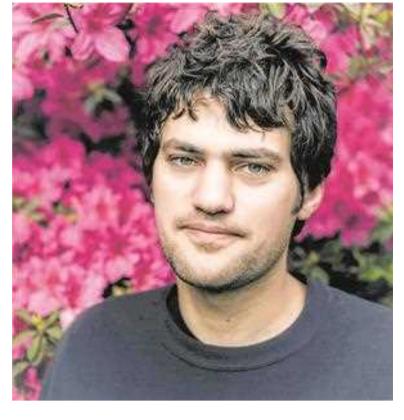
What's even rarer: There was enough demand for a fourth show. according to concert promoter the Bowery Presents—a sign that Lenderman is headed for bigger and better things in the music industry. There's just one thing: He kinda likes where he's at.

"I want to be financially stable, and I want to be able to make music—but I'm not really interested in getting bigger," the 25-year-old singer and guitarist says, tucked in a booth of the Manhattan restaurant Lafayette recently, nursing

a Kronenbourg.
In the world of indie rock, this is the year of MJ Lenderman: The Asheville, N.C., singer-songwriter has helped propel two of indie rock's recent success stories, Wednesday (of which he's a member) and Waxahatchee. Now he's causing a stir with his solo work, including his heavily anticipated fourth studio album "Manning Fireworks," which came out Sept. 6.

A guitar hero for a post-guitarhero age, Lenderman has a loose, countrified sound that filters Gen-X touchstones like Neil Young, Sonic Youth and Drive-By Truckers through the brain of a Gen-Z kid who salvaged the greatest hits of his dad's CD collection.

► MJ Lenderman has a loose, countrified sound.



Roan, who've moved to Hollywood from smaller places for fame and fortune. Lenderman doesn't want to leave his home state. Touring incessantly has made him appreciate North Carolina more.

"I never had any desire to go somewhere else," he says.

That hasn't stopped his music from being everywhere. His 2022 album "Boat Songs" landed on many critics' annual best-of lists. The music website Stereogum

▲ In the world of indie rock, this is the year of MJ Lenderman.

called Waxahatchee's "Tigers Blood" the best record of the first half of 2024, singling out Lenderman's "casually stunning" guitar solo on the standout cut, "Right Back to It." His guitar-playing with Wednesday helped make it "one of the best indie-rock bands around," per Pitchfork. That band's 2023 album "Rat Saw God" was considered among *last* year's best albums.

Lenderman writes clever, wry, sometimes poignant lyrics. A dab of existentialism opens the new album, for example ("birds against a heavy wind that wins in the end"). He has a soft spot for sports references (say, tackling Michael Jordan's performance during the 1997 N.B.A. finals on the 2022 song "Hangover Game") and a droll sense of humor, which often entails quoting parts of older songs like "Knockin' on Heaven's Door." (Lenderman admits he first heard "Heaven's Door" played by Guns N' Roses, not Bob Dylan.)

"Jake sort of represents this type of youthful integrity," says Katie Crutchfield, the Alabama singer-songwriter who records as Waxahatchee and first became familiar with Lenderman's music in 2022. "He's not trying to conjure up some kind of mythology about himself—it's all really authentic. That's rare in this moment where even the coolest or most talented artists are chronically online and overly self-aware."

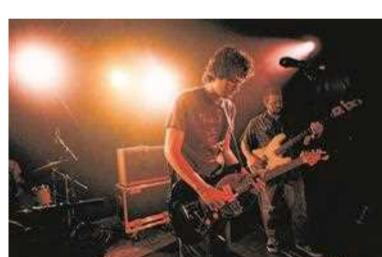
The chatter about Lenderman presents an intriguing question: If you're a charismatic guy who's breaking out with a relatively traditional take on indie rock, at a time when indie rock is lower-profile and dominated by plaintive female singer-songwriters, just how big are you even able to get?

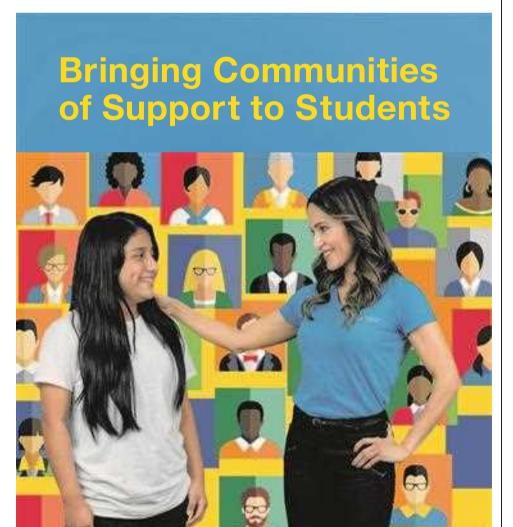
For acts in mainstream pop and hip-hop like Sabrina Carpenter, Chappell Roan and, before them, Olivia Rodrigo and Ice Spice, the sky's the limit. Heart-baring male singer-songwriters who pair well with Swiftian artists like Rodrigo—Noah Kahan, say, or Zach Bryan-are also in fashion. But, in 2024, despite his talent and accolades, it could be challenging for Lenderman, an unassuming, social-media-avoiding musician who the TikTok community and the Gen-Z pop-culture account Pop Crave probably don't care about, to become a household name.

Growing up in Asheville, Lenderman was the third child of four. He started playing guitar early, attended Drive-By Truckers shows with his dad and had a close-knit group of musically-inclined friends, including Karly Hartzman, the leader of Wednesday, whom he started dating. By his teens, he was putting out music under MJ Lenderman, eventually releasing albums while working in a local ice-cream shop.

It was 2022's "Boat Songs," which he made for only \$1,100 in an Asheville studio, that became his solo breakthrough, and led him

to sign with ANTI-, an indie label. This summer, he previewed a handful of tracks from "Manning Fireworks" at a listening event at Mercury Lounge on the Lower East Side of Manhattan. Hearing just him and a guitar, instead of full instrumentation, put in relief the sturdiness of the melodies that ₹ anchor his songs. The audience was enthusiastic, but he still acted as if he was just a guy off the street taking up our time.





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See how we go all in for kids at CommunitiesInSchools.org







Delta One Luxury Has Ups and Downs

By Dawn Gilbertson

aise your hand if you've been fortunate enough to fly in first or business class.

The cushy seats aren't typically in my work or personal travel budget. But I did get to fly in Delta One this month. The airline's business class cabin (and those at other airlines) is all over Instagram and TikTok. Influencers pose in their lieflat seats, covered in a brand-name comforter and branded eye masks for a dreamy overnight trip across the Atlantic.

My editors plunked down nearly \$1,300 for my oneway JFK-LAX flight in Delta One just so I could access the airline's first Delta One Lounge for this week's column. (We always pay our own way to get an unvarnished look.)

The lounge is the nicest I've ever been in. One traveler cracked to me, "So what's the catch? The high ticket prices?!"

The flight itself had some highs and lows. My hot

► The dedicated check-in lounge for Delta One pas-

sengers, away from the JFK

masses, is great. I didn't check a bag, but enjoyed the Vive wellness shots and a couple quick bites in the reception area before going through security to the lounge. You couldn't move without an employee offering to help.

► Boarding first was a nice perk, the pre-departure Prosecco welcome.

► A comforter, pillow, noisecancellation headphones and an amenity kit were waiting at my seat, 7D. The Grown Alchemist lip balm and hand cream in the amenities kit were keepers, but I've seen nicer spreads.

► I had high expectations for the Delta One seat. But I was on an older Delta plane (a Boeing 767-300ER) so the entertainment screen was small and the seat didn't have Delta's latest features. including those privacy doors. I didn't particularly need privacy, but had only seen those at a Delta booth at the 2020 CES show. Don't get me wrong, it was pretty cool to recline the seat all the

snoozed for an hour. ► The in-flight entertainment system was out for the first 2.5 hours of my flight. The attendants didn't

way back while I watched

"Dexter: New Blood" and

▲ Not pictured: the less souped-up Delta One seat that Dawn sat in.

seem to notice everyone's screen was out until a couple of us asked. It was reset three times and finally worked When I mentioned it to Delta via direct message on X after the flight (my preferred way of chatting with them) I was offered 1,500 miles. Yes, a measly 1,500 miles. They upped it to

2,500, also not great. ► I enjoyed Sarah Jessica Parker's Sauvignon Blanc but barely touched my pastrami short rib. That's because I was stuffed from the Delta One lounge and because that food was miles above airline food.

► I almost didn't get to fly Delta One. Airlines frequently swap aircraft. That's exactly what happened when I was eating lunch in the lounge. A new boarding pass appeared on my Delta app. It was for seat 21F, since the plane didn't have Delta One. That was not going to work. A very helpful Delta agent in the lounge moved me to a later flight that had Delta One-at no charge, of course. Pay attention to such things the day

Would I plunk my own money down for another cross-country flight in Delta One? Probably not.

of travel so you have time to

find a fix, if one is available.

ARTS IN REVIEW

By Lance Esplund

New York
very so often, the Metropolitan Museum of Art
not only reasserts but
redefines what it truly
means to operate as an
encyclope-

dic museum on the world stage. Such is the case with its striking exhibition "Mexican Prints at the Vanguard," organized by Mark McDonald, curator in the museum's department of drawings and prints. Who knew, for instance (besides Mr. McDonald), that the Met has been sitting for nearly eight decades on a superlative cache of some 2,000 Mexican illustrated books and prints (closer to 3,000 if you count individual sheets in bound albums)?

Almost all of those treasures (many of which have never been exhibited before) were either donated to the museum

by the artist and writer Jean Charlot (1898-1979) or were acquired by Charlot in Mexico, in the 1940s, on the Met's behalf. Born in Paris, Charlot lived and worked in France, the U.S. and Mexico, where, in the 1920s, he popularized and taught modern woodcut. which superseded lithography. Mr. McDonald has assembled 146 gems (books, posters, broadsheets, broadsides, cards, fliers and fine art prints), from roughly 1750 to 1950, for this predominantly inhouse show, which is as compelling for its breadth and art-historical revelations as for its aesthetic quality and graphic punch.

"Mexican Prints"—veering between high and low art—is dynamic, rich, rhythmically paced.
Mr. McDonald (like Charlot before him) recognizes that viewers feast first with their eyes—and often with their sense of hu-

mor. Check out satirical prints such as José Guadalupe Posada's type-metal engraving "Skeletons Riding Bicycles" (c. 1895), a broadside depicting feckless, mainstream newspaper journalists—as skeletons—competing on a racetrack. Or Julio Ruelas's etching "The Critic" (c. 1905-07), a self-portrait influenced by German Symbolism, which depicts a creature-equal parts vul-🗈 ture, rodent and mos-₹ quito—piercing ^{to} Ruelas's forehead with

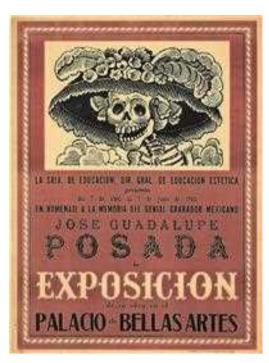
Installation view of G'Mexican Prints at the Wanguard.'

∄its fountain-pen-cum-

ART REVIEW

Following Mexico's Paper Trail

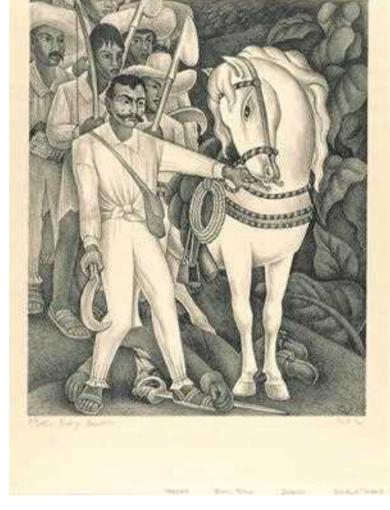
A revelatory show at the Met demonstrates the country's varied and vivid printmaking tradition



Poster for an exhibition of work by José Guadalupe Posada, above; Diego Rivera's 'Emiliano Zapata and His Horse' (1932), right.

proboscis. Or Charlot's raucous, Expressionistic woodcut "Rich People in Hell" (1924), in which an aristocratic couple—engulfed in flames and prodded by demons with pitchforks—dance a vaudevillian hot-foot.

Organized chronologically, "Mexican Prints" follows significant historical events—Mexican independence from Spain; American intervention; French occupation; the Mexican Revolution; Reconstruction; the rise and fall of Nazism and Fascism—as it also chronicles the aesthetic impact of modernism in Mexico. The show begins by acknowledging the coun-



try's earliest presses. Established by Spain in Mexico City in the mid-16th century, they produced primarily religious and devotional woodcuts and engravings, which would dominate until the mid-19th century, when artists favored lithography, social and political subjects, and unearthing their own country's history. Two intricate, gorgeous 18th-century prints—a thesis proclamation and a dedication to a religious and political figure, on shimmering white and pink

silk, respectively—represent mesmerizing pinnacles of Mexico's pre-modern era.

Here, also, is Diego Rivera's famous realist lithograph of the revolutionary hero "Emiliano Zapata and His Horse" (1932). And the exhibition includes prints by other luminaries, such as José Clemente Orozco, Rufino Tamayo, Xavier Guerrero and, of course, Posada (1852-1913). An engaging section is devoted to Posada and his contemporaries. And Posada's etching "La Calavera Catrina' Dapper [Female] Skull") (1913)-grinning under her broad, garish hat (and known

as Mexico's Jack-o'-lantern)— greets viewers in the hallway outside the exhibition proper.

Considered the progenitor of Mexican printmaking, Posada is also his nation's most celebrated printmaker. You know him, or at least his influence, even if you think you don't. Straddling fine and populist art, he drew on Hans Holbein's print series "The Dance of Death" (1523-25) and the satirical, social and political caricatures and lampoons by Francisco Goya and Honoré Daumier, as he prefigured the Grateful Dead's lightningbolt skull. His ubiquitous, jocular skeletons and calaveras (human skulls) continue to be the prime players in Mexico's annual Day of the Dead celebrations.

But "Mexican Prints" reveals that Posada, though major, is only a part of Mexico's printmaking story. The show's lifeblood is its democratic street art-posters, fliers, handbills, manifestos, newspapers and pamphlets—rare, fragile ephemera that fuse art with politics, social causes and native customs. The exhibition represents a staggering stylistic range: from David Alfaro Siqueiros's Art Deco woodcut "The Trinity of Scoundrels," made for the short-lived Communist newspaper "El Machete" in 1924, to Gabriel Fernández Ledesma's folk-art woodcut poster from 1929 advertising an exhibition of young Mexican artists, to a suite of beautiful, Bauhaus-influenced posters (some anonymous) from the 1930s, to Lola Cueto's aquatint etchings from the 1940s illustrating a book about Mexican puppets.

"Mexican Prints" demonstrates that Mexico, a veritable melting pot undergoing successive upheavals, welcomed and embraced new cultures (French, German, Italian, North American), technologies and ways of thinking and working, as well as diverse artistic influences: Romanticism, Expressionism, Cubism. Futurism, abstraction, Constructivism, Surrealism, Socialist Realism. But Mexican artists, staying true to themselves, ultimately remained indigenous-committed to exploring, cultivating and expressing their own cultural identity.

There is no catalog for "Mexican Prints." But this fascinating show and the accompanying Met Bulletin—available for the first time in both English and Spanish—bring an underknown and underappreciated chapter of Mexican art history to the global stage.

Mexican Prints at the Vanguard The Met Fifth Avenue, through Jan. 5, 2025

Mr. Esplund, the author of "The Art of Looking: How to Read Modern and Contemporary Art" (Hachette), writes about art for the Journal.



MUSIC REVIEW

Two Musicians' Vibrant Vibes

The vibraphone

has emerged

as an essential

instrument

in modern jazz.

By Martin Johnson

Some of the most revered jazz musicians are vibraphonists; monuments could and should be built to honor Lionel Hampton, Bobby Hutcherson, Milt Jackson and Cal Tjader, and one of the most respected albums of the '70s is "Crystal Silence" (ECM), a duet recording from pianist Chick Corea and vibist Gary Burton. Yet the vibraphone has largely remained a fringe instrument de-

fringe instrument despite its importance on many classic discs. And great contemporary players like Stefon Harris and Steve Nelson notwithstanding, the number of notable vibits following in the footsteps of these legends had never compared with the armies of up-and-comi

armies of up-and-coming young trumpeters, saxophonists, bassists, drummers and guitarists.

In the past several years, however, a wealth of young vibraphonists—including Sasha Berliner, Patricia Brennan, Chris Dingman, Simon Moullier, Joel Ross, Yushan Su, Juan Diego Villalobos and Warren Wolf—have emerged, and some leading drummers like Tomas Fujiwara and Ches Smith are now doubling on the instrument. This reflects wider jazz trends in the 21st century.

Rather than a succession of virtuoso solos, many songs are defined by complex ensemble passages filled with unique harmonies, innovative rhythms and unusual instrumentation. In this context, the rhythmic versatility and ringing tones of the vibraphone have become essential; it's an instrument that can blend the sonorities and shifting functions within a band. Ms. Brennan and Mr. Moullier have new recordings that illustrate

these capacities in

exciting new ways.

"Growing up in
Veracruz, Mexico, one
of my earliest musical memories was
watching the local
marimba bands," Ms.
Brennan told me in a
2023 interview. "It
was always exciting
to watch two or
three people with

multiple mallets play this instrument and make it sound like a full band." Her new recording, "Breaking Stretch" (Pyroclastic, out now), draws on those influences, as well as others from her youth—such as the horn-driven popular music of Blood, Sweat & Tears; Chicago; and Earth, Wind & Fire. She has added three horn players—saxophonists Jon Irabagon and Mark Shim plus trumpeter Adam O'Farrill—to the lithe, subtly rhythmic ensemble showcased on her acclaimed 2022



release, "More Touch," which featured bassist Kim Cass, drummer Marcus Gilmore and percussionist Mauricio Herrera.

The results are scintillating. Ms. Brennan's septet plays with an impassioned urgency on uptempo tunes like "Los Otros Yo (The Other Selves)," "Palo de Oros (Suit of Coins)," and especially "Five Suns" and "Manufacturers Trust Company Building," which resemble an artful soundtrack to the scenes at the climax of a crime thriller. The softer tracks deftly layer horn lines with percolating bass lines, shimmering drum licks and additional percussion. Throughout, Ms. Brennan, who just turned 40 years old, takes stunning solos that add intensity to the faster tracks and delicacy to the slower ones.

Like Ms. Brennan, Mr. Moullier, who is 30, was born and raised abroad. A native of Nantes, France, he was a drummer who turned to vibes when he was 17 and attended a five-week summer camp at the ▲ Patricia Brennan's septet; the group's new album is 'Breaking Stretch' (Pyroclastic).

Berklee College of Music in Boston. Mr. Moullier returned to the conservatory for undergraduate work and earned a master's degree at the Hancock Institute of Jazz in Los Angeles. He was increasingly drawn to the fluid sounds of horns, and it's evident in his elegant sound. At times on his early recordings, he seems to be quoting and varying saxophone lines from classic repertoire.

On his latest, "Elements of Light" (Candid, out now), he builds on this foundation by adding electronic elements. For instance, on the first track, "808," he seamlessly melds electronic percussion (which is part of the inspiration for the title) with that of drummer Jongkuk Kim. On the title track, pianist Gerald Clayton guests in a unique piano, vibes and drums trio with synthesizer added in post-production. On Wayne

Shorter's "Oriental Folk Song," bassist Rick Rosato and Mr. Moullier create sumptuous harmonies. Ultimately, though, "Elements of Light" presents an artist still exploring an impressive range of ideas that only begin to cohere

into a singular vision.

Within this emerging panoply of vibraphonists, Ms. Brennan and Mr.

Moullier offer contrasting styles on their instruments. She is very rhythmically precise, and her music both on the new recording and on her previous albums focused on percussive elements. Mr.

Moullier has said in inter-

views that he was attracted to the melodic possibilities of his instrument. Each is contributing to an impressive diversity of approaches that range from Mr. Ross's soulful harmonies to Ms. Berliner's cuttingedge rhythms.

But the best proof of the vibraphone's emergence may have come from a saxophonist. Last November. Ben Wendel presented "BaRcoDe," a concert-length work commissioned by the Jazz Gallery in New York. He created a band with himself and four vibraphonists: Ms. Brennan and Messrs. Moullier, Ross and Villalobos. The results, especially the subtle rhythms and vibrant ensemble colors, were often mesmerizing. Afterward, he told me that he was attracted to the idea by the multitude of great vibraphonists on the scene, and the concert made him wish that he could tour with a band that featured such sounds.

Mr. Johnson writes about jazz for the Journal.

SPORTS

A Season Filled With Twists

Formula One was bracing for another year of dominance by Max Verstappen and Red Bull. Instead, the field is deeper than it has been in recent years with seven different race winners.



McLaren's Lando Norris is making a strong charge for the Formula One drivers' title. On Sunday, the 24-year-old Briton won the Singapore Grand Prix.

By Joshua Robinson

Singapore

Charles Leclerc is one of only two men on the planet who gets to race a Ferrari Formula One car for a living—200 miles per hour, 24 weekends a year—and even he was convinced that this season would be boring.

All he had to do was look down the paddock. Red Bull's car had been utterly dominant in 2023. Three-time world champion Max Verstappen had won 19 of the 22 races, and rolled that form straight into 2024. No matter how much money everyone else plowed into upgrading their technology, they were still playing catch-up.

"We all thought after the first two, three races that Red Bull would walk away with the title, the way they did last year," Leclerc said.

Instead, this season has taken more sudden twists than a driver with a blindfold. Red Bull has hit

the skids, McLaren has emerged as a contender, Mercedes experienced a brief revival, Ferrari is fast again, and Grands Prix have turned back into wide open, can'tmiss free-for-alls. The year that was supposed to deliver a string of dull processions has produced seven different race winners-the most in a single campaign since 2012. The latest was McLaren's Lando Norris, who tore away from Verstappen to claim victory on Sunday in Singapore.

"We are really in a pack," Ferrari team principal Frederic Vasseur said here, with six of the 24 races remaining. "I don't remember when it was so tight in F1."

All that on-track action has come with a healthy side of offtrack lunacy. Two different teams have had to draft in rookies as emergency replacements. Ferrari's Carlos Sainz had an appendectomy and came back to win a Grand Prix less than three weeks later. A practice session in Singapore was

interrupted by an enormous lizard crawling across the track. And drivers have lately been up against a bizarre crackdown on their foul language.

Yet for the first few months, it looked as though all that excitement would be confined to a fight for second place. Verstappen won five of the first seven races and all was proceeding according to plan. But a sudden decline since the summer break combined with sweeping changes behind the scenes of Red Bull have made everything a little ragged for the sport's all-conquering outfit.

Legendary F1 designer Adrian Newey and sporting director Jonathan Wheatley are both due to leave for other teams by next season. And the 2024 car hasn't performed as reliably as its predecessors on some of the calendar's more challenging street circuits.

Verstappen, a hothead who appeared to have mellowed in recent years, hasn't been shy about letting his team know. He was so disappointed after the Azerbaijan Grand Prix that he declared in Singapore that he "knew the car was f-ed." (That burst of obscenity earned Verstappen a reprimand from motorsport's world governing body.)

But Red Bull's loss has been the rest of Formula One's gain.

Leclerc won on Ferrari's home turf in Monza. Seven-time world champion Lewis Hamilton ended a 2.5-year dry spell with victory at Silverstone—and then picked up another win in Belgium for good measure. Somehow Verstappen hasn't won a race since late June.

In fact, the past nine Grands Prix have been won by six different drivers, blowing open the race for both available championships. Norris, a 24-year-old Briton, has given himself a chance to reel in Verstappen for the drivers' title. And together with 23-year-old teammate Oscar Piastri, he has put McLaren ahead of Red Bull in

the constructors' standings.

"The competition has improved quite a bit," Verstappen said. "We need to find a bit more performance and make our lives a bit easier."

The natural state of F1 is to bounce from dynasty to dynasty. Every few years, the organizers make wholesale changes to the rulebook, radically altering the cars' specifications. Whichever team does the best job of cracking the code tends to steal a march on the field and everyone else spends the next few years chasing them. It's how Red Bull took back-toback constructors' titles in 2022 and 2023. And it was how Mercedes dominated much of the

None of that prevented the sport's Netflix-and-social-mediafueled revival in recent years. The 'Drive to Survive" series sparked interest in teams and drivers up and down the paddock, regardless of results. The club of 20 F1 drivers all harnessed their inner influencers.

But in order for F1 to stay relevant, organizers knew that there was one thing no reality show or viral TikTok could ever replace: tense qualifying, and flat-out, wheel-to-wheel racing.

"It's so competitive right now at the front," Mercedes driver George Russell said.

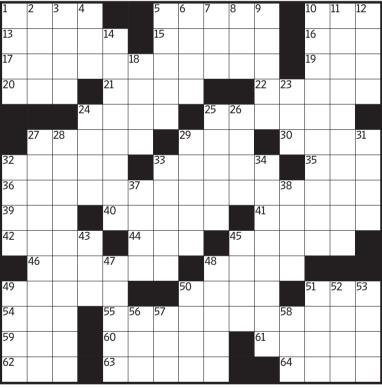
Nothing makes that clearer than the number of tight finishes. Back when Verstappen was stomping the field in 2023, his average margin of victory across 19 victories was 13.4 seconds. This season, heading into Singapore, drivers had cut that by more than 40% to 7.6 seconds.

And recently, it had been getting even closer. Over the first 10 races of the year, drivers (mostly Verstappen) were winning by an average of 8.6 seconds. But between Verstappen's last victory, eight Grands Prix ago, and the field touching down here, the margin was just 6.1. That's why Sunday will go down as one of the most surprising results of the year. The margin of victory was 20.9 seconds—and Verstappen was on the wrong end of it.

No one in F1 had seen it coming at the start of the season. Which is also why no one in F1 wants to guess how this one ends.

"It makes no sense," Vasseur said, "to imagine how the picture could be in two or three months."

The WSJ Daily Crossword | Edited by Mike Shenk



STOCKHOLDERS | By Mike Shenk

Across

- 1 Theater showing
- 5 URL separator
- 10 Supplied with nourishment 13 Prolific author
- 15 Ankle-to-knee bone

Asimov

- 16 Slippery,
- perhaps 17 *Candy disks with flavors
- includina clove, licorice and chocolate
- 19 Opposite of
- 20 Item in a super's set
- 21 Sticky mud
- 22 "___ there
- yet?" 24 Mailed
- 25 Where
- Canada's
- meets

- 27 Got to one's

- narliament

- 29 Intel gatherer 30 Flower bed
- makeup
 - 32 Laundry problem 33 Where Egypt's
 - meets 35 Beginning for

parliament

- cycle or plane 36 *National control of an
- industry 39 A quarter
 - of M

45 Derisive look

fledglings

49 Do a pirouette

50 Penn of "Milk"

54 Charged atom

51 Atlas page

46 Hooting

48 Durable

timber

- 40 "Seriously?"
- 41 Trade show 1 Squealer
 - presentations
- 42 Highest trumps
- 2 "Ah, got it" 3 Like some
- teddies 44 ___ Diego 4 Apple Store
 - buy 5 Kick off

parts, and a

hint to the

starred

answers

59 Green Day

Cool

60 Figure of

61 Moves

62 Approves

64 Sail's staff

drummer_

cautiously

63 Scars on cars

- 6 Long sentence,
- of a sort 7 1860s
- Washington nickname 8 Title for
- Tristan ▶ Solve this puzzle online and discuss it at WSJ.com/Puzzles.

- product, in Britain 27 *Cinder block
 - covering, sometimes 28 Potables

with a low

26 Bridgestone

- alcohol percentage 29 Admitted at
- the door
- 31 Part of a waiter's income
- 32 Org. promoting
- adoptions 33 Some soft drinks
- 34 Military weapons and equipment
- 37 Tag number 38 Go after
- camera type 45 Pants part
- 9 Attacks with 47 Hero of Spain 48 League

members

legend

Puente

native

51 Plateau's kin

with a shield

52 Greek god

53 "Hey you!"

here' 49 Mambo 11 *Activist with an 50 Edinburgh

objections

- environmental crusade 12 Unit of force
- 14 Reply to a knock

10 "No

- 18 Kite lifter 23 "Gnarly!"
- 24 Flower bed
- 25 Suggest
- 56 Lyric verse 57 Take the title makeup 58 Denver omelet chunk **Previous Puzzle's Solution**

T	Ε	Χ	Т		Κ	0	F	Τ		S	Α	Т	Α	Τ
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R	Α	Ν	Τ	Т	В	Α	C	Κ		Α	S	0	Ν	Ε
S	N	0		Α	L	L	1		S	Т	0	L	Ε	Ν
Ε	S	Р	Α	N	Α			S	0	U	R			
		Н	Τ	Κ	Τ	Ν	G	Т	Н	Ε	В	Α	L	L
S	L	Τ	M	S		Ε	U	R	0	S		N	Ε	Ε
Α	Ι	L	S		S	W	Ε	Α	Τ		Α	Т	0	Ν
U	N	-		В	Ε	Α	S	Т		S	┙	Α	Ζ	Т
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Α	Ĺ	0	N	G		G	R	R	R		Μ	С	Α	T
Λ Λ	1	2	C	V		ш	Λ	11	2			Λ	ם	V

The contest answer is **MVPS**. Change one letter in each word of a theme answer to get a member of an NFL team: RAN/RA**M**, HIKING VIKING, SACKER/PACKER, PAINT/SAINT.

A Tough Year for Florida Teams

By Jared Diamond AND LAINE HIGGINS

Florida State was so furious it was left out of college football's playoff last season that the school sued the Atlantic Coast Conference

mere weeks after the snub. Now, the first institution ever to bring a lawsuit on the grounds of feeling disrespected was lucky to escape with a win over...California, the exact opposite of a col-

lege football powerhouse. The situation isn't much better in Gainesville. Florida, the program of Steve Spurrier and Urban Meyer. has been such a debacle so far this year that the biggest question has been when the Gators will fire

their coach, not if. It's a shocking development for one of the most football-crazed regions in the country: The two most prominent and historically dominant teams in Florida have completely fallen apart, raising questions about how the football forecast in Sunshine State has suddenly become so stormy.

What has happened in Tallahassee is particularly stunning. Florida State went 13-0 in the regular season and appeared poised to compete for a national championship. Then quarterback Jordan Travis broke his leg, allowing the selection committee to take the unprecedented step of leaving the undefeated Seminoles out in favor of two one-loss teams.

Since then, Florida State has completely collapsed. The Seminoles began the 2024 campaign by flying to Ireland—only to fall in embarrassing fashion to Georgia Tech. That was followed by disastrous losses at home to Boston College and Memphis, making them the first team to start 0-3 after an unbeaten regular season since Arizona State in 1976. It took until Saturday for Florida State to finally eke out a 14-9 victory over Cal.

What's worse is that there's not much Florida State can do to turn things around. Amid speculation that coach Mike Norvell was in the running to replace Nick Saban last January, the university gave him a significant raise, meaning it would cost tens of millions of dollars to replace Norvell anytime soon.

On Saturday, Saban criticized Florida State for trying to repair its broken roster by relying heavily on the transfer portal instead of homegrown talent.

"They've always taken the 'microwave fix,'" Saban said on ESPN's "College

GameDav. Florida, meanwhile, has continued a steady decline that dates back to Meyer's departure after the 2010 season. Since then, the Gators have had four coaches. None has lasted more than four years. At this point, it seems all but certain that Billy Napier will suffer the

same fate. The Gators were blown out by Miami in Week 1 and lost badly to Texas A&M two weeks later. Florida kept Napier on board for Saturday's contest against Mississippi State, which the Gators won, 45-28. So Napier will survive for nowbut probably not for long.

All of this means that football fans in Florida have had to look in a surprising place to see what success on the field looks like. With a 50-15 beatdown of South Florida on Saturday, Miami moved to 4-0.



Florida State lost their first three games this season before a 14-9 win over Cal on Saturday.

OPINION

Section 230 Catches Up to AI



By Andy Kessler

wasn't sold by January 2025. TikTok owner ByteDance refuses to sell and sued. At a U.S. Circuit Court of Appeals for the District of Columbia hearing last week, Judge Douglas Ginsburg, asked, "Why is this any different, from a constitutional point of view, than the statute

decided

TikTok

last April if it

of a broadcasting license?" Why indeed. Broadcasters are publishers. Is TikTok?

precluding foreign ownership

Social-media companies flourished under the protection of Section 230 of the Communications Decency Act of 1996, which states: "No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider." In other words, anyone hosting content on a server or platform can't be sued by others for that content.

But we're a long way from 1996. Online service Prodigyremember it?-lost a 1995 defamation suit brought by bucket-shop brokerage Stratton Oakmont, which sparked passage of Section 230. Remember, no one even had a BlackBerry back then, Now, al-

gorithms and artificial intellitoast? Fearing gence, not humans, decide what's on our feeds. TikTok's FYP or "For You Page" algorithm uses AI to serve up videos. The \$200 billion question is: Does using AI or algorithms make you a publisher?

> And so does the Third Circuit. On her TikTok "For You Page," 10-year-old Nylah Anderson was shown a "Blackout Challenge" video encouraging the recording of self-asphyxiation. She hanged herself. Her mother sued and the case wound its way to the appeals court, which noted that Tik-Tok's FYP algorithm "is not immunized by Section 230 because the algorithm is TikTok's own expressive activity." The court did suggest a person searching for videos would fall under Section 230. Humans post, AI publishes.

> Social-media companies are allowed to moderate content, removing or leaving up anything they want. The U.S. Supreme Court further estaba First lished this as Amendment right in *Moody v*. NetChoice (2024). But because these algorithms are now an "expressive activity," the companies are publishers and not protected from liability from third-party content under Section 230.

This changes everything. Last year I suggested we needed a Section 230.ai. I think we got it, an implicit word "human" added, meaning plat-forms won't be treated as a publisher of "information provided by another human information content provider." Congress should codify this.

It's a new world. Large language models churn out speech by the mile. Chatbots hallucinate and write strange things, spewing statements they think are true but are false-like many politicians. Both OpenAI and Microsoft have been sued for defamation for their chatbot's output.

An appellate court holds companies liable for the actions of their algorithms.

Congress and courts should label generative AI companies as publishers, which they are, with all the ensuing copyright and liability issues. They will fight it tooth and nail, but let's call a bot a bot-they don't host, they publish.

Sen. Tom Cotton (R., Ark.), a member of the Intelligence Committee who has seen more than most, told Fox News, "TikTok is a tool of Chinese Communist propaganda." That "expressive activity" is a long way from "human information content publisher." Let's treat them this way as publishers. Russian bots feeding us lies aren't human either. We need laws structured to shut them

Facebook, Instagram, Snap-

chat and X may have to change how they operate—how their algorithms and AI fill our feeds. Good. Their outputs are messy anyway, filled with useless ads and other garbage. To maintain their protections under an implicit or explicit Section 230.ai, they need to clean up their act, enabling a more human touch to what we see, with less reliance on algorithms or bots.

Under Moody v. NetChoice, these privately owned and operated platforms can still apply "community standards" to moderate content and take down whatever they want. Don't like it? Start your own platform. Sadly, whether government can pressure social-media companies to censor is still an open issue. For lack of standing, the Supreme Court recently tossed a lawsuit trying to limit such interference.

Thirty years is a long time in Techworld. The norm of the mid-1990s was big clunky monitors, 28K dial-up modems and America Online. With no clue about smartphones or 5G, legislation written then inadvertently spawned the digital world we know today, good and bad. This time, legislators should think hard about a future world of chatbots and machine-learning algorithms, with laws that affect billions of digitally connected users. I can easily imagine an AI bot defaming whoever it wants to or, gulp, whoever dares speak

against it. Write to kessler@wsj.com.

Chevron's lobbyists have

BOOKSHELF | By John Bolton

Losing the Deterrence Game

Midnight in Moscow

By John J. Sullivan Little, Brown, 416 pages, \$32.50

MIDNIGHT

or more than a century, U.S. diplomats in Russia have had to fend off propaganda, outright lies, harassment and seduction, often simultaneously. Our envoys have been gulled into damaging concessions, and their Washington bosses have proved just as susceptible. Recall Franklin Roosevelt's appalling observation about Joseph Stalin: "I think if I give him everything that I possibly can and ask nothing from him in return, noblesse oblige, he won't try to annex anything and will work for a world of democracy and peace." Incredibly, Roosevelt's mindset, with variations, persists in many contemporary American leaders.

John J. Sullivan worked for two such presidents, first as deputy secretary of state from May 2017 to December 2019,

and as U.S. ambassador to Russia from then until September 2022. In "Midnight in Moscow," Mr. Sullivan describes what it was like. Mr. Sullivan focuses on the events before, during and after

Russia's Feb. 24, 2022, invasion of Ukraine, but he covers considerable additional territory. His legal career and experience under prior Republican presidents made him a natural for deputy secretary. Mike Pompeo, as the new secretary of state, kept him on after Rex Tillerson was unceremoniously purged by President Trump in March 2018. Mr.

Trump. if he wins in November, may find Mr. Sullivan too experienced, grounded and loyal to the Constitution to serve in a second term. His is a cautionary tale for those thinking about joining a Trump administration redivivus.

Mr. Sullivan describes Mr. Trump's "chaotic and undisciplined style," as when he fired Mr. Tillerson via tweet—an episode that captured the tumult that made Mr. Tillerson, among others, "completely miscast for his role—any role—in an administration [so] undisciplined and unconventional." Mr. Trump "would not or could not draw a distinction between his own interests and those of the country he was leading," Mr. Sullivan concludes.

He was dispatched to Moscow without the traditional photograph with the president. Mr. Sullivan never spoke with him thereafter—not even to have a courtesy meeting before the ambassador's departure: another reminder of Mr. Trump's limited comprehension of running a government, especially in na-

President Biden kept the ambassador in place. Mr. Sullivan paints a telling picture of State Department operations. especially the unglamorous but critical job of keeping Embassy Moscow functioning in a hostile environment, exacerbated further by the Covid-19 pandemic.

Outside their embassies, our ambassadors have responsibilities for Americans living or visiting their respective countries. They strive, for example, to ensure that U.S. citizens arrested, legitimately or otherwise, receive fair, humane treatment. The Kremlin's use of innocents abroad as human pawns greatly complicated that effort. Mr. Biden explicitly embraced outright hostage swapping (with Russia, Iran and others), significantly departing from Ronald Reagan's opposition to trading guiltless victims for criminals or spies. Mr. Trump has recently pilloried swaps for well-known victims, like WNBA star Brittney Griner, but Mr. Sullivan reveals that the Trump administration attempted exactly that in 2020, unsuccessfully offering to trade convicted Russian criminals for Paul Whelan and Trevor Reed, two Americans held in Russian prisons, since released.

Describing Mr. Biden's actions prior to Russia's invasion of Ukraine, Mr. Sullivan shows that the president's minimal emphasis on deterring Moscow contributed to Vladimir Putin's confidence that he could succeed. At Mr. Biden's June 2021 Geneva summit with Mr. Putin, Ukraine barely came up. Nor did it often arise at lower levels in the following four months,

When Vladimir Putin amassed an army on the border of Ukraine, the U.S. warned against an invasion. What reason did he have to listen?

further confirming to Moscow that Mr. Biden gave it low priority. Watching "the calamitous and tragic American withdrawal from Afghanistan," the Kremlin "drew a direct connection to Ukraine," Mr. Sullivan writes. Nikolai Patrushev, Moscow's then-counterpart to our national security advisor, predicted that Ukraine, like Afghanistan, "would be left to 'the whim of fate.' " Mr. Sullivan found the Afghanistan pullout the only point at which even ordinary Russians expressed "to me personally their contempt for the United States."

The Biden administration, then and now, seemed completely unaware that its behavior was encouraging the Kremlin to believe that a second invasion of Ukraine would produce the same response as Barack Obama's after Russia attacked the Donbas region and annexed Crimea in 2014—essentially no response at all. At least from Embassy Moscow's perspective, there is little evidence that Mr. Biden's policy makers were thinking hard about deterring a renewed Russian assault.

On Oct. 25, 2021, Mr. Sullivan, then in Washington, attended an intelligence-community briefing at the National Security Council, stressing that Russia was "undertaking a massive aggregation of forces" on its Ukraine border, preparing to invade. This news "changed everything in my life," he writes. He was "struck...that the information had come together so quickly." The week before, he had "met with the senior U.S. military leadership in Europe, and no one had raised an alarm about an imminent invasion of Ukraine by Russia.'

Eventually, when Russia's intention became obvious, Mr. Biden sent CIA Director Bill Burns to Moscow to tell Mr. Putin that our response to an invasion would be "devastating." But the Russian leader had seen Washington's feckless response to his aggression in 2014 and the incompetent Afghanistan withdrawal in 2021. Why should he have listened?

Mr. Biden's subsequent public releases of intelligence, touted as an administration success, obviously failed to make a difference in Mr. Putin's calculations. Moreover, U.S. intelligence badly underestimated Kyiv's resolve and capacity to resist Moscow's assault, which led to Mr. Biden's unwillingness to provide additional lethal support to Ukraine before the invasion began.

Mr. Sullivan has made an important contribution to understanding what transpired in Washington and the Kremlin concerning Russia's unprovoked 2022 aggression, and what might have been done differently. Unfortunately, it's still midnight in Moscow.

Mr. Bolton, a former U.S. ambassador to the United Nations, served as national security adviser from April 2018 to September 2019.

Venezuela Takes Americans Hostage



Bv Marv Anastasia O'Grady

ago the U.S. returned alleged money launderer Alex Saab to Venezuela in exchange for detained Americans, a

Nine months

didn't

long.

fugitive from U.S. justice, and a virtual pinky-swear from Nicolás Maduro not to take any more American hostages. Last week the Venezuelan dictator went back on his word.

Venezuela's arrest of three Americans—including an active-duty U.S. serviceman—is a sobering development for the Biden administration. U.S. officials expressed hope in December that the ex-American hostages was a zuelan normalcy. But the Manew fight, alleging without that the three Americans were part of a U.S. plot to overthrow it. Venezuela also nabbed two Spaniards and a Czech and claims to have discovered a cache of rifles.

The latest detentions come on the heels of the July 28 presidential election that Mr. Maduro lost badly (67% to 30%) to opposition candidate Edmundo González Urrutia. The regime refuses to accept defeat. It has unleashed a crackdown that even a U.N. human-rights fact-finding mission has condemned. The exiled Mr.

González to Spain last week with the help of the Socialist Spanish government. The Venezuelan nongovernmental organization Foro Penal says Caracas holds 1,834 political

This is predictable in a military dictatorship allied with Russia, Cuba, China and Iran, It's also humiliating for the Biden administration, which has repeatedly trusted the criminal government on the delusional premise that Mr. Maduro and his friends are interested in a return to democratic capitalism.

It's not too late for the administration to recover its dignity. Mr. Maduro benefits from the fact that the U.S. president is checked out and his underlings prefer to lay low during his final months change of Mr. Saab for the in office. But Vice President Kamala Harris has skin in the step toward restoring Vene- game. More than 40% of Venezuelans polled in August reduro regime has picked a ported their intentions to flee the country if Mr. Maduro isn't removed from power, and those migration flows are destabilizing the entire region. Failure to combat the "roots" of the crisis is part of her legacy.

One big Biden mistake has been failing to deny the regime the hard currency it needs for the military by applying U.S. oil sanctions where they could make a difference. Instead, by the end of this year, Chevron is expected to be exporting from Venezuela some 200,000 barrels a day, or some 25% of Venezuelan output. That's a drop in the global oil-supply bucket of 103

million barrels a day, so it won't affect fuel prices in the U.S. But according to Luis Pacheco, a nonresident fellow at the Baker Institute in Houston, over the next 15 months, at present prices, Chevron's exports could provide some \$1.7 billion to the dictatorship.

Other big American players like Conoco and Exxon-Mobil left Venezuela around 2006 after the government raised royalties and later

Yet Biden still lets Chevron sell oil that enriches the Maduro dictatorship.

forced foreign companies to become minority owners in joint ventures with the stateowned oil company, PdVSA. Chevron staved and has become an important partner of the regime.

When oil prices collapsed in 2014, PdVSA had trouble keeping up its majority-partner obligations for operations in the joint ventures. It turned to Chevron for help and the American company accepted the request, eventually lending PdVSA billions of

This wasn't a gift. Chevron intends to recover the money by producing and exporting Venezuelan oil. President Trump put the kibosh on that with sanctions prohibiting American investment in Venezuela and the U.S. import of Venezuelan oil.

done better with Team Biden. In 2022 the Treasury issued General License 41 to allow Chevron to ramp up operations in the South American country and sell to the U.S. Treasury also issued General License 8, allowing several oil-service companies to operate in Venezuela. The administration said it was rewarding the regime for its part in negotiations-held in Mexico-aimed at restoring Venezuelan democracy.

In October 2023, after Venezuela signed an agreement with members of the opposition to hold a presidential election in 2024, Treasury rushed to issue General License 44, available to any oil company, to do business with PdVSA.

Mr. Biden got burned again within months, when Mr. Maduro banned the presidential candidacy of the popular Maria Corina Machado, who had won the opposition primary. Washington allowed General License 44 to expire in April. But General Licenses 41 and 8 remain in place.

Mr. Maduro says Russia or China can replace Chevron. He's blowing smoke. For Russia, an oil producer, the less global supply the better. China is focused on getting repaid billions in loans it made to Caracas, not investing more.

Chevron makes no bones about its priorities: Money is above the suffering Venezuelans. The Biden administration's motives are difficult to divine.

Write to O'Grady@wsj.com.

The Biden-Harris Economic Success

dollars.

By Janet L. Yellen

The economy has been marked by a combination of developments that few thought possible this year. Inflation is down significantly while the unemployment rate remains near historic lows. Economic growth has been strong, bolstered by robust consumer spending and business investment. Risks remain, but the data suggest that we're on the path to a soft landing.

While there's more to do to bring down the cost of living, I believe that Americans can feel optimistic about their economic futures. Because wages have risen faster than prices, the typical American can now afford more goods and services than before the pandemic. Americans earning less have seen the largest wage gains. The black unemployment rate reached a historic low last year. The gap between urban and rural unemployment rates has narrowed.

den and Vice President Harris took office, thousands of Americans were dving from Covid-19. and the unemployment rate was 50% higher than it is today. In that first year, our administration provided financial support to households and prevented an eviction crisis. We vaccinated millions to save lives and allow businesses to reopen safely.

We then navigated additional crises, including the energy shock from Russia's invasion of Ukraine. And we made critical investments in infrastructure and manufacturingfrom clean energy to semiconductors—including in training Americans for jobs in these cutting-edge industries. Our actions helped reverse the pandemic's shock to our ability to produce goods and services and are boosting our economy's long-run potential output: a strategy I've called modern supply-side economics.

Comparisons show that this strategy has been paying off. None of this has happened The U.S. labor market recov-

by chance. When President Bi- ered faster from the 2020 re- dollars already headed toward cession than from previous recessions. Economic growth surpassed private-sector predictions of a modest recovery. And the U.S. has outperformed many other advanced economies, with greater real gross domestic product growth and a faster decline in inflation while maintaining a strong labor market.

At this moment, our policy choices are crucial. The president, the vice president and I believe we need investments that bring down costs and double down on our strategy for strong and broad-based long-term growth. We know that prices of essentials like energy, housing and healthcare remain too high, so our top economic priority is lowering them. Investing to build more housing, where challenges have been mounting for decades, would make life more affordable for families. Expanding support for child care would bring more Americans into the labor force. And

infrastructure, clean energy and semiconductors-including in communities that hadn't historically benefitedwould reduce energy costs and increase productivity.

Veering off course could ieopardize our economic trajectory. Permanent tax cuts that are stacked toward the wealthy and are unpaid for would explode the federal deficit. Repealing investments in the industries of the future would stunt growth. And pursuing nontargeted, nonstrategic international economic policies would raise costs for Americans and cause global turmoil.

Our economic strategy has helped America weather hard events, from a global pandemic to the biggest war in Europe since World War II, and build toward the future. Our administration is committed to sustaining and building on our

Ms. Yellen is U.S. Treasury building on the billions of secretary.

REVIEW & OUTLOOK

How Freedom Faded on Biden's Watch

His successor will

inherit a far more

dangerous world.

resident Biden will address the United Nations on Tuesday, in what is likely to

stage. A President's foreignpolicy legacy typically outlasts his term, so it's worth taking a step back and considering the world Mr. Biden will leave his successor.

It is a far more dangerous world than Mr. Biden inherited, and far less congenial for U.S. interests, human freedom

and democracy. The latter is tragically ironic since the President has made the global contest between democracy and authoritarians an abiding theme. Authoritarians have advanced on his watch in every part of the world—Europe, Asia-Pacific, the Middle East, Africa, and even the Americas.

• Mr. Biden's chaotic withdrawal from Afghanistan was his single most damaging decision, and it has led to cascading trouble. The

Taliban control the country and are reimposing feudal Islamist rule. His withdrawal has done more harm to more women than anything in decades, while jihadists have revived their terror sanctuary. • More damaging is the message his with-

drawal sent to adversaries about American will and retreat. The credibility of U.S. deterrence collapsed. Mr. Biden tried to appease Vladimir Putin by blessing the Nord Stream 2 pipeline and refusing to arm Ukraine. Mr. Putin concluded he could invade Ukraine at limited cost, especially after Mr. Biden blurted out that a "minor incursion" might not elicit the same Western opposition.

After Kyiv bravely resisted, Mr. Biden sent weapons, but too little and too delayed at every stage of the war. Even now, after 31 months and 100,000 or more dead, Mr. Biden dithers over letting Ukraine use long-range ATACMS against targets inside Russia.

• His record in the Middle East is worse. Rather than build on the Abraham Accords he inherited, he tried to ostracize Saudi Arabia and he banned offensive weapons to fight the Houthis. From the start he courted the mullahs in Iran to renew the 2015 nuclear accord that had enriched Iran before Donald Trump withdrew. He refused to enforce oil sanctions, even as Iran spread mayhem through its proxy militias.

The U.S. was caught flat-footed when Hamas, aided by Iran, invaded Israel and massacred 1,200 innocents. His national-security adviser, Jake Sullivan, had to edit an online version of a Foreign Affairs essay already published boasting that "the region is quieter than it has been for decades.'

Here's how quiet: Our foremost regional

ally is now at war on multiple fronts. Israel's defensive campaign in Gaza isn't finished and a new and perhaps bloodier fight is unfolding

with Hezbollah. The Houthis have all but shut down Western commercial shipping around be his last big moment on the world the Red Sea, while Mr. Biden makes U.S. naval

commanders play whack-amissile.

Meanwhile, Iran marches undeterred to becoming a nuclear power. The Biden Administration mouths pieties that this is unacceptable, but its ev-

ery action suggests it believes a nuclear Iran is inevitable and trying to stop it is too risky. When Iran goes nuclear, the security calculus in the world will turn upside down.

• Mr. Biden's record in the Asia-Pacific is marginally better, at least diplomatically. He has strengthened U.S. alliances against China, especially with Australia, Japan and the Philippines. The Aukus defense deal is important, as is Japan's move toward closer military integration with the U.S.

Yet diplomacy hasn't been matched by hard power. The U.S. isn't building enough submarines to meet its Aukus commitment and U.S. needs. American bases lack adequate air defenses and long-range missiles to defeat a Chinese invasion of Taiwan. State Department foot-stomping hasn't stopped Chinese harassment of Philippine ships.

 Closer to home, Venezuela's dictator has predictably stolen another election, exposing the Biden Administration's deal to ease oil sanctions as naive. Mexico is tilting in an authoritarian direction without U.S. protest. Cuba continues to spread revolution wherever it can. The resulting human suffering reaches America in the flood of migrants that now burden our cities, from Manhattan to Springfield, Ohio.

• Most ominous is the collaboration of these menacing regional powers into a new anti-Western axis. Iran supplies missiles and drones to Moscow, which may be supplying nuclear know-how to Tehran. China is aiding Moscow, which now joins Beijing in naval maneuvers. North Korea also arms Moscow while being protected by China from United Nations sanctions it once voted for.

All of this and more adds up to the worst decline in world order, and the largest decline in U.S. influence, since the 1930s. Yet Mr. Biden continues to speak and act as if he's presided over an era of spreading peace and prosperity. He has proposed a cut in real defense spending each year of his Presidency, which may be his

Addressing this gathering storm will be difficult and dangerous. The first task will be restoring U.S. deterrence, which will require more hard power and political will. Whoever wins the White House will have to abandon the failed policies of the Biden years, lest we end up careening into a global conflict with catastrophic consequences.

Behind Microsoft's AI Power Deal

own. Witness Constellation Energy's deal on Friday to restart its Three Mile Island nuclear reactor to power Microsoft AI data centers.

Artificial intelligence is increasing demand for power while baseload plants that provide power around the clock shut down. New data centers are on hold because the grid can't support AI systems with intermittent wind and solar. Hence, the Microsoft deal.

One of Three Mile Island's two nuclear reactors in Pennsylvania shut down permanently after the 1979 nuclear accident, and the other closed in 2019 because it became uneconomic. But the AI boom and forced retirements of coal plants are reviving nuclear power.

Microsoft's deal follows Amazon's purchase of a Pennsylvania data center powered by an on-site 2.5 gigawatt nuclear plant. The Energy Department has approved a \$1.5 billion government loan guarantee to restart a closed nuclear reactor in Michigan amid a Midwest power crunch.

A growing problem is that coal and natural

resident Biden's energy policies are so gas plants are closing prematurely amid an ondetached from reality that companies are slaught of regulation and heavily subsidized rescrambling to find more power on their newables. Wind and solar power can turn a profit running only some of the time. Baseload power plants can't—especially as they're burdened by costly new Environmental Protection Agency rules.

The EPA finalized its Clean Power Plan 2.0 that will require coal and new or refurbished gas plants to implement carbon-capture technology by 2032. Such technology isn't economic or feasible now, so coal plants will have to shut down. This threatens grid reliability, four regional grid operators warn in a friend-of-court brief supporting a challenge to the rule by 27 states.

The grid operators that provide power to some 156 million customers—MISO, PJM, ER-COT and SPP—tell the D.C. Circuit Court of Appeals that EPA compliance timelines "are not workable and are destined to trigger an acceleration in the pace of premature retirements" of coal and gas generators. This will "substantially strain" their ability to "maintain the reliability of the electric power grid."

The lights are flickering. Is anyone at the White House home?

Trump's Price Controls on Credit Cards

onald Trump keeps trying to microtarget working-class voters, but he's bidding himself into policy and political dead ends. "While working Americans catch up, we're going to put a temporary cap on creditcard interest rates," he told a rally last week in New York. "We're going to cap it at around 10%. We can't let them make 25 and 30%."

That's a price control on credit. It would be comforting to write off this remark as another of Mr. Trump's rally improvisations, like references to Hannibal Lecter. But watch the video, and it looks as if Mr. Trump is reading the credit-card policy off the teleprompter.

Mr. Trump's promised "temporary" 10% cap is lower than the rate that America's two leading socialists proposed in 2019. A bill from Sen. Bernie Sanders and Rep. Alexandria Ocasio-Cortez aimed to limit rates on consumer debt to 15%. "Modern-day loan sharks are no longer lurking on street corners breaking kneecaps," Mr. Sanders said. "They wear three-piece suits and work on Wall Street."

Yet economics teaches there's no free lunch. Millions of Americans use credit cards as convenient and ubiquitous payment networks, and they don't owe interest because they pay off their balances at the end of each month. Debit

cards are an alternative. People in a pinch also use credit cards to cover emergencies or financial shortfalls.

The interest rates on credit cards reflect operating costs, including nonpayment. A 10% cap would effectively cut off people with less-thanpristine credit scores. After Illinois capped many consumer interest rates at 36% "all-in APR," a study in the journal Public Choice said "financial well-being declined" for residents who lost access to short-term, small-dollar loans.

Why do Messrs. Trump and Sanders think it's helpful to limit credit access and send folks to the pawn broker or leg breaker instead? Card companies might respond by raising fees, which is what happened to free checking after Democrats regulated debit swipe charges in 2010.

Mr. Trump has criticized Kamala Harris for proposing price controls on groceries. "After causing catastrophic inflation," he told a Pennsylvania rally, "comrade Kamala announced that she wants to institute socialist price controls. You saw that. Never worked before. Never

He's right, yet Mr. Trump is doing the same on credit cards. It's bad enough to have a Democratic Party that ignores economics. What's the point of a Republican Party that follows suit?

LETTERS TO THE EDITOR

Gov. Lamont Responds to Noonan on Harris

I love Peggy Noonan, but let me posit a counter to her column "Kamala Harris Is an Artless Dodger" (Declarations, Sept. 21). She says that Donald Trump vs. Kamala Harris is a race between awful and empty. Columnists have belittled the purity of presidential candidates forever; the Abraham Lincoln vs. Stephen Douglas Senate race was slammed as a choice between the better of two

I won't opine on awful, but let me speak to empty. Ms. Noonan says that Vice President Harris lacks specifics because she doesn't know, doesn't care or doesn't want you to know. On foreign policy, I know where she stands on arming the Ukrainian freedom fighters. Former President Trump says end the war on day onewhatever that means—but I would wait to find out if I were Vladimir Putin. Ms. Harris knows that working with our allies makes America stronger; Mr. Trump, not so much.

On trade, Ms. Harris wants to bring our supply chains closer to home, especially with national-security assets, and toughen our negotiating position with adversaries like China and Russia. Mr. Trump's tariffs would punish friend and foe alike, and Americans will pay the price.

Ms. Noonan characterizes the Harris "economic opportunity tour" as an evasive dodge. I believe that most of us understand it to mean that the era of free money is over, but that the Harris administration will help you get the skills for a better job and make it easier to start a business or own a home. These are the building blocks of opportunity and wealth.

Here in Connecticut, we pride ourselves on being the opportunity state, meaning more jobs, higher wages and more new business start-ups, led by entrepreneurs from all walks of life.

We know where Ms. Harris stands on immigration. She understands the value of legal immigration and wants more tools from Congress to fight illegal immigration. As with trade and our allies, where Mr. Trump doesn't know the difference between friend and foe, he doesn't like immigration-period. "They're poisoning the blood our country," he said.

Are we better off today than four years ago? Four years ago, the economy was in the ditch and stores were boarded up, with sage brush blowing down empty streets and big unemployment. Blame it all on Covid, then acknowledge that some of the comeback inflation was Covid-related as well, but we are better off than four years ago, and Ms. Harris can argue that we are only getting started.

I think we know the difference between awful and not-so-empty.

Ms. Noonan argues that Ms. Harris spends too much time on biographywho she is, why she is and why she believes what she does. I still make a laundry list of candidates' positions on everything from tax rates to prescription-drug prices, but as the years march on, I put more and more emphasis on character. Teddy Roosevelt is reputed to have said, "Nobody cares how much you know until they know how much you care." We know a lot about both candidates on the issues and on character. Let's vote.

> GOV. NED LAMONT (D., CONN.) Hartford, Conn.

Like a Drug, a Gateway Tax Leads to More

Thank you, Hal Scott and John Gul- unrealized-capital-gains tax proposal liver, for pointing out the folly of taxing unrealized capital gains ("You Would Pay Harris's Wealth Tax," oped. Sept. 10). Here is my own example, On Jan. 3, 2023, I rolled over my Signature Bank stock, valued at \$19,121.26, from my traditional IRA to my Roth IRA. In December, I sold my 153 shares at \$0.001 a share for a total of 1 cent after fees. But my tax for the year was on the amount rolled over, \$19,121.26, not the value received for selling it.

Stocks go up and down. The only number that matters to the owner is the amount in hand when sold. That is the amount on which it should be taxed, not on what it has been.

KATHLEEN CULBERT McMinnville, Ore.

Messrs. Scott and Gulliver claim that Vice President Kamala Harris's on the ultrawealthy would affect most of us by destroying capital markets and our 401(k)s. Another likely outcome: This is a "gateway" tax.

It is analogous to a gateway drug which appears benign but leads to more addictive drugs. Much as the alternative minimum tax was meant for rich people but then affected many in the middle class, so too will this tax. It is only the beginning.

Bruce Kleinman North Riverside, Ill.

Even this high-school graduate but longtime Journal subscriber can grasp the market wreckage Ms. Harris's proposal would bring. To my union friends: Don't dismiss the effect on your pensions. This isn't simply a maybe; it is virtually certain.

GERALD MANTELA Fenton, Mich.

'White Privilege' Can Pay a Pretty Penny

I took Jason Riley's advice and saw inclusion (DEI) has become. Matt Walsh's "Am I Racist?" larious New Film Asks: 'Am I Racist?"" Upward Mobility, Sept. 18). It was both laugh-out-loud funny and sad. But it was mostly eye-opening in demonstrating how extensive the financial scam of diversity, equity and

What Matters More, the Law or Our Love of Liberty?

In "Presidential Immunity From Plato to Trump" (op-ed, Sept. 7), Prof. Harvey Mansfield cites Plato and writes about the rule of law. But the written laws aren't enough. In Book Seven of "The Laws," Plato warns that unwritten customs "are the bonds of the entire social framework." But, he continues, "if they go wrong and 'get out of tune'-well. you know what happens when the carpenters' props buckle in a house: they bring the whole building crashing down."

Judge Learned Hand got straight to the point, writing, "Liberty lies in the hearts of men and women; when it dies there, no constitution, no law, no court can save it." If the republic succumbs to a dictatorship or oneparty authoritarian rule, it won't be because of a debate over presidential immunity.

TIMOTHY L. GALL Shaker Heights, Ohio

In the years after Martin Luther King Jr. was killed, there were a few hustlers shaking down big corporations. The marketing brilliance of "white privilege" today is that it allows white people to get in on the racket. With a first-person perspective, white hustlers can write books and advise corporations on how to discern their internal racism, all at the price of a consulting fee and more victimhood for blacks.

Matt Walsh's film puts the race baiters' own words up against those of beer-drinking biker-bar patrons to let the audience render its own judgment on DEI. Spoiler alert: It is all word salad. It makes no sense.

RICHARD HAGEMEYER Nashville, Tenn.

When Moderate Isn't Better

Donald Trump might be more moderate than Kamala Harris, but his position isn't better ("Why Trump Is the Abortion Moderate," Review & Outlook, Sept. 12). As Barry Goldwater said, "Moderation in the pursuit of justice is no virtue." For those who believe in individual rights, there can be no right to enslave a mother to the needs of a fetus. If moderation means being for some liberty but not too much, I'm happy to be a radical.

JACO VAN DER COLFF Woodland Hills, Calif.

Why We Don't Fix the Debt William Galston asks, "Why not

level with the American people about the coming crisis and persuade them to begin phasing in the added revenues from taxes needed to forestall it?" ("A U.S. National Debt Crisis Is Coming," Politics & Ideas, Sept. 18). A reasonable question, but politicians who propose new or higher taxes don't win their next elections.

JIM TULLY Cocoa, Fla.

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Pepper ... **And Salt**

THE WALL STREET JOURNAL



Exploding Pagers and the Tech Race With China

By Mike Gallagher

et's call it Operation Chutzpah. If, as is widely believed, the Mossad detonated pagers and walkietalkies used by Lebanese Hezbollah terrorists, killing dozens and wounding thousands, it will go down as an intelligence operation for the history books. This strike is the latest in a string of daring operations from the tunnels beneath Gaza to the heart of Tehran. It also demonstrates how software has ushered in a new phase of warfare.

Remember that Russian soldiers stole \$5 million in John Deere equipment in 2022 from occupied Ukraine, only to discover that the internetconnected tractors could be remotely turned into scrap. Months later. Tesla drivers at the Chinese resort of Beidaihe found their cars banned from the town during a Chinese Communist Party conclave.

Israel's attack against Hezbollah points to the risks and opportunities of an interconnected world.

The party has since blocked Tesla at other sites, worried that the connected cars' cameras pose a security risk. In January the FBIannounced that Volt Typhoon, a Chinese statesponsored group, had embedded malware inside America's critical infrastructure such as "communications, energy, transportation, and water sectors." This malware could destroy the systems that keep our homes, businesses and hospitals running.

Look at the damage done by ex-

ploding pagers. Then imagine the chaos caused by haywire power grids, or the economic consequences of frozen ports. The Biden administration recently warned that Chinese-made port cranes could be "controlled . . . from remote locations." European companies found that Chinese groups may have gained access to the systems that control cargo ships. Billions of endpoints connect to the internet, including sensors and devices that physically interact with critical infrastructure. Anyone with control over a portion of the technology stack such as semiconductors, cellular modules, or hardware devices, can use it to snoop, incapacitate or kill.

The weaponization of commercial hardware and software will drive a bifurcation in the technology stack between the free world and our totalitarian rivals. In June, CCP General Secretary Xi Jinping declared that 'the high-tech field has become the front line and main battlefield of international competition." Accordingly, the Communist Party has required that technologies from socialmedia apps to AI models reflect the party's socialist values. China has even used "smart city" systemsnetworks that govern traffic management and trash collection—as "a digital backbone that facilitates the consistent enforcement of social control programs.'

Mr. Xi is working to remove American technology—iPhones, Intel chips and Microsoft software-from the party's totalitarian technology stack. He seeks a future where he could turn off the lights in Green Bay or Geneva knowing we could not do the same in Guangzhou.

To prevent such a disaster, we should first recognize that the Chinese Communist Party isn't interested



in cooperating on AI risks and safety. This delusion underlies the Biden administration's diplomatic approach to Beijing. Despite little to show from engagement on climate change and fentanyl, President Biden seems to believe we can persuade China to use AI for humanity's benefit.

But what does "AI safety" look like to a regime using facial recognition to ethnically profile Uighurs as part of their genocide in Xinjiang? The main AI risk the party wants to mitigate is having the U.S. dominate this critical technology. We should focus on mitigating the main risk to our way of life, by building a free world technology stack, with trusted allied vendors

from chips to servers to software. Second, we need to wield the freeworld technology stack more effectively. In World War II, America equipped its allies to be the "Arsenal of Democracy." Today, nations looking to us for weapons might call us the "DMV of Democracy"-we provide what we promised only after an agonizing wait. As Rahm Emanuel,

our ambassador to Japan, recently noted, "our military industrial base is ferkakte . . . it's screwed up . . . the weakest link in our national security." Technology can help. America has the tools to build a software-defined manufacturing ecosystem, where we can find and fix bottlenecks. A digital twin of the entire defense supply chain would allow us to analyze, allocate, and accelerate production from the factory floor to the front line.

Third, a revitalized American technological industrial base should catalyze an interoperable free-world technological industrial base. To outcompete China, we must make it easy for allies and geopolitical swing states to adopt, contribute to, and innovate on top of our software. In Mr. Xi's "main battlefield of international competition," we must make the free world's technology stack more attractive than the totalitarian alternative, drawing more countries to our side of the emerging Silicon Curtain.

Pillar Two of the AUKUS arrangement with Australia and the United Kingdom presents a massive opportunity to do this, by enhancing joint capabilities in critical areas alongside two allies. We haven't made the most of this opportunity. The State Department recently proposed, at last, exemptions to burdensome International Traffic in Arms Regulations weapons-export restrictions for Australia and the U.K. Even then, the exemptions don't apply to hypersonic missiles, undersea vehicles. and electronic warfare-core elements of Pillar Two. The exemptions also don't apply to other Indo-Pacific allies, notably Japan.

Congressional Republicans have pushed to loosen ITAR, which a Rand report calls "an impediment to defense innovation and integration with allies." Doing so, and transferring implementation from the overcautious State Department to the Pentagon, would serve as a down payment on the policy America needs to win the technology stack competition.

America and our allies have the tools to build a shared software-defined manufacturing ecosystem backed by a free-world technology stack. This is the cornerstone of a safer and more prosperous U.S.-led coalition, one that geopolitical swing states will want to join. If we fail, China's totalitarian technology stack will flourish, ushering in a more fractured and hostile world. In that case. Americans may view their iPhones and car batteries the way Hezbollah operatives now see their pagers.

Mr. Gallagher, a Journal contributor, is head of defense for Palantir Technologies and a distinguished fellow at the Hudson Institute. He represented Wisconsin's Eighth Congressional District (2017-24) and was chairman of the Select Committee on the Chinese Communist Party.

Trump Can Take Heart: Mark Zandi Says Harris Will Win



By Allysia

Donald Trump trailing Kamala Harris. Yet he may take comfort that the media's favorsoothsayer— Moody's Analytics chief economist Zandi—is projecting victory for Ms. Harris.

"The economy's performance is an increasingly strong tailwind to the presidential election bid of Kamala Harris," Mr. Zandi tweeted last week. According to his model, "Harris is expected to win 286 electoral votes by winning the swing states of Wisconsin, Michigan, Pennsylvania, and North Carolina."

Mr. Zandi also called the Federal Reserve's 50-basis-point interestrate cut an "economic tailwind behind the Harris campaign." That's far from reassuring for the vice president. It isn't an exaggeration to say that Punxsutawney Phil has a better predictive record than he does. Let's rewind the tape.

In October 2006, Mr. Zandi predicted that the shaky housing market would "bottom out" in a year. It took five. In July 2007 he said "the economy isn't going to weaken any

further." Mere months later, it began to plunge into the "Great Recession."

Mr. Zandi later devised the economic models the Obama administration used to claim that its stimulus spending would create economic "multiplier" effects, with each dollar spent on unemployment benefits and food stamps producing more than \$1.60 in output.

The Obama stimulus, Mr. Zandi forecast, would result in 141.4 million jobs in 2012. There were only 135 million by the end of that year, fewer than his model predicted if the Democrats' stimulus hadn't passed. He projected the stimulus would boost gross domestic product by 9.1%, between 2008 and 2012. GDP grew a mere 3.9%.

After Mr. Zandi's forecasts proved off the mark, he wrote a paper in 2015 with Princeton economist Alan Blinder arguing that the recession would have been much worse without the Democrats' spending and housing and auto industry bailouts. The government's policy responses, they concluded, "were a resounding success." Americans didn't think so.

The sluggish Obama-era economy fueled Mr. Trump's 2016 candidacy. Naturally, Mr. Zandi forecast an economic Category 5 hurricane if Mr. Trump won.

The Republican's policies, he predicted, would tank the economy and create 7.4% unemployment, soaring interest rates, deficits and inflation. GDP would fall 2.4% in "an unusually lengthy recession," and "the average American household's after-inflation income will stagnate, and stock prices and real house values will decline."

The Moody's Analytics chief economist says she's on a glide path. He's been wrong before—and often.

Instead, the economy surged thanks to Mr. Trump's tax cuts and deregulation. Unemployment fell to 3.5% in February 2020, the lowest in 50 years. The economy grew 8.3% during his first three years before the pandemic. Stocks, real incomes and housing values climbed. Inflation didn't. Deficits as a share of the economy remained at historically normal levels until the pandemic.

Mr. Zandi predicted that a Democratic sweep in the 2020 election supercharge economic growth, while interest rates would

stay between 0.1% and 1.5%. He later commended the Democrats' \$1.9 trillion Covid blowout in March 2021. though he recommended more transfer payments.

When inflation heated up, in June 2021 Mr. Zandi said not to worry: "It is wrong to get all worked up over today's high inflation. It will soon abate" and "moderate to between 2% and 3% by this time next year." Inflation peaked at 9.1% in June 2022.

A meteorologist with the same record would be told to find another line of work. But the press has been touting Mr. Zandi's prediction that a Democratic sweep would be the best outcome for the economy, inflation, household incomes and deficits, while a Republican victory would be the worst. Assume the opposite.

The reason Mr. Zandi has so often been wrong is that his Keynesian models underestimate the economic benefits of tax cuts and deregulation. They likewise overestimate the economic boost from government spending and underestimate its collateral damage, along with that from tax hikes and regulation.

Mr. Zandi's election model is also tailor-made to produce his desired outcomes. "The most important economic variable in the model is the cost of a gallon of regular unleaded

gasoline," he tweeted on Sept. 15. Prices below \$3.50 favor Ms. Harris, as do mortgage interest rates under 6.5%. But these numbers are arbitrary. In 2016 Mr. Zandi's models predicted higher housing prices would boost Hillary Clinton.

The problem with all models is that they reflect their creators' biases. They can also be self-reinforcing, as variables, and their assigned weights, can be adjusted to produce wanted outcomes.

This is why Covid death models that governments used to justify lockdowns were off the mark. It's also one reason the 2016 election polls were wrong: Models underestimated turnout among less-educated voters who favored Mr. Trump. This, too, may be why the Federal Reserve's model underestimated inflation, which resulted in part from its easy monetary polices.

The lesson this time around: Don't put too much faith in Mr. Zandi's prediction that Ms. Harris is on a glide path to victory or that the Fed's rate cut "cements an economic soft landing." Mr. Trump could very well lose, but Mr. Zandi would deserve as much credit for projecting his defeat as Punxsutawney Phil does when he predicts an early

Contrary to Media Myth, U.S. Urban Crime Rates Are Up

By Jeffrey H. Anderson

eft-leaning commentators and advocates have insisted over the past year that crime rates are falling. ABC's David Muir asserted so while rebutting Donald Trump during the recent presidential debate. The nation's largest crime survey says otherwise: Crime rates haven't been falling, and urban crime is far worse than it was in the pre-George Flovd era.

The new findings were released this month by the National Crime Victimization Survey. Run by the Bureau of Justice Statistics and administered by the Census Bureau, the NCVS dates to the Nixon administration and is one of the largest federal surveys on any topic. It asks some 230,000 U.S. residents annually whether they've been the victims of crimes. It then asks about the nature

to the police, the demographics of the perpetrator and other particulars.

The NCVS report for 2023 finds no statistically significant evidence that violent crime or property crime is dropping in America, Excluding simple assault—the type of violent crime least likely to be charged as a felony-the violent crime rate in 2023 was 19% higher than in 2019, the last vear before the defund-the-police movement swept the country.

But crime hasn't risen equally across the nation. America's recent crime spike has been concentrated in urban areas. These are the areas in which leftist prosecutors have gained the strongest footholds, where police have been the most heavily scrutinized, and where lax enforcement and prosecution have become common.

The results aren't pretty. According

to the NCVS, the urban violent-crime rate increased 40% from 2019 to 2023. Excluding simple assault, the urban violent-crime rate rose 54% over that span. From 2022 to 2023, the urban violent-crime rate didn't change to a statistically significant degree, so these higher crime rates appear to be the new norm in America's cities.

The urban property-crime rate is also getting worse. It rose from 176.1 victimizations per 1.000 households in 2022 to 192.3 in 2023. That's part of a 26% increase in the urban property-crime rate since 2019. These numbers exclude rampant shoplifting, since the NCVS is a survey of households and not of businesses.

In contrast, violent-crime rates in suburban and rural areas have been essentially unchanged since 2019. In suburban areas in 2019, there were 22.3 violent victimizations per 1,000 persons 12 or older, compared with 23.3 in 2023—a statistically insignificant change. In rural areas, the rate was 16.3 in 2019 and 15.3 in 2023again, not a statistically significant change. Our recent crime spike is essentially limited to cities.

The FBI's flawed statistics hide the disturbing results of the defund-the-police movement since 2020.

Such NCVS findings are far more reliable than the Federal Bureau of Investigation figures that left-leaning commentators emphasize, for five reasons. First, the NCVS figures are finalized statistics, not unpolished. partial-year preliminary figures. Second, the FBI switched to a new reporting system in 2021 that makes year-to-year comparisons (from before to after its change) difficult if

not impossible.

Third, the NCVS is a nationally representative survey, while the FBI lacks data from a relatively large number of law enforcement agencies, including the Los Angeles Police Department, and it hasn't had the same mix of agencies reporting data each vear. Fourth, the FBI isn't considered a principal statistical agency by the federal government, so its ability to compensate for such missing data is

Fifth, the NCVS captures crimes whether they are reported to the police or not. In the 2023 NCVS, crime victims conveyed that a majority-55%-of violent victimizations weren't reported to the police, while 70% of property-crime victimizations weren't reported. The FBI publishes data only on crimes reported to the police, which means it doesn't capture most crimes.

Since the summer of 2020, when many cities adopted lax law enforcement policies, the U.S. has experienced a huge urban crime spike. The newly released figures don't show this urban crime spike abating. If we insist on rerunning the failed social experiments of the 1960s and '70s, we should expect similar results. Thanks to the success of "broken windows" policing in the 1990s and 2000s, we know what works. When will our cities adopt such sensible policies in lieu of their current ones?

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Notable ゼ Quotable: Safe

Vice President Kamala Harris in an interview with the National Association of Black Journalists. Sept. 17:

Q: And we've seen what's happening with former President Trump. Do you have full confidence in the Secret Service . . . to protect all of you? Ms. Harris: I do.

Q: You-you feel safe, you and

your family? Ms. Harris: I do. But, I mean, you can go back to Ohio. Not everybody has Secret Service. And there are far

too many people in our country right

now who are not feeling safe. I mean,

I look at Project 2025, and I look at,

you know, like the "Don't Say Gay" laws coming out of Florida. Members of the LGBTQ community don't feel safe right now. Immigrants or people with an immigrant background don't feel safe right now. Women don't feel safe right now. And so, yes, I feel safe. I have Secret Service protection, but that doesn't change my perspective on the importance of fighting for the safety of everybody in our country and-and doing everything we can to, again, lift people up and not beat people down so they feel alone and are made to feel small and made to feel like they're somehow not a part of it or us.

Mr. Anderson is president of the American Main Street Initiative. He served as director of the Bureau of Justice Statistics, 2017-21.

Darfur Siege Spirals Into a Brutal Battle

Famine crisis in key Sudanese city grows as military and rebel group step up attacks

The conflict in Sudan is entering a desperate new phase.

By Mohamed Zakaria. Gabriele Steinhauser and Nicholas Bariyo

paramilitary-turnedrebel Rapid Support Forces have laid siege to El Fasher, the largest city in the western Darfur region, for nearly five months, part of a raw struggle for power with Sudan's military.

Global health authorities have declared famine in one of the camps for the displaced on El Fasher's outskirts. Some of the city's roughly two million residents have resorted to eating animal feed, after the RSF and the military for months blocked aid.

This month, the RSF has

launched an all-out assault on El Fasher, firing hundreds of artillery and mortar shells into densely populated areas. The Sudanese military, which has forged an alliance in El Fasher with two local armed groups, has responded with airstrikes targeting areas occupied by the RSF. There have also been drone attacks and ferocious street battles as the RSF makes ever-deeper forays

If El Fasher falls, residents, regional experts and the Biden administration worry that the RSF, which grew from the notorious Janjaweed fighters who terrorized Darfur in the early 2000s, could embark on a fresh round of mass atrocities, going after members of the Black Zaghawa and Fur communities it targeted two decades ago.

Sudan's then-president, Omar al-Bashir, dispatched the majority Arab Janjaweed to put down an uprising by Darfur's Black communities, causing the deaths of an estimated



Fears are growing of even more destruction in El Fasher if the RSF rebel group takes the largest city in western Darfur.

300,000 people between 2003 and 2008 in what the U.S. and others have labeled the first genocide of the 21st century.

'Today, a violent history is repeating itself," President Biden warned on Tuesday, in his most substantive comments on Sudan since the war erupted more than 17 months ago.

Mohamed Biden urged

Hamdan Dagalo, the powerful general leading the RSF, and army commander Abdel Fattah al-Burhan to pull their forces back from El Fasher, allow humanitarian agencies access to prevent potential mass death from starvation and lack of medical care, and start talks to end the conflict.

He also reiterated an ear-

lier determination by his administration that both the RSF and the military, which is known by its acronym SAF, have committed war crimes and that the RSF had committed crimes against humanity and ethnic cleansing.

Burhan and Dagalo, who together ousted Bashir in a coup in 2019, have denied their forces have committed atrocities.

Hundreds of thousands of survivors of the violence of the early 2000s still live in three sprawling displacement camps near El Fasher, including in Zamzam, where, according to experts from the U.N., relief agencies and research groups, famine has taken hold since at least early August. In recent months, Zamzam's population has ballooned to around 500,000 as more people have sought safety there amid RSF attacks on El Fasher city and surrounding villages.

"If the RSF takes control of El Fasher, the usual scenario will happen: ethnic cleansing

of the city's entire population.' said Modather Ibrahim Suliman, the medical director of Saudi Maternity Hospital, the only El Fasher hospital still able to treat civilians. "This is what they openly state in their videos on social media.'

Heavy shelling has already hit the Abu Shouk displacement camp in the north of El Fasher, which hosted around 100,000 genocide survivors before the start of the siege.

Ella Mubarak, a resident of Abu Shouk, said his 10-yearold daughter has been missing since an RSF assault on the southern edge of the camp on Sept. 11. When a shell hit the family's neighborhood, Mubarak's relatives and neighbors all ran off in different directions, and once everyone regrouped a few hours later, the girl wasn't there.

"I am losing hope of finding my daughter alive," said Mubarak. "The RSF militias have looted everything. All our belongings are gone.

Ukraine's Snake Island Holds Key to Black Sea Industrial

By James Marson AND NIKITA NIKOLAIENKO

SNAKE ISLAND, Ukraine-This rocky patch of land about 20 miles off the coast still bears the scars of the relentless Ukrainian assault to take it back. The Black Sea island is littered with the mangled remains of Russian military equipment and piles of rubble.

A little more than two years ago, two Ukrainian commandos circling the island in a gyrocopter surveyed the scene of destruction, before descending for a small but important task.

For weeks, Ukraine had pummeled the island's Russian occupiers with artillery fire and aerial strikes, eventually forcing a retreat. The commandos came to the island a few days after the withdrawal. Swooping near the ground, one of them dropped a Ukrainian flag. He returned by boat days later and raised it on the main flagpole, the coup de grace in one of the most critical operations of the war.

The Wall Street Journal made a rare visit to Snake Island this month and spoke with officers from Timur Special Unit, an elite unit of Ukraine's military-intelligence agency, who took part in its recapture in summer 2022. They revealed new details about one of the most celebrated chapters in Ukraine's resistance against Russia's invasion.

Ukraine is still reaping benefits from recapturing the island, which gave it a foothold in the Black Sea and threw a lifeline to its struggling economy by reopening exports worth billions. In the early hours one recent sunny morning, a line of grain ships snaked along the coast from Ukraine's main port of Odesa.

Recapturing the island was also a symbolic victory for Ukraine. The 40-acre outcrop gained iconic status on the first day of the war, when Russian warships approached and demanded the Ukrainian garrison surrender. A border guard responded by radio that the warships should "get f—d," an act of resistance that characterized Ukraine's underdog spirit and was later memorialized on a stamp and in songs. Russia is still contesting



Ukrainian army soldiers ride a boat headed to Snake Island, which the Kyiv military recaptured from Russia in 2022.

Ukraine's hold on the island, including with a missile strike on Aug. 24, Ukraine's Independence Day, that left several soldiers concussed. The Journal visited the island with the permission of the Ukrainian military and agreed not to show sensitive military sites that

could compromise security. Snake Island has been disputed among the Black Sea powers for centuries because of its favorable location. After Ukraine declared independence from the Soviet Union in 1991, Kyiv constructed a firmer presence on the island to bolster its claim to the waters around it. That included a museum to the mythical Greek warrior Achilles, reputed to be buried on the island.

"As the historical saving goes, 'Whoever controls Snake Island, controls the sea,' " said an officer in HUR, Ukraine's military-intelligence agency, who uses the call sign Ned, in an interview on the island.

After seizing it in February 2022, Russia quickly moved air-defense missiles onto the island, along with rocketlaunch systems that could smash any approaching boats. Naval craft ferried troops and



Sources: Institute for the Study of War and AEI's Critical Threats Project, ANDREW BARNETT/WSJ

supplies from Crimea.

Ukraine's efforts to take the island back started that April with the sinking of the Russian Black Sea Fleet's flagship, the Moskva. Ukraine soon began striking the island relentlessly with missiles fired from drones and warplanes, sinking Russian boats and destroying a helicopter just after it landed. Ukrainian forces placed

155mm self-propelled howitzers on barges and moved them around the Danube delta to firing positions inaccessible land. Multiple-launch rocket systems called Uragan, or Hurricane, fired directly from barges.

"As soon as we started working systematically from the middle of June 2022, we forced them to abandon the

island in two weeks," said the HUR military-intelligence officer in charge of the operation. who is known by the call sign Shakespeare.

On June 30, Moscow announced it was pulling out its troops in what it called goodwill gesture."

That was when Shakespeare sent in the gyrocopter carrying two commandos, including a 38-vear-old officer known as Ramses, to check whether the Russians had left. They chose the small craft as it was hard to spot on radar. Carrying only pistols, the pair dressed in shorts and Hawaiian shirts to masquerade as tourists if they were captured or ended up in Romanian waters.

A radio intercept indicated Russian special forces were still present on the island, but they didn't open fire and were later evacuated by boat. Ramses and the pilot soon returned and dropped the flag.

Watch a Video



Scan this code for a video on the strategic importance of Snake Island.

Subsidies Are Called A 'Waste'

By Peter Landers

SHANGHAI—The chairman of drugmaker Roche denounced the recent boom in industrial subsidies by the U.S. and European governments and called them a "waste of money."

Roche's Severin Schwan used a visit to Shanghai for a business forum to criticize support that Western nations have increasingly offered to give their manufacturing industries a boost against competition from China and other nations.

The revival of subsidies in the U.S. and Europe "distorts the value of competition and a level playing field," Schwan said. "I really see a danger that people are jumping on that wagon."

Schwan is chairman of a council of international business leaders that advises the mayor of Shanghai. He spoke on Sunday at the council's annual meeting after a visit to Beijing in which he told the country's vice premier that Switzerlandbased Roche was full of confidence in China's economic prospects, state media reported.

The U.S. and European Union have long accused China of giving its companies an unfair edge through subsidies, easy access to credit and other government support. One estimate by the Center for Strategic and International Studies, a Washington think tank, found the scale of China's state support for its industries by a broad definition reached nearly 5% of its annual national income.

The EU is planning tariffs on Chinese electric vehicles that the EU says are needed to even out the playing field.

Schwan said such Western policies were counterproductive because they encouraged companies to put their hands out for government favors. He didn't comment on

China's subsidy policies, but suggested Beijing shouldn't try to follow the U.S. and Europe. 'Here in China, you have a chance to do the right thing."

GERMANY

Chancellor's Party **Ekes Out a Victory**

The Social Democrats of Chancellor Olaf Scholz won a narrow victory over a growing far-right party in Brandenburg on Sunday, three weeks after the far right made gains in two other states in eastern Germany. Scholz's three-party governing coalition has fared poorly in elections so far this year.

According to the state electoral administration, the Social Democrats won 30.9% of the votes in the election to the parliament of Brandenburg, which surrounds Berlin. The far-right Alternative for Germany was at 29.2%, ahead of a new leftist movement, the Sahra Wagenknecht Alliance, at 13.5% and the center-right Christian Democrats at 12.1%. -Associated Press:

FRANCE

Centrists Fill Much Of New Cabinet

New conservative Prime Minister Michel Barnier formed his cabinet, drawing ministers primarily from the centrist ranks of President Emmanuel Macron.

Barnier named Antoine Armand, a 33-year-old lawmaker from Macron's party, as finance minister. He appointed Jean-Noël Barrot, junior minister for Europe and a member of a centrist party in Macron's coalition, as foreign minister. Defense Minister Sébastien Lecornu, a close Macron aide, will stay in his job. Barnier also recruited ministers from his

own party, Les Républicains. The new government is bereft of representation from some parties that did well in

July's snap elections. -Noemie Bisserbe **SRI LANKA**

Marxist Lawmaker Wins Presidency

Marxist lawmaker Anura Kumara Dissanayake won the presidential election, according to data released by the Election Commission on Sunday, as voters rejected the old political guard that has been widely accused of pushing the South Asian nation toward economic ruin.

Dissanayake, whose proworking class and anti-politicalelite campaigning made him popular among youth, secured victory over opposition leader Sajith Premadasa and incumbent liberal President Ranil Wickremesinghe, who took over the country two years ago after its economy hit bottom.

Saturday's election came as the country seeks to recover from severe economic crisis.

WORLD WATCH



-Associated Press HOPPING GLAD: Revelers clinked beer steins at the 189th Oktoberfest in Munich on Sunday.

Last Week: S&P 5702.55 ▲ 1.36% S&P FIN ▲ 2.35% S&P IT ▲ 0.97% DJ TRANS ▲ 0.16% WSJ\$IDX ▼ 0.21% 2-YR. TREAS. yield 3.573% NIKKEI 37723.91 ▲ 3.12% See more at WSJ.com/Markets

Key Borrowing-Cost Gauge Rises

U.S. Treasury yields are a reminder that an interest-rate cut can do only so much

By Sam Goldfarb

The Federal Reserve finally cut interest rates. One key gauge of borrowing costs has been going up anyway.

Yields on longer-term U.S. Treasurys have ticked higher since the Fed approved a 0.5percentage-point rate cut last

week. The yield on the benchmark 10-year U.S. Treasury note, which helps set interest rates on everything from mortgages to corporate bonds, settled Friday at about 3.73%, up from 3.64% the day before the Fed's move. The climb is a reminder that the Fed doesn't have complete control over borrowing costs in the country. The central bank manages short-term rates that banks charge each other for overnight loans, which shift costs on credit-card debt and other types of floating-rate loans.

But rates on a lot more debt are driven primarily by swings in Treasury yields. Those are set by where investors think the Fed's shortterm rates will go, rather than where they are now.

Treasury vields are about a percentage point lower than they were earlier in the year, when rate cuts seemed more uncertain. But there is no guarantee that they will fall any further if the economy remains stable, potentially frustrating potential home buyers and other borrowers hoping

for bigger declines.

John Madzivire, head of Treasurys at Vanguard, said his team is betting that yields will likely rise a little more, noting that the market is still positioned for rates to go lower than most Fed officials projecting. "If they're not going to be as aggressive as the market is pricing, in that scenario 10-year yields actually go higher," he said.

The post-Fed climb is particularly notable because of the debate over whether the central bank should have

kicked off its rate-cutting campaign by lowering its benchmark federal-funds rate by 0.25 percentage point or the more aggressive 0.5 point.

Advocates for a larger cut were generally more concerned about the economy. They believed the Fed should take a bolder step to prevent further weakening in the labor market. But the size of the cut might not have mattered that much. In fact, the choice might have helped drive yields higher, according to some investors. In

Please turn to page B9

Intel Falls From Chip Behemoth To Buyout Target

By Asa Fitch

Three years ago, Intel was worth more than double its current value, and Chief Executive Pat Gelsinger was on the prowl for acquisitions.

Now Intel itself is a takeover target, in a sign of how strategic missteps and the artificial-intelligence boom have combined to reshape the fortunes of America's most-storied semiconductor company.

A recent acquisition approach by Qualcomm, reported by The Wall Street Journal on Friday, reflects a vulnerability with few precedents in Intel's 56-year history. The problems started with manufacturing setbacks before Gelsinger took the helm. And they have worsened as the CEO pursued a costly turnaround strategy that failed to foresee how the explosion of interest in AI would fundamentally redirect demand toward a type of chips made by rival Nvidia.

"Over the past two to three years the shift to AI was really the nail in the coffin for them. said Angelo Zino, a veteran industry analyst at CFRA Research. "They just didn't have the right capabilities."

Even if Intel proves receptive, a deal with Qualcomm is far from certain for regulatory and other reasons. But the idea of the smartphone-chip giant acquiring Intel would have been almost unthinkable not that long ago.

Intel reigned for decades as the world's most-valuable semiconductor company, its chips nearly ubiquitous in personal computers and servers. In an industry where specialization was increasingly the norm, it was a rare company that designed and manufactured its own chips-and it was the world leader in both.

By the time Gelsinger became CEO in early 2021, Intel had lost some of its mojo, hav-Please turn to page B8

STREETWISE | By James Mackintosh

Fed Flies Blind, Investors Are Meh

ou can spend a lot of time on Federal Reserve kremlinology, analyzing policymaker statements and forecasts. Or you can ignore what they say, and just look at what they do-as markets decided after the Fed's supersize rate cut on Wednesday.

The basic question is whether half-percentagepoint cuts are the new normal. Fed policymakers say not: Only one official predicted cuts of more than a quarter point at the two meetings between now and the end of the year. Two, in their "dot plot" forecasts, predicted no more cuts, and the rest said one or two

But who cares what they sav? Markets got into the spirit of dovishness that Chairman Jerome Powell now exudes and concluded that there's a decent chance that half a point is the new quarter point.

utures traders set their central case for the end of the year of another three-quarters of a point of cuts, meaning at least one of the two remaining meetings needs to be a double cut for them to make money. By Friday, they had priced in a 25% chance that both meet-

Higher, With More Uncertainty

Fed policymakers are growing less sure about where rates will settle in the long run.

Longer-run interest-rate forecasts

DECEMBER 2019 DECEMBER 2023 SEPTEMBER 2024 Each dot is a Fed official's forecast. ∞ ∞ ∞ ∞ Median

 ∞

Sources: Federal Reserve (forecasts); Tullett Prebon (yields); CME Fedwatch (probability)

ings have double-sized cuts, and the same chance that the Fed does what its median policymaker says and merely cuts a normal quarter-point at each meeting.

 ∞

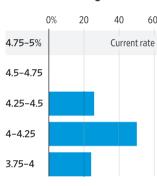
The cynic in me supports the idea of ignoring the central bank's own prognostications, since it is terrible at predicting what it will do. Just this year the median

 ∞

Treasury yields since June



Futures-implied probability of Fed interest rates after **December meeting**



policymaker's rate forecast has swung from predicting three (normal quarter-point) rate cuts by the end of this year, down to one in its dot plot three months ago, and

ing last week's double. Why should investors think this particular prediction is the right one?

now back up to four, includ-

t's even worse if you try to look further out. Much of what matters when assessing how the Fed will react to any given economic development is where it thinks rates will land in a balanced economy—what economists call the neutral rate, or r-star, Unfortunately policymakers are showing their confusion about where it lies, with their estimates ranging from 2.4% to 3.8%, and much higher than before the pandemic.

This wide gap reflects the uncertainty about future inflationary pressures from deglobalization, a spendthrift government more willing to interfere in the economy, military and green spending and the aging global population. For what it's worth, the overnight indexed swap market is pricing long-term rates higher than the median policymaker forecast.

And that's before you get to the logical problem created by the feedback from Please turn to page B9

♦ Heard on the Street: Fed can't protect stocks...... B9

Google Emails Show Worry Over Ad Power

By Jan Wolfe AND MILES KRUPPA

ALEXANDRIA, Va.—Trial proceedings in the U.S. government's antitrust case against Google's advertising business have provided a rare window into internal company anxieties about its central role in the buying and selling of ad space online.

The Alphabet unit is on trial over its software used to place display ads, those ubiquitous digital billboards served in fixed boxes on millions of websites every day.

The Justice Department spent nearly two weeks presenting evidence for its claims that Google has a stranglehold on this advertising technology, and abuses that dominance to extract anticompetitive rates from advertisers and publishers who sell ad space.

Government lawyers have said some of their strongest

evidence is in Google's own internal communications.

Witnesses so far included YouTube Chief Executive Neal Mohan, who previously ran Google's display-ads business and faced heat on the witness stand for an email he wrote to colleagues in 2010. At the time, a new crop of ad-tech companies were threatening Google's bottom line.

'One way to make sure we don't get further behind in the market is picking up the one with the most traction and parking it somewhere," Mohan wrote.

Google ended up buying one such company, AdMeld, for \$400 million in 2011. Google shut down AdMeld two years later after incorporating some of the startup's technology into its ad exchange, known commonly as AdX.

The Justice Department argued that AdMeld was part of Please turn to page B8

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BUSINESS NEWS

Peloton revamps its marketing strategy with a focus on millennial men. **B3**

HEARD ON THE STREET

Investors are wary of satellite companies' new niche in space. B9

Hill Loved Nike but Left It; Now, He Is Back as the Boss

By Inti Pacheco

Nike's incoming chief executive is known for welling up with tears when he speaks about the company because he cares so much about it.

Elliott Hill started working at the sneaker giant in 1988 as an intern, taking calls from customers and moving boxes in a warehouse. Over more than three decades, he climbed to be one of its top executives before he was passed over for CEO and retired in 2020.

Last week, Nike announced that Hill was coming back, this time to take the helm of a struggling company. Its current chief, John Donahoe, is retiring after making strategic blunders that caused the company to lose ground to competitors.

The decision to change CEOs and bring Hill back was led by Nike's 86-year-old co-



Elliott Hill faces challenges, including fragmented industry.

founder, Phil Knight, who is takes and lead Nike's turnchairman emeritus and the largest individual Nike shareholder, said a person familiar with the matter. Just a few months ago, Knight had expressed support for Donahoe.

Starting in October, Hill's job will be to undo recent mis-

around. He faces steep challenges: The industry is increasingly fragmented. Rivals like Hoka and On are taking market share from Nike's core running category and its lifestyle

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Tax executives / to encounter election-related volatility

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J&J Files Its Third Talc Bankruptcy Case

By Andrew Scurria

Johnson & Johnson filed an unprecedented third chapter 11 case seeking to end the mass lawsuits linking its cosmetic talc products to cancer, this time with the backing of tens of thousands of personalinjury plaintiffs for a roughly \$8 billion compensation plan.

healthcare-products company is taking another shot at ending the long-running talc lawsuits in bankruptcy after two failed attempts. The latest chapter 11 filing will once again test if financially healthy businesses such as J&J can use the chapter 11 process to solve legal problems stemming from allegedly dangerous or defective products.

J&J filed its first chapter 11 case for its talc liabilities in 2021 in Charlotte, N.C., its second last year in Trenton, N.J., and its third in Houston. Friday's filing automatically halts the more than 62,000 talc law-

suits pending in courts around the country and opens a path for J&J to settle those claims collectively in a

single forum. bank-The ruptcy resolution that has eluded J&J thus far would

cap its exposure to a long-running legal uncertainty that has been a factor in its stock price for years. The focus now shifts to bankruptcy court, where a Houston judge will weigh the wishes of the claimants who support J&J's plan against those who don't.

The bankruptcy follows a monthslong effort by J&J to build support among injury plaintiffs for a roughly \$8 billion compensation plan for claims that its baby powder contained cancer-causing asbestos. The company has denied that its talc products are unsafe and blamed legal advertising and unscrupulous trial lawyers for fueling talc

litigation. If the company's plan wins court approval, it would resolve all current and future lawsuits linking the talc products to ovarian and other gynecological cancers, a final resolution J&J can't get any-

where else but in bankruptcy. Even claimants who voted down the offer from J&J would be bound by its terms, and the company would eliminate the risk of large jury-trial verdicts like the \$2.1 billion judgment it paid to a group of 20 ovarian-cancer plaintiffs in 2021. Future claimants—talc users who aren't currently sick but might develop cancer in the future—also would be covered by the plan and barred from pursuing J&J in

the civil justice system. Of the women who voted on the company's offer in recent months, some 83% voted yes, the company said Friday. J&J said its plan would involve payments totaling \$10 billion over 25 years, amounting to \$8 billion in present value.

J&J will still face legal challenges to its bankruptcy tactic, known as the Texas Two-Step. The company used Texas corporate law to move its talcrelated liabilities in 2021 into a corporate affiliate specially designed to file for chapter 11. By isolating the talc liabilities, J&J could unlock the legal protections of bankruptcy without placing any of its valuable busi-

ness assets in chapter 11. A handful of corporate defendants have done the same in recent years to move more than a quarter million personal-injury lawsuits into bankruptcy court and stop plaintiffs from advancing cases in state courts.

Representatives for talc plaintiffs are expected to scrutinize the voting results released by J&J Friday and contest the choice of Houston as its latest bankruptcy venue. J&J will face a challenge to the fundamental question of whether as a solvent business it can use bankruptcy at all. Despite its resources, the company argued it should be able to settle talc liabilities in chapter 11 because resolving mass lawsuits is a valid use of bankruptcy law.

The company's prior two through bankruptcy court ended when its subsidiary LTL Management, filled with talc liabilities, was deemed too financially healthy to qualify for protec-

The filing opens

a path for J&J to

settle claims

collectively in a

single forum.

tion. An appeals court last year found that LTL"highly solvent" and wasn't eligible to be in bankruptcy because of its access to J&J's balance sheet. When

LTL refiled in New Jersey, a bankruptcy judge dismissed that second

J&J used its subsidiary Red River Talc on Friday as its vessel to carry talc liabilities into chapter 11. The Houston judge who will oversee the case, Christopher Lopez, isn't bound to follow the same legal rationale as in New Jersey and could reach a different conclusion about J&J's ability to access the protections of chapter 11. J&J faces over 62,000 pending lawsuits in the U.S., but accounting for claimants who have hired lawyers and haven't sued, the number hovers closer to 100,000, according to estimates from both

sides of the talc litigation. Most law firms with talc cases have recommended that claimants support the plan and worked to secure votes in its favor.

Hill Is Back At Nike As the Boss

Continued from page B1

offerings. Another hurdle will be managing key franchises like Air Jordan and Dunk, which Nike oversold in recent years. Nike is cutting back on new releases under those models in an effort to engiscarcity. Executives warned in June that the move would likely hurt the company's sales growth rate.

Another big task is rebuilding the company's culture, which deteriorated over the past several years as restructurings and strategic missteps took a toll on employee morale. Hill is emblematic of a culture that Nike veterans hope to see restored, but it will be hard to convey the message to the company's more than 80,000 employees, former executives say.

"I know things haven't been easy, and we certainly have taken our fair share of shots," Hill said in a memo sent to staff. "Being at the top and being the best has never been easy." In a video shared with staff, he asked employees to rally together and "move with speed and a sense of urgency."

A Nike spokesman said Hill wasn't available for an interview because the company is in a quiet period ahead of its quarterly earnings report on Oct. 1.

The announcement of his return immediately boosted employee morale—and Nike's stock price.

Hill, 60 years old, is known

as a warmhearted Nike veteran who identifies with the rank-and-file because of his 32-year experience at the company.

While Donahoe's leadership approach leaned heavily on consultants, Hill embodies Nike's culture of dreaming about changing the world, former executives say.

In his video to staff, Hill said if he had to dream of be-



Nike's House of Innovation store on Fifth Avenue in Manhattan..

Hill held

leadership

positions in

North America

and Europe.

BUSINESS & FINANCE

ing an athlete, he would choose to be the anchor leg of a 4 x 400 relay. Even though he isn't a fast runner, he said he welcomes the idea of being part of a team and the pressure of finishing a task.

Hill wasn't a track star. He earned a bachelor's degree in kinesiology and worked as an assistant athletic trainer for the Dallas Cowboys.

He had his first encounter with Nike when he was a graduate student in Ohio, where a

Nike executive named Tim Joyce came to speak. Hill asked him for a job, then chased Joyce for about six months until Joyce hired him as an intern in the company's regional sales office in Memphis, Tenn.

The rookie salesman started on the apparel side of the business, with a tough job selling neon and Lycra to shoppers in Oklahoma and Texas.

Hill rose through the ranks to hold leadership positions in North America and Europe. He was promoted to president of consumer and marketplace by former Nike chief Mark Parker in 2018, after Parker's

potential successor, Trevor Edwards, resigned during an investigation by the company into complaints by female employees of a boys-club cul-

Hill was one of the leaders who later gathered with employees as part of an initiative to encourage men to be better allies for their female co-

During one of the meetings, Hill shared details about his Texas upbringing by a single mother and

> told employees he wasn't at the company because of the brand or the products. "I'm here be-

> cause of the people," he said at the gather-This won't

be the first time the number of new product launches, halve the time it took to develop new products and sell directly to consumers through its website and apps.

Hill led the part of the plan focused on expanding the company's direct sales to consumers and reshaping Nike's partnerships with bricks-andmortar retailers like Foot Locker.

Hill was among a small up.

group of executives who were passed over in 2019 when Donahoe, a Nike board member, was selected as the company's next CEO. Hill retired the following year.

When the pandemic hit in 2020, Donahoe accelerated the digital sales push to reach shoppers stuck at home on Covid-19 lockdowns.

He soon ordered an aggressive exit from longstanding bricks-and-mortar retail partnerships that Hill had helped build.

Donahoe's push for digital sales and overreliance on Nike's cash-cow franchises such as Air Jordan and Dunk worked initially. But ultimately the strategy backfired, and the company's sales growth hit a wall.

Hill has said that aside from his mother, Nike's Knight is the person he has tried hardest to make proud. When Hill is asked what makes him proud, he points to the people with whom he has worked at

"Watching people around me grow, develop and be successful and know that I hopefully had a role in identifying, helping develop those individuals into who they became," Hill said in a podcast interview last year.

As he spoke, his eyes teared

bond market is thriving, de spite the European Central Bank ending reinvestments of matured corporate bonds in the market in July 2023, LBBW credit analysts say in a

"The strong demand from investors for corporate bonds more than compensated for the loss of the ECB as a major

The ECB has reduced its corporate-bond holdings from around €390 billion, or about \$435 billion, at its peak to around €301 billion as of Sept.

"The ECB's continuous but slow withdrawal is no problem for the bond market to cope

Eurozone Corporate

note.

Bonds Are Still Hot

The eurozone corporate-

investor," LBBW says.

with," LBBW says.

'Transformers One' Makes Its Debut



The untold origin story earned \$25 million in North America.

Estimated Box-Office Figures, Through Sunday

		S	IS	
Film	Distributor	Weekend*	Cumulative	% Change
1. Beetlejuice Beetlejuice	Warner Bros.	\$26.0	\$226.8	-49
2. Transformers One	Paramount	\$25.0	\$25.0	_
3. Speak No Evil	Universal	\$5.9	\$21.4	-48
4. Never Let Go	Lionsgate	\$4.5	\$4.5	_
5. Deadpool & Wolverine	Disney	\$3.9	\$627.3	-25
*Friday, Saturday and Sunday in No	rs	Soi	urce: Comscore	

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Peloton Revamps Marketing Approach

Fitness company plans to dial back promotions, target male consumers

By Katie Deighton

Peloton's chief marketing officer has a strategy to get the beleaguered fitness company back on track: Don't talk only about the bike.

Lauren Weinberg, who joined the company in January, is readying a marketing campaign designed to return to relevance a company that spent the past few years righting itself following a pandemic boom and bust. Peloton in August reported its first rise in sales in more than two years, surprising analysts

Fresh ads and communica-

tions from the brand will aim to convey that Peloton is a suite of services for a range of customers with varying fitness goals—not just a stationary bike seller. The target: particular groups of consumers that show sales potential, such as millennial men, some of which view the company as a women's brand, Weinberg said.

"We believe that we were hitting some diminishing return in our previous strategy, because we've been talking to the same people with very similar messages," Weinberg said. The company hopes that the marketing pivot, employed with less marketing spending than in the past, will generate more demand for its full range of products.

TV commercials that previously aired year-round will now be rationed primarily for the fall and winter to conserve one of the most-expensive media buys for retail's busiest period. And the company is cutting back on promotions and some international marketing to concentrate on the U.S. mar-

The stakes are high for the marketing chief. Peloton is embarking on a turnaround plan that will be scrutinized closely by almost everyone who bore witness to its stock's tremendous rise and subsequent fall. Analysts and shareholders want to see if the well-known brand can make more money per customer, and recruit new ones for less than it did previously.

Peloton said it reduced its sales and marketing expenses by \$26 million in the quarter that ended June 30, a 19% cut

125 100 75

Peloton's monthly share price

2020 Source: FactSet

from the same period the year prior, and expects continued year-over-year reductions in the year ahead. Weinberg had less money and fewer staff to help her allo-

cate it than her predecessors.

Peloton spent the past few years trying to win over new users with discounted hardware and other promotions. Teams' targets were tied to short-term sales metrics, leaving little budget available for longer-term brand building marketing, Weinberg said. The short-term mindset also left Peloton targeting the same amorphous group of customers over and over again—fitness enthusiasts.

The company now plans to run fewer promotions and sales so it can increase the average price paid per hardware unit sold.

"And we're really shifting to ask, what are the other audiences for which we have excellent product market fit? We know we have something for these people, but they maybe don't perceive us as

having the right solutions for them," Weinberg said.

That includes millennial males, one of Peloton's new core target audiences. Company research found some men thought Peloton, which once released a much-maligned holiday commercial about a man buying a stationary bike for his "nervous" wife, was a brand for women, Weinberg said.

The company has moved to build more products men might like, such as a virtual cycling game available on its connected bike and a weight-lifting app now in early consumer testing. Now it plans to promote them in a way that better speaks to men than its campaigns historically have, advertising through media companies and influencers popular among male audiences.



AMD's Lisa Su expects a broadening beyond GPUs.

As AI Matures, Chips Will Get Customized

By Isabelle Bousquette

Future computer chips may be able to help ease the alarming energy demands of generative artificial intelligence, but chip makers say they need something from AI first: a slowdown in the pace of change.

Graphics processing units have dominated the bulk of training and running large-scale AI models so far. The chips, originally built for gaming graphics, offer a unique blend of high performance with the flexibility and programmability required to keep up with today's constantly shifting swirl of AI models.

Nvidia's dominance in the GPU market has propelled it to a trillion-dollar valuation, but others, including Advanced Micro Devices, also make the chips.

As the industry coalesces around more-standardized model designs, there will be an opportunity to build more custom chips that don't require as much programmability and flexibility, said Lisa Su, chief executive at AMD. That will make them more energy-efficient, smaller and cheaper.

"GPUs right now are the architecture of choice for large language models, because they're very, very efficient for parallel processing, but they give you just a little bit of programmability," Su said. "Do I believe that that's going to be the architecture of choice in five-plus years? I think it will change." What Su expects isn't a shift away from GPUs, but a broadening beyond GPUs.

Nvidia and AMD haven't been vocal around specific plans. Nvidia declined to comment for this article.

Some custom chips are already at work handling aspects of AI. Large cloud pro-

viders like Amazon.com and Google have developed their own custom AI chips for internal use, such as Amazon's AWS Trainium and AWS Inferentia, and Google's tensor processing units, or TPUs. These are built to execute specific functions.

Custom chips can be more energy efficient, cheaper and smaller because they can be hard-wired to a given degree: They can perform one specific function, run one specific type of model or even one specific model itself, said Shane Rau, research vice president for computing semiconductors at market intelligence firm International Data Corp.

But the market for commercially selling these super-custom, application-specific chips is still immature, Rau said, a symptom of how much innovation is happening in AI models.

Highly customized chips also present a challenging lack of flexibility and interoperability, said Chirag Dekate, a vice president analyst at research firm Gartner. To the extent they are programmable, they are very difficult to program, typically requiring custom software stacks, and it can be difficult to make them work

with other kinds of chips.

Many chip offerings today exist on a continuum, with some GPUs that can be more customized and some specialized chips that provide a level of programmability. That gives chip makers an opportunity, even before generative Al be-

comes more standardized.

There is no one-size-fits-all when it comes to computing, said Su. AI models in the future will use a combination of different types of chips, including GPUs and more specialized chips still to be developed, for various functions.

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TIM HIGGINS

As Musk Picks Fights, Stakes Are Rising

f Elon Musk becomes chief red-tape cutter in a second Trump administration, he is already giving a taste of what's to come.

His recent comments suggest the Federal Aviation Administration and Environmental Protection Agency would be where he directs scrutiny if he is put in charge of leading Donald Trump's government efficiency commission, tasked with reducing government and regulations.

On Tuesday, Musk said he planned to sue the FAA. claiming it was engaging in "lawfare" and "regulatory overreach" after seeking roughly \$633,000 in fines against his rocket company, SpaceX, for alleged violations. Those comments followed similar critiques a week earlier of the EPA.

"The FAA space division is harassing SpaceX about nonsense that doesn't affect safety," Musk tweeted.

No businessman today works regulators the way Musk does-threatening, cajoling, flattering—as he advocates for his companies' interests. He has essentially gone through an entire can of alphabet soup of agencies, from the SEC and NHTSA to EPA and NLRB. In doing so, Musk is making it clear he is willing to fight over any perceived slight.

The risk is that such tactics, often done publicly before his almost 200 million X followers, makes even a tough agency think twice about going up against him again—especially as appointed leadership thinks about post-government work or underlings worry about losing protection once an administration turns over.

Now, Trump is promising to give Musk even more leverage in such fights: the implied power of the presi-

Musk would say he isn't against regulations in general—just specific ones that don't make sense to him.

'If you sum up all of the times that I had an argument with regulators—of hundreds of regulators over decades-it can sound really terrible except they forget to mention that there were 10 million regulations we complied with and only five that I disagreed with," Musk said last year during a conference.

Still, he often talks about how regulations can be like little strings that collectively tie down a giant like Gulliver, and strip us of our freedoms.

History would suggest that one man's red tape is another's line of defense against those masters of the universe unconcerned about the safety of employees, customers or the world at large.

Musk has effectively said so himself, in particular about the FAA, as he has advocated for rules around the development of artificial intelligence.

"Airplanes used to crash frequently!" Musk posted last year. "Eventually, so many people died that the FAA was created to ensure that commercial aircraft makers & airlines didn't cut corners on safety. Now, flying on an airliner in America is super safe."

A year ago, Musk sounded a bit more measured about the FAA. "In fairness to the FAA, it is rare for them to cause significant delays in launch," he tweeted. "Overwhelmingly, the responsibil-



Elon Musk, a frequent attacker of regulators, could have power over them in a Trump presidency.

ity is ours."

But now, as SpaceX is blasting rockets into space at a record rate for paying customers and to expand its Starlink satellite business. Musk is laying blame for delays with the agency, warning: "The fundamental problem is that humanity will forever be confined to Earth unless there is radical reform at the FAA!'

he FAA hasn't responded to Musk's social-media barbs. In announcing the proposed fines, Chief Counsel Marc Nichols said the agency was driven by safety. "Failure of a company to comply with the safety requirements will result in consequences," he said in a statement.

A Trump victory could give the country, according to Musk, a rare opportunity to clean house unseen since the Reagan administration's massive deregulation effort.

"It's been a long time since there was a serious effort to reduce the size of government and to remove absurd regulations," Musk said during an appearance this month at the "All-In Podcast" conference.

While he skirted what exactly he would do, Musk made it clear that the EPA was the kind of agency on his mind. He pointed to a proposed fine of about \$148,000 by the EPA announced this month over claims of SpaceX improperly discharging deluge water and spilling liquid oxygen at its South Texas launchpad.

Musk called it an example of "irrational regulation" and compared the company's actions to dumping drinking water on the ground. "There was no actual harm done," he said. "It was just water to cool the launchpad during lift off."

Observers in Texas disputed Musk's characterization. "Elon & Co is making this way harder than it has to be," tweeted Chap Ambrose, an Austin-area programmer who has been critical of Musk's environmental record in the state. "If a corporation wants to discharge

anything into Texas water it needs a permit. Even space companies. That process allows independent experts to measure, set limits, and en-

sure minimal impact.' In the end, Musk said SpaceX agreed to the proposed settlement because the EPA threatened to withhold approval for future launches. The EPA hasn't re-

sponded to Musk's claims.

t isn't just the FAA or EPA where Musk's businesses have make-orbreak relationships, which is why some observers have raised conflict-of-interest concerns about the potential of his role in a Trump administration.

Next month, Musk has promised to reveal **Tesla**'s robotaxi, a technology that regulators are still trying to digest as they consider safety ramifications.

Neuralink announced a regulatory win this past week. Musk's brain-implant company said the Food and Drug Administration had awarded its experimental Blindsight microchip, which aims to restore sight, a special designation intended for medical devices aimed at treating life-threatening or irreversible debilitating conditions.

If successful, it sounds like the stuff out of "Star Trek: The Next Generation."

'Provided the visual cortex is intact, it will even enable those who have been blind from birth to see for the first time," Musk said this past week.

It is those kinds of advancements that excite his fans and why it can be so hard to rein him in amid public support.

Cards Against Humanity Sues SpaceX for Trespassing

The suit seeks

\$15 million for

damages to land

the party-game

maker owns.

By GINGER ADAMS OTIS

The maker of Cards Against Humanity, the party game that delights in shocking its players, has filed a \$15 million lawsuit against SpaceX, alleging that Elon Musk's company trespassed and damaged land the games company owns in

The suit, filed Thursday in Texas District Court, says that SpaceX has used the land owned by Cards Against Humanity for construction materials and other debris. The \$15 million is to cover damages, including what Cards Against Humanity says is the destruction of natural vegetation.

"SpaceX has treated the Property as its own for at least six months without regard for CAH's property rights nor the safety of anyone entering what has become a worksite," the suit alleges. The intrusion began when SpaceX began building a project of some kind near the land, according to CAH.

Musk's aerospace company "never asked for permission to conduct these activities and has never reached out to CAH to explain or apologize for the damage caused," the court documents sav.

SpaceX didn't immediately respond to a request for comment Saturday.

CAH bought the tract of land near the U.S. border with Mexico in 2017 as part of a public stunt to oppose then-President Donald Trump's plans to build a wall along the

southern border.

About 150,000 people donated about \$15 each to buy the land. CAH left the property in its natural state, according to a website about the lawsuit

the games comcreated. pany Pictures filed by CAH with the court in connection with the lawsuit purport to show the undeveloped land in 2017, as well as

current pic-tures of the same terrain covered in gravel and construction material, including heavy machinery.

After contacting SpaceX about its alleged unauthorized use of the land, Musk's company tried to buy the property, CAH's suit says.

It was "a lowball offer for less than half our land's value," CAH alleges.

If CAH wins its case, the company has pledged to split lawsuit's the proceeds among 150,000 original donors who helped buy the land, with each getting up

"While this isn't enough to compensate our subscribers for the anguish they've suffered witnessing Elon Musk defile their once-verdant land—where wild horses galloped freely in the Texas moonlight—we think it's a pretty good start," CAH

Musk, one of the world's wealthiest people, is the CEO electric-vehicle maker Tesla, and CEO and founder of SpaceX. In 2022, he purchased the social-media platform Twitter, now named X, for \$44 billion.

The billionaire entrepreneur has clashed with governments and U.S. regulatory agencies as he charts an ambitious course for expansion and growth in

his companies. He recently said SpaceX would sue the Federal Aviation Administration after air-safety regulators alleged that the company violated rocket-

launch regulations during two

The FAA is seeking about \$633,000 for three different alleged violations during two SpaceX launches last year. The agency oversees commercial rocket launches and re-entries of spacecraft as part of its mandate to ensure safe operations in U.S. airspace.

flights, and proposed fines.

SpaceX sued the Justice Department last year after the agency brought a hiring-discrimination case against the company. Early this year, SpaceX separately sued the National Labor Relations Board. That lawsuit came after an agency official accused SpaceX of violating a federal workplace law when the company fired workers who had circulated a letter criticizing

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PUBLIC NOTICES

IN THE GRAND COURT OF THE CAYMAN ISLANDS FINANCIAL SERVICES DIVISION FSD CAUSE NO. 247 OF 2024 (DDJ) IN THE MATTER OF the Companies Act AND IN THE MATTER OF POINTGUARD VENTURES I, L.P.

IN THE MATTER OF the Companies Act AND IN THE MATTER OF POINTGUARD VENTURES I, L.P. TAKE NOTICE that that a petition for an order that PointGuard Ventures I, L.P. whose registered office is situated at Maples Corporate Services Limited, PO Box 309, Ugland House, South Church Street, George Town, KY1-1104, Cayman Islands (the Fund) be put into liquidation and wound up in accordance with the provisions of the Companies Act has been presented to the Grand Court of the Cayman Islands. The petition was presented by Suning International Limited, a company incorporated under the laws of Hong Kong Special Administrative Region (the Petitioner) whose registered office is situated at Rm 05-13, 13A Floor, World Finance Centre South Tower, No. 17 Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong SAR. Copies of the petition and supporting affidavits may be obtained free of charge from the petitioner's attorneys, Appleby (Cayman) Ltd, 9th Floor, 60 Nexus Way, PO Box 190, Camana Bay, Grand Cayman, Cayman Islands KY1-1104, diee@applebylobal.com, 1345-994-9900.

The Petition seeks an order that Mitchell Mansfield of Kroll (Cayman) Ltd., 3rd Floor, 90 North Church Street. George Town, Grand Gayman KY1-1204, Cayman Islands, and Li Hang Chun (also known as Jonathan Li) of Kroll (KI) Limited, Level 3, Three Pacific Place, 1 Queens Road East, Hong Kong, be appointed as joint official liquidators of the Fund. Any creditor or shareholder of the Fund may be heard on the questions whether or not a winding up order should be made and, if a winding up order is made, who should be appointed as official liquidator(s) of the Fund. Any creditor or shareholder of the Fund may be heard on the questions whether or not a winding up order should be made and, if a winding up order is made, who should be made and, if a winding up order is made, who should be appointed as official liquidator(s) of the Fund. Any creditor or shareholder of the Fund may be heard on the questions whether or not a winding up order should be made and, if a winding up order is

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Notice of Secured Party's Sale at Public Auction on October 14, 2024

SECURED PARTY'S SALE AT PUBLIC AUCTION ON MONDAY, October 14, 2024, adjourned from the previously scheduled dates of June 14, 2024 and August 15, 2024, will commence at 4 p.m. ET. Certain assets of TruelNorth Projects, LLC, a Company formed under the laws of The Bahamas (the "Secured Party"), to the highest bidder at a public auction held via remote communication. The assets for sale are a twenty percent Membership Interest in True North Services, LLC, a Nevada limited liability company, together with all proceeds and substitutions thereof, all cash, securities and other moneys and property paid thereon, all rights to subscribe for securities declared or granted in connection therewith, and all other cash and noncash proceeds of the foregoing (all hereinafter referred to as the "Asset"). The Secured Party will make absolutely no representations or warranties, including those related to title, possession, quiet enjowment, or the like in this sale. Any document, statement, or information provided to any potential bidder is provided solely for informational purposes and no representation or warranty as to the accuracy of completeness thereof is enjowment, or the like in this sale. Any document, statement, or information all purposes and make by the Secured Party. The Debtor's Asset will be effered and sold pursuant to Article 9 of the Uniform Commercial Code of Delaware. The Secured Party and continue or suspend the sale hereby advertised or cause the sale to be further adjourned from time to time, without notice or publication, by announcement at the time and place appointed for such sale, or any adjournments, and, without further notice or publication, such sale may be to adjourned. The Secured Party shall not be obligated to make any sale pursuant to this notice and reserves the right to approve or reject any bids. Right is reserved to the Secured Party to the total the sale or any adjournments therein and to credit the purchase price against

Sale is AS IS, WHERE IS, WITHOUT REPRESENTATION OR WARRANTIES. Contact: Nelson Mullins Riley & Scarborough, LIP; One Financial Center, Suite 3500, Boston, MA 02111, Attn: Matthew Iverson; Email: TrueNorthSale@nelsonmullins.com

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Brazil: X Must Prove Compliance Elon Musk's X has moved to

comply with a key requirement set by Brazilian authorities to allow X return to the country, but Brazil's Supreme Court says the social-media platform must provide more documents to prove its efforts.

By Samantha Pearson, Alexa Corse and Ginger Adams Otis

In an apparent reversal in X's strategy, the court said Musk's company had hired lawyers to represent the platform in Brazil, one of the main requirements imposed by the country's judiciary.

Justice Alexandre de Moraes banned X on Aug. 30 for failing to block accounts he accused of spreading misinformation and hate speech, as well as refusing to pay more than \$3 million in fines and appoint a legal director in the country—a requirement under Brazilian law.

In a court filing Saturday, de Moraes said X must provide further documents to show it is complying with his stipulation the company appoint a legal representative and gave X five days to prove it.

The ban effectively cut off access to the platform in one of its biggest markets. De Mo-

raes has said the crackdown

on X is part of wider efforts

by the Supreme Court to clean



A protest in Sao Paulo against the ban on the platform.

up the internet and safeguard Brazil's democracy following violent attacks on the capital shortly after President Luiz Inácio Lula da Silva took office last year.

Musk and other critics, including many from Brazil's right, have condemned the justice's demands, accusing him of censorship and saying that many of the accounts that the Supreme Court sought to block belong to conservative politicians and busi-

ness leaders. The court said X can return if it pays its fines, appoints a new legal representative in Brazil and blocks accounts

flagged by the court. X didn't respond to a request for comment about the latest filing from the court. The battle between X and

Brazil's Supreme Court had further escalated last week. when the court accused Musk of using a technical maneuver to try to get around the ban. X switched network providers, which allowed some users in Brazil to regain access to the

X said it hadn't intended to evade the ban and that it was forced to swap network providers after it shut down its operations in Brazil, resulting in "an inadvertent and temporary service restoration to Brazilian users." The company also said at the time that it expected X would "be inaccessible again shortly" to people in



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MARKETS DIGEST

New to the Market **Public Offerings of Stock** IPOs in the U.S. Market

Initial public offerings of stock expected this week; might include some offerings, U.S. and foreign, open to institutional investors only via the Rule 144a market; deal amounts are for the U.S. market only

Expected pricing date	e Filed	Issuer/business	Symbol/ primary exchange	Shares	Pricing Range(\$) Low/High	Bookrunner(s)
9/25	11/18 2022	BKV Crude Petroleum and Natural Gas Extraction	BKV N	15.0	19.00/ 21.00	Barclays Capital, Citigroup, Evercore, Jefferies, Mizuho Securities
9/25	10/3 2023	Guardian Pharmacy Services Pharmaceutical Preparation Manufacturing	GRDN N	6.8	14.00/ 16.00	Raymond James, Truist, Stephens
9/25	9/3	BioAge Labs Research and Development in Biotechnology	BIOA Nq	7.5	17.00/ 19.00	Goldman Sachs, Morgan Stanley, Jefferies, Citigroup

Lockup Expirations

Below, companies whose officers and other insiders will become eligible to sell shares in their newly public companies for the first time. Such sales can move the stock's price.

Lockup expiration	ı Issue date		Symbol		Offer amt (\$ mil.)		Lockup provision		
Sept. 23	March 28, '24	Boundless Bio	BOLD	16.00	100.0	-72.50	180 days		
	March 28, '24	Alta Global	MMA	5.00	6.5	-45.91	180 days		
Sept. 28	April 2, '24	Massimo	MAMO	4.50	5.9	-18.67	180 days		
	April 2, '24	Zhibao Technology	ZBAO	4.00	6.1	-0.50	180 days		
Sources: LSEG Data and Analytics: Dow Jones Market Data									

IPO Scorecard

Performance of IPOs, most-recent listed first

		% Chg	From			% Chg	From
Company SYMBOL	Friday's	Offer	1st-day	Company SYMBOL	Friday's	Offer	1st-day
IPO date/Offer price	close (\$)	price	close	IPO date/Offer price	close(\$)	price	close
Cayson Acquisition CAPNU Sept. 20/\$10.00	10.00			Andretti Acquisition II POLEU Sept. 6/\$10.00	9.98	-0.2	0.1
Global Engine True GLE Sept. 20/\$4.00	4.18	4.5		Vine Hill Capital Investmen VCICU Sept. 6/\$10.00	t 10.00	-0.1	0.4
YHN Acquisition I YHNAU Sept. 18/\$10.00	10.01	0.1	0.1	Pheton True PTHL Sept. 5/\$4.00	4.22	5.5	11.6
Impact BioMedical IBO Sept. 16/\$3.00	2.33	-22.3	-13.1	Powell Max PMAX Sept. 5/\$4.00	3.84	-4.0	-4.0
Kairos True KAPA Sept. 16/\$4.00	2.19	-45.3	-15.8	GigCapital7 GIGGU Aug. 29/\$10.00	9.96	-0.4	0.2
Bicara True BCAX Sept. 13/\$18.00	25.61	42.3	9.4	Autozi Internet Technolog AZI Aug. 28/\$4.00	/ 1.00	-75.0	-61.8
MBX Biosciences MBX Sept. 13/\$16.00	22.55	40.9	-4.7	Black Spade Acquisition I BSIIU Aug. 28/\$10.00	1 9.97	-0.3	0.5
Zenas BioPharma ZBIO Sept. 13/\$17.00	19.00	11.8	4.7	Safe Pro True SPAI Aug. 28/\$5.00	3.02	-39.6	-29.3
Future Vision II Acquisition FVNNU Sept. 12/\$10.00	10.02	0.2	0.2	JBDI True JBDI Aug. 27/\$5.00	1.30	-74.0	-87.2
Galaxy Payroll True GLXG Sept. 12/\$4.00	5.79	44.8	30.1	WORK True Technology True WOK Aug. 23/\$4.00	e 4.50	12.5	25.0

Sources: Dow Jones Market Data; FactSet

Public and Private Borrowing

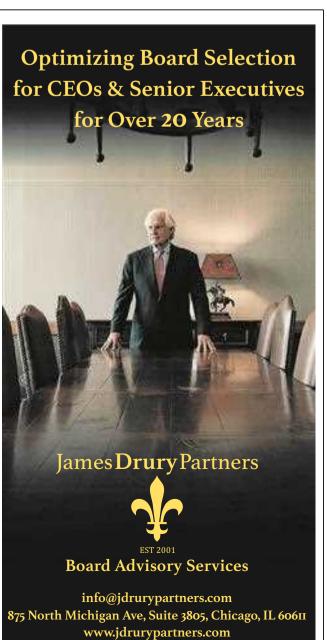
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Monday, September 23 Tuesday, September 24 Auction of 13 and 26 week bills: Auction of 2 year note: announced on September 19; settles on September 26announced on September 19; settles on September 30 Wednesday, September 25 Thursday, September 26 $Auction of 5 \ year \ note; \\ announced on September 19; settles on September 30 \ announced on September 19; settles on September 30 \ announced on September 19; settles on September 30 \ announced on September 19; settles on September 30 \ announced on September 19; settles on September 30 \ announced on September 19; settles on September 30 \ announced on September 19; settles on September 30 \ announced on September 19; settles on September 30 \ announced on September 19; settles on Se$ Auction of 17 week bill; Auction of 4 and 8 week bills; $announced \ on \ September \ 24; settles \ on \ October \ 1 \\ announced \ on \ September \ 24; settles \ on \ October \ 1 \\$

Currencies U.S.-dollar foreign-exchange rates in late New York trading

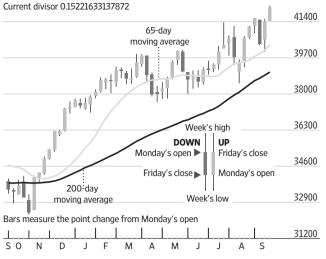
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Brazil real	.1814	5.5117	13.6	Europe	
Canada dollar	.7366	1.3576	2.5	Czech Rep. koruna	.04454
Chile peso	.001075	930.65	6.4	Denmark krone	.1497
Colombiapeso	.000241	4155.00	7.2	Euro area euro	1.1165
Ecuador US dollar	1	1	unch	Hungary forint	.002840
Mexico peso	.0515	19.4169	14.4	Iceland krona	.007339
Uruguay peso	.02398	41.7000	6.8	Norway krone	.0953 1
Asia-Pacific				Poland zloty	.2614
	(000	1 4/00	0.1	Sweden krona	.0983 1
Australiadollar	.6808	1.4689	0.1	Switzerland franc	1.1762
China yuan	.1418	7.0519	-0.9	Turkey lira	.0293 3
Hong Kong dollar	.1284	7.7903	-0.3	Ukraine hryvnia	.0242 4
India rupee	.01198	83.482	0.4	UK pound	1.3324
Indonesia rupiah	.0000660	15161	-1.5	Middle East/Afr	
Japan yen	.006948	143.92	2.0	Bahrain dinar	2.6534
Kazakhstan tenge	.002084	479.96	5.4	Egypt pound	.0206 4
Macau pataca	.1245		-0.3	Israel shekel	.2646
Malaysia ringgit	.2378	4.2050	-8.5	Kuwait dinar	3.2779
New Zealand dollar	.0220	1.6031	1.3	Oman sul rial	2.5974
Pakistan rupee	.00360	277.875	-1.2	Qatar rial	.2743
Philippines peso	.0180	55.635	0.4	Saudi Arabia riyal	.2665
Singapore dollar	.7748	1.2906	-2.2	South Africa rand	.0574 1
South Korea won	.0007505	1332.50	2.9		Close Net Ch
Sri Lanka rupee	.0032766	305.19	-5.8	WSJ Dollar Index	95.86 0.1
Taiwan dollar	.03127	31.981	4.2	Sources: Tullett Preb	on, Dow Jone

			US\$vs
C	i- LICC	Fri	YTD cho
Country/currency	in US\$,	. ,
Thailand baht	.03039		-4.3
Vietnam dong	.00004064	24605	1.4
Europe			
Czech Rep. koruna	.04454	22.451	0.3
Denmark krone	.1497	6.6814	-1.4
Euro area euro	1.1165	.8957	-1.1
Hungary forint	.002840	352.12	1.4
Iceland krona	.007339	136.26	0.2
Norway krone	.0953	10.4974	3.2
Poland zloty	.2614	3.8250	-2.8
Sweden krona	.0983	10.1715	0.7
Switzerland franc	1.1762	.8502	1.0
Turkey lira	.0293	34.1246	15. 8
Ukraine hryvnia	.0242	41.3500	8.4
UK pound	1.3324	.7505	-4.4
Middle East/Afri	ca		
Bahrain dinar	2.6534	.3769	-0.02
Egypt pound	.0206	48.5049	56.8
Israel shekel	.2646	3.7789	4.9
Kuwait dinar	3.2779	.3051	-0.7
Oman sul rial	2.5974	.3850	0.01
Qatar rial	.2743	3.645	0.1
Saudi Arabia riyal	.2665		
South Africa rand	.0574	17.4307	-4.7
	Close Net	Chg % Chg '	/TD % Chọ
WSJ Dollar Index	95.86 0.	13 0.14	0.03
Sources: Tullett Preb	on, Dow Jor	nes Market	Data



Dow Jones Industrial Average

Last Year ago **42063.36** ▲ 669.58, or 1.62% last week Trailing P/E ratio 26.13 24.59 P/E estimate * 20.50 18.63 High, low, open and close for each of Dividend yield 2.04 2.13 the past 52 weeks All-time high 42063.36, 09/20/24





S&P 500 Index

5702.55 ▲ 76.53, or 1.36% last week High, low, open and close for each of the past 52 weeks

Last Year ago 23.98 21.67 Trailing P/E ratio P/F estimate 23.05 19.86 Dividend yield * 1.31 1.58 5713.64, 09/19/24 All-time high





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Major U.S. Stock-Market Indexes

Major O.S.	JUCK	IVIGI	NCC III	uckes	•								
			 Latest We 						52-Week				chg —
Dow Jones	High	Low	Close	Net chg	%	chg	Low	Clos	e(●)	High	% chg	YTD	3-yr. ann.
Industrial Average	42160 91	<i>4</i> 1 <i>4</i> 35 17	42063.36	669.58		1.62	32417.59	-	•	42063.36	23.8	11.6	7.4
Transportation Avg			15755.00	25.39		0.16	13556.07		•	16331.72	5.1	-0.9	3.8
Utility Average		1034.95		-3.59	-0.34		783.08		•	1061.01	20.6	19.2	5.2
Total Stock Market			56499.70	829.82	0151	1.49	40847.04		•	56648.22	31.3	18.2	7.7
Barron's 400		1188.67	1219.69	32.18		2.71			•	1227.01	27.8	13.7	6.8
		1100.07	111/10/	72.10			707.77			1227.01	27.0	1)./	0.0
Nasdaq Stock Mark	et												
Nasdaq Composite	18099.93	17480.66	17948.32	264.34		1.49	12595.61		•	18647.45	35.9	19.6	6.8
Nasdaq-100	19951.79	19294.18	19791.49	276.91		1.42	14109.57		•	20675.38	34.6	17.6	9.7
S&P													
500 Index	5733.57	5604.53	5702.55	76.53		1.36	4117.37		•	5713.64	32.0	19.6	9.4
MidCap 400	3130.73	3034.34	3103.32	68.98		2.27	2326.82		•	3124.92	24.4	11.6	5.6
SmallCap 600	1434.69	1381.40	1415.08	31.04		2.24	1068.80		•	1435.83	23.4	7.3	2.7
Other Indexes													
Russell 2000	2259.25	2178.40	2227.89	45.40		2.08	1636.94		•	2263.67	25.4	9.9	0.7
NYSE Composite	19471.24	19121.50	19373.74	252.24		1.32	14675.78		•	19432.42	24.4	15.0	6.2
Value Line	621.50	604.42	615.12	10.70		1.77	498.09		•	620.59	14.0	3.6	-1.4
NYSE Arca Biotech	5989.65	5869.63	5910.09	28.97		0.49	4544.40		•	5949.95	17.9	9.1	0.3
NYSE Arca Pharma	1120.53	1098.31	1099.79	-11.32	-1.02		845.32		•	1140.17	22.7	20.8	13.9
KBW Bank	115.73	110.32	114.96	5.15		4.6	9 71.71		•	115.93	46.4	19.7	-2.1
PHLX§ Gold/Silver	163.82	156.52	161.11	0.72		0.45	102.94		•	161.11	40.6	28.2	9.6
PHLX§ Oil Service	79.55	74.42	79.08	5.358		7.27	72.67	•		97.46	-15.3	-5.7	15.5
PHLX§ Semiconducto	r 5135.89	4850.36	5000.06	19.57		0.39	3185.18		•	5904.54	48.6	19.7	14.4
Cboe Volatility	19.39	15.81	16.15	-0.41	-2.48		11.86	•		38.57	-6.1	29.7	-14.4
S Nasdaq PHLX	∜Nasdaq PHLX Sources: FactSet; Dow Jones Market Data												

52-Week Range

High

18000 17800 **DJ US TSM 829.82, or 1.49**% last week 56500 56000

Nasdaq Composite 264.34, or 1.49% last week

International Stock Indexes

Region/Country Index

Region/Country	y Index	Close	% CI	ig	LOW	Close	High	% cng
World	MSCI ACWI	837.37		1.26	629.46	•	839.49	15.2
	MSCI ACWI ex-USA	343.30		1.00	276.65	•	345.28	8.4
	MSCI World	3676.84		1.16	2731.99		3689.52	16.0
	MSCI Emerging Markets	1106.44		2.23	910.91	•	1124.86	8.1
Americas	MSCI AC Americas	2146.09		1.37	1557.56	•	2150.67	18.3
Canada	S&P/TSX Comp	23867.37		1.27	18737.39	•	23867.37	13.9
Latin Amer.	MSCI EM Latin America	2225.20	-1.05		2078.94		2675.33	-16.4
Brazil	Bovespa	131065.44	-2.83		112531.52	•	137343.96	-2.3
Chile	S&P IPSA	3432.10	-0.29		3048.00	•	3714.61	-1.0
Mexico	S&P/BMV IPC	52190.48		0.33	48197.88	•	58711.87	-9.1
EMEA	STOXX Europe 600	514.26	-0.33		429.58	•	525.05	7.4
	STOXX Europe 50	4386.98	-0.85		3783.73	•	4577.60	7.2
Eurozone	Euro STOXX	504.50	Ī	0.34	420.65	•	527.81	6.4
	Euro STOXX 50	4871.54		0.57	4014.36	•	5100.90	7.7
Austria	ATX	3615.48		0.35	3020.72	•	3775.49	5.3
Belgium	Bel-20	4215.59	-0.70		3290.68		4253.10	13.7
France	CAC 40	7500.26		0.47	6795.38	•	8239.99	-0.6
Germany	DAX	18720.01		0.11	14687.41	•	19002.38	11.8
Greece	Athex Composite	1425.19		0.42	1111.29	•	1502.79	10.2
Israel	Tel Aviv	1997.92	-2.75		1605.20	•	2093.08	7.1
Italy	FTSEMIB	33762.25		0.58	27287	•	35410	11.2
Netherlands	AEX	897.55	-0.23		714.05	•	944.91	14.1
Norway	Oslo Bors All-Share	1617.95	-0.22		1440.55	•	1684.40	6.5
Portugal	PSI 20	6716.23	-1.79		5824.40	•	6971.10	5.0
South Africa	FTSE/JSE All-Share	83829.99		2.26	69451.97	•	84553.54	9.0
Spain	IBEX 35	11753.30		1.85	8918.3	•	11778.1	16.3
Sweden	OMX Stockholm	999.59	_	1.57	753.35	•	1012.72	10.7
Switzerland	Swiss Market	11934.07	-0.86		10323.71	•	12451.48	7.1
U.K.	FTSE100	8229.99	-0.52		7291.28	•	8445.80	6.4
Asia-Pacific	MSCI AC Asia Pacific	186.48		1.87	150.10	•	188.5	10.1
Australia	S&P/ASX 200	8209.50		1.35	6772.9	•	8209.5	8.2
China	Shanghai Composite	2736.81		1.21	2702.19		3171.15	-8.0
Hong Kong	Hang Seng	18258.57		5.12	14961.18	•	19636.22	7.1
India	BSE Sensex	84544.31		1.99	63148.15	•	84544.31	17.0
Japan	NIKKEI 225	37723.91		3.12	30526.88	•	42224.02	12.7
Malaysia	FTSE Bursa Malaysia KLCI	1668.82		1.01	1415.60	•	1678.80	14.7
Singapore	Straits Times	3624.76		1.74	3053.36	•	3633.18	11.9
South Korea	KOSPI	2593.37		0.70	2277.99	•	2891.35	-2.3
Taiwan	TAIEX	22159.42		1.84	16001.27	•	24390.03	23.6

Source: FactSet; Dow Jones Market Data

Consumer Rates and Returns to Investor **Selected rates** U.S. consumer rates

A consumer rate against its benchmark over the past year

	10.00%
Prime rate	9.00
	8.00
New car loan	7.00
	16.00
O N D J F M A M J J A S 2023 2024	5

New car loan

Bankrate.com avg†:	7.27%
First Command Bank	5.74%
Fort Worth, TX	888-763-7600
PNC Bank	5.89%
Washington, DC	888-PNC-BANK
Firstrust Bank	5.99%
Philadelphia, PA	800-220-2265
Wilmington Savings Fund Society, FS	6.99% 6.99%
Wilmington, DE	888-973-7226
Cambridge Savings Ban	k 7.06%
Cambridge, MA	888-418-5626

Sources: FactSet; Dow Jones Market Data; Bankrate.com

	1 0.00									
ONDJFMAMJJA			bridge	Sav	ing	s B	anl	(7.06%
2023 2024		Caml	bridge, I	MA					888-4	418-5626
Interest rate		Rate (%)—) Week ago		2-W 0 2		Ran 4 6			High	3-yr chg (pct pts)
Federal-funds rate target	4.75-5.00	5.25-5.50	4.75			•			5.50	4.75
Prime rate*	8.00	8.50	8.00					0	8.50	4.75
SOFR	4.82	5.33	4.82			•			5.40	4.77
Money market, annual yield	0.44	0.46	0.44	•					0.64	0.36
Five-year CD, annual yield	2.87	2.87	2.77						2.88	2.43
30-year mortgage, fixed [†]	6.69	6.74	6.69				•		8.28	3.65
15-year mortgage, fixed [†]	6.14	6.05	6.02				0		7.42	3.82
Jumbo mortgages, \$766,550-plus	6.78	6.79	6.78				•		8.33	3.72
Five-year adj mortgage (ARM)†	5.94	6.01	5.93			(7.16	3.06
New-car loan, 48-month	7.27	7.75	7.27				•		7.94	3.54
Bankrate.com rates based on survey of ov	er 4,800 or	nline banks. 🕆	Base rate	e pos	ted l	y 70	l% o1	the	natio	n's largest
banks.† Excludes closing costs.		Cources	actCot. D	our I	0000	Mai	-lvot	Dat	Pan	krata com

Commodities and Currencies

Close			YTD % chg
993.30	20.39	2.10	3.71
282.39	8.55	3.12	7.04
71.92	3.27	4.76	0.38
2.434	0.129	5.60	-3.18
2619.90	38.60	1.50	27.03
100.74	-0.38	-0.37	-0.63
95.86	-0.20	-0.21	0.03
0.8957	-0.0072	-0.80	-1.14
143.92	3.08	2.19	2.05
1.33	0.0200	1.52	4.64
Low	Close()	High	% Chg
934.97	•	1079.94	-1.91
258.09		300.23	-1.26
65.75	•	93.68	-20.12
1.575	•	3.575	-7.70
1816.60	•	2619.90	36.07
100.55	•	107.00	-4.59
95.67	•	100.92	-3.84
	993.30 282.39 71.92 2.434 2619.90 100.74 95.86 0.8957 143.92 1.33 Low 934.97 258.09 65.75 1.575 1816.60 100.55	Close Net chg 993.30 20.39 282.39 8.55 71.92 3.27 2.434 0.129 2619.90 38.60 100.74 -0.38 95.86 -0.20 0.8957 -0.0072 143.92 3.08 1.33 0.0200	993.30 20.39 2.10 282.39 8.55 3.12 71.92 3.27 4.76 2.434 0.129 5.60 2619.90 38.60 1.50 100.74 -0.38 -0.37 95.86 -0.20 -0.21 0.8957 -0.0072 -0.80 143.92 3.08 2.19 1.33 0.0200 1.52



U.K. pound, in dollars 1.21 1.33 **8.85**

0.8934 • 0.9555 **-4.65** 140.61 • 161.70 **-2.96**

Euro, per dollar

Yen, per dollar

Benchmark Yields and Rates

Treasury yield curve

Yield to maturity of current bills, notes and bonds

One year ago 5.00 Tradeweb FTSE Friday Close 3.00 1 3 6 1 2 3 5 7 10 20 30 month(s) years — maturity

Forex Race Yen, euro vs. dollar; dollar vs. major U.S. trading partners



 $Sources: Tradeweb\ FTSE\ U.S.\ Treasury\ Close; Tullett\ Prebon; Dow\ Jones\ Market\ Data$

Corporate Borrowing Rates and Yields								
			Spread +/- Treasurys,					
	Yiel	d(%)	in basis pts	s, 52-wk F	Range	Total	Return	
Bond total return index	Last	Wkago	Last	Low	High	52-wk	3-yr	
U.S. Treasury, Bloomberg	3.700	3.660				8.97	-2.13	
U.S. Treasury Long, Bloomberg	4.120	4.040				11.20	-9.44	
Aggregate, Bloomberg	4.170	4.140	37	36	58	10.43	-1.66	
Fixed-Rate MBS, Bloomberg	4.450	4.380	41	37	82	10.73	-1.22	
High Yield 100, ICE BofA	6.257	6.443	240	219	410	14.857	3.127	
Muni Master, ICE BofA	3.126	3.139	2	-9	9	7.837	-0.144	
EMBI Global, J.P. Morgan	7.140	n.a.	330.000	n.a.	n.a.	16.524	-0.685	

 $Sources: J.P.\ Morgan; S\&P\ Dow\ Jones\ Indices; Bloomberg\ Fixed\ Income\ Indices; ICE\ BofA$

CLOSED-END FUNDS

Listed are the 300 largest closed-end funds as measured by assets. Glosed-end funds sell a limited number of shares and invest the proceeds in securities. Unlike open-end funds, closed-ends generally do not buy their shares back from investors who wish to cash in their holdings. Instead, fund shares trade on a stock exchange. Ma signifies that the information is not available or not applicable. NS signifies funds not in evisitons of the parties nearful 21 gmoth valid is: available or not applicable. M2 signifies funds not in existence for the entire period 12 month yield is computed by dividing income dividends paid (during the previous 12 months for periods ending at month end or during the previous 52 weeks for periods ending at any time other than month-end) by the latest month-end market price adjusted for capita gains distributions. Depending on the fund category, either 12-month yield or total return is listed. Source: LSEG Friday, September 20, 2024 NAV Close/Disc Ret Fund (SYM) **General Equity Funds** Adams Diversified Eqinc ADX 24.08 21.40 -11.1 39.0 Central Secs CET 56.08 45.63 -18.6 33.9 CohenStrsCEOppFd FOF 12.15 12.69 +4.4 34.5 EVTxAdvDivIncm EVT 26.63 24.11 EVTXAdVDIVIncm EVT 26.63 24.11 -9.5 GabelliDiv&IncTr GDV 28.24 24.31 -13.9 GabelliEquity Tr GAB 5.43 5.50 +1.3 GeneralAmer GAM 62.72 53.47 -14.7 JHancockTaxAdvDiv HTD 24.80 22.66 -8.6 Liberty All-Star Equity USA 7.12 6.95 -2.4 Liberty All-Star Growth ASG 6.02 5.50 -8.6 Royce Micro-Cap Tr RMT 10.80 9.56 -11.5 Royce Value Trust RVT 17.28 15.44 -10.6 Source Capital SCDP 46.28 43.30 -4.9 Source Capital SOR 46.28 43.99 Sprott Focus Trust **FUND** 8.81 7.64 -13.2 8.4 SRH Total Return **STEW** 20.24 15.73 -22.3 23.7 Tri-Continental **TY** 36.98 32.74 -11.5 28.5 Specialized Equity Funds abrdn Glb Prem Prop AWP 4.45 4.43 abrdn Global Infra Inc ASGI 21.10 19.76 Adams Natural Resources PEO 26.35 23.19 ASA Gold & Prec Met Ltd ASA 23.54 20.60 BR Enh C&I CII 21.38 19.45
BlackRock Energy & Res BGR 14.38 12.69
BlackRock Eq Enh Div BDJ 9.36 8.52
BlackRock Enh Glbl Div BOE 12.65 11.17 -11.8 -9.0 -11.7 BlackRock Enh Intl Div BGY 6.49 5.71 BlackRock Esh Intl Div BGY 6.49 5.71 BlackRock Hith Sci Tern BMEZ 17.94 16.01 BlackRock Hith Sciences BME 45.52 41.93 BlackRock Introv&Gro Tern BIGZ 8.42 7.49 -7.9 -11.0 BlackRock Res & Comm **BCX** 10.50 9.20 -12.4 BlackRock Sci&Tech Term **BSTZ** 20.97 18.76 -10.5

A Week in the Life of the DJIA

investment, including reinvested dividends.

Intel

Nike

Caterpillar

Salesforce

Chevron

Walt Disney

Amazon.com

Home Depot

Apple

Amgen

IBM

3M

Merck

Microsoft

Coca-Cola

Travelers

Verizon

Visa

Honeywell

Walmart

unknown VP: vice president Excludes pure options transactions

Biggest weekly individual trades

Based on reports filed with regulators this past week

Company

Aug. 8-13 American Public Education

Transocean

Liquidia

Terns Pharmaceuticals

Buyers

Aug. 27-28

Sept. 12

Sept.12

Sept.12

Boeing

McDonald's

Procter & Gamble

Johnson & Johnson

Goldman Sachs

American Express

JPMorgan Chase

11.09

9.51

6.81

4.36

4.06

3.86

3.61

3.53

3.31

3.11

2.74

2.60

2.56

1.48

1.35

1.19

1.13

1.09

0.32

0.29

0.10

0.08

-0.23

-0.39

-0.82

-0.90

-1.91

-2.22

2.18

7.51

23.51

2.17

19.44

9.99

5.07

3.20

1.56

5.11

9.87

5.70

2.91

1.59

1.31

4.68

0.23

0.70

0.30

0.14

-0.10

-0.80

-1.36

-1.54

-3.48

-19.32

14.32

49.34

154.45

127.71

65.63

33.31

21.02

10.25

33.57

64.84

37.45

19.12

10.45

8.61

30.75

1.51

4.60

1.97

0.92

-0.66

-5.26

-8.93

-10.12

-22.86

-126.92

Insider-Trading Spotlight

A look at how the Dow Jones Industrial Average component stocks

did in the past week and how much each moved the index. The DJIA gained 669.58 points, or 1.62%, on the week. A \$1 change in the price

\$1,000 investment on Dec. 31 in each current DJIA stock component

of any DJIA stock = 6.57-point change in the average. To date, a

would have returned \$33,929, or a gain of 13.10%, on the \$30,000

			5 Prem	2 wk Ttl
Fund (SYM)	NAV			Ret
BlackRock Sci&Tech Trust B	ST 37.38	34.78	-7.0	22.1
BlackRock Utl Inf & Pwr			-1.5	24.5
CLEARBRIDGE ENGY MDS OPP E	MO NA	42.04	NA	39.7
ChnStrInfr UTF		25.38	-0.8	34.5
Cohen&SteersQualInc R	QI 14.40	13.74	-4.6	40.8
CohenStrs Real Est and I RL	TY 17.57	17.07	-2.8	39.4
Cohen&Steers TotRet F			+0.7	31.5
CohenStrsREITPrefinc R			+1.4	40.6
Columbia Sel Prm Tech Gr S			+2.3	29.6
DNP Select Income DI			+9.0	9.1
Duff&Ph Uti&Infra Inc Fd D	20.17 20.17		-10.3	39.8 29.8
EtnVncEqtyInc EOI EtnVncEqtyIncoll EO			-2.2 -4.5	35.1
EVRskMnDvsEqInc E			-4.5 -5.6	29.0
ETnVncTxMqdBuyWrtInc E			-6.5	21.1
EtnVncTxMgdBuyWrtOpp E			-5.3	22.0
EvTxMnDvsEqInc E1	ry 14.97	14.43	-3.6	33.8
EtnVncTxMqdGlbB ET			-10.9	19.7
EVTxMnGblDvEqInc EX			-10.3	22.8
Ecofin S&S Impact Term TE		12.81	NA	12.9
First Tr Enhanced Eq FI			-3.6	23.3
Gabelli Healthcare GF			-12.2	34.3
Gab Utility GUT	3.10		+71.3	-1.6
GAMCOGIGold&NatRes G			+1.2	24.5
J Han Finl Opptys B1 Neuberger Brmn Enrgy I&I N			-0.7 -10.6	41.9
Neuberger Nxt Gen Conn NB			-11.8	32.7
Nuv Dow 30 Dvn Overwrite DI			-12.6	14.7
NuvCorEqAlpha JCE			-0.1	35.5
Nuveen Nasdaq 100 Dyn Ov QQ			-10.3	23.0
Nuv Real Est JRS	9.83	8,94	-9.1	43.0
NuvS&P500DynOvFd SP			-8.1	21.0
NuvSP500BuyIncFd BXN			-10.8	14.7
ReavesUtilityIncome U	rG 31.90	31.53	-1.2	32.5
Tortoise Enrgy Infra Crp T			-14.2	37.4
Tortoise Midstream Enrgy N			-12.1	48.2
VDivInt&PremStr NI V Art Int&Tech Opps A		21.57	-12.7 NA	20.6
Income & Preferred			IVA	40.5
Dividend and Income BX	SY 20 20) NA	NA	NΑ
CalamosStratTot CS	17.60	17.09	-2.9	27.6
CohenStrsLtdDurPref&Inc L			-4.3	33.6
CohenStrsSelPref&Income P	SF 22.08	21.07	-4.6	27.7
CohenStrsTaxAvPreSecs&l P			-2.3	27.2
FirstTrIntDurPref&Inc F			-3.7	41.5
JHanPrefinc HPI	16.99		+9.2	38.8
JHPrefincil HPF	16.83		+6.2	33.9
HnckJPfdInco III HP:	5 15.12	2 16.75	+10.7	35.3

\$1,000 Invested(year-end '23) \$1,000

\$441 807

1,263

1,018

1,054

1,317

1,449

1,008

1,043

1,263

979

1,261

1,146

1,190

1,197

1,517

1,095

1.164

1,243

1,270

1,019

1,211

1,235

1.072

1,100

985

Symbol Close
INTC \$21.84

86.52

368.82

498.43

268.99

93.75

389.86

228.20

435.27

71.64

238.53

174.22

44.33

203.35

164.16

79.06

CSCO 51.97

DOW 51.71

AMZN 191.60

AMGN 337.38

MMM 134.77

MRK 117.17

NKE

CAT

GS

AXP

CVX 145.68

DIS

JPM

HD

AAPL

IBM 217.70

MSFT

ΚO

TRV

MCD 296.83

PG

٧Z

HON

JNJ

WMT

BA 153.29

UnitedHealth Group UNH 575.00

2 wk	5	2 wk
Ttl	Prem	Ttl
Ret	Fund (SYM) NAV Close /Disc	Ret
22.1	LMP Capinco SCD NA 17.43 NA	50.9
24.5	LMP Capinco SCD NA 17.43 NA Nuveen Pref & Inc Opp JPC 8.26 8.17 -1.1	
39.7	Nuveen Pref Sec & Inc Op JPI 20.53 20.17 -1.8	25.2
34.5	Nuveen Var Rate P&I NPFD 20.68 19.02 -8.0	31.1
40.8	TCW Strat Income TSI NA 5.10 NA	15.9
39.4	Convertible Sec's. Funds	17.7
31.5	AdvntCnvrtbl&IncFd AVK 12.48 11.81 -5.4	25.4
40.6	Calamas Capulli CHV 10.62 11.01 - 2.4	18.3
29.6	CalamosConvHi CHY 10.62 11.92 +12.2 CalmosConvOp CHI 10.04 11.71 +16.6	
9.1		22.2
39.8	V Conv & Inc NCV NA 3.45 NA V Conv & Inc II NCZ NA 3.07 NA V Divloc & Conv ACV NA 21.42 NA	27.7
29.8	V Conv & Inc II NCZ NA 3.07 NA	27.7
	V Div Inc & Conv ACV NA 21.42 NA	28.5
35.1	V Div Inc & Conv ACV NA 21.42 NA V Eqty & Conv Inc NIE NA 22.79 NA	23.6
29.0	World Equity Funds	
21.1	abrdn Emg Mkts Eq Inc AEF 6.33 5.45 -13.8	18.7
22.0	abrdn Glbl Dyn Div AGD 11.59 10.28 -11.3	25.1
33.8	abrdn Tot Dyn Div AOD 10.05 9.00 -10.4	26.9
19.7	Allspring Gl Div Oppty EOD 5.61 4.89 -12.8	30.8
22.8	BlackRock Cap Alloc Term BCAT 17.21 16.41 -4.6	31.2
12.9	Calamos GloDynInc CHW 7.82 6.99 -10.6	34.7
23.3	EV TxAdvGlbDivInc ETG 21.13 18.95 -10.3	29.6
34.3	EtnVncTxAdvOpp ETO 28.45 25.87 -9.1	28.5
-1.6	Highland Global Alloc HGLB 11.71 7.81 -33.3	7.0
24.5	India Fund IFN 20.55 18.83 -8.4	20.7
41.9	Japan Smaller Cap JOF 9.95 8.05 -19.1	14.7
26.5	LazardGlbTotRetInc LGI 18.84 17.46 -7.3	37.0
32.7	Mexico MXF 18.94 15.08 -20.4	-6.2
14.7	Miller/Howard High Inc E HIE 12.43 12.01 -3.4	26.9
35.5	MS ChinaShrFd CAF 14.16 11.41 -19.4	-8.3
23.0	MS India IIF 35.07 29.84 -14.9	
43.0	MS India IIF 35.07 29.84 -14.9 New Germany GF 10.15 8.60 -15.3	4.5
21.0	New Germany GF 10.15 8.60 -15.5 Nuveen Multi-Asset Inc NMAI 14.05 13.18 -6.2	4.7
14.7		32.7
32.5	Nuveen RI Asst Inc & Gro JRI 14.48 13.32 -8.0	38.1
37.4	NYLI CBRE Glbl Inf Meg T MEGI 16.02 14.53 -9.3	28.6
48.2	Templeton Dragon TDF 9.17 7.86 -14.3	-8.2
20.6	Templeton Em Mkt EMF 14.90 12.84 -13.8	18.6
40.3	Prem1	2 Mo
	Fund (SYM) NAV Close /Disc	Yld
NA	U.S. Mortgage Bond Funds	
27.6	BlckRk Income BKT 12.70 12.49 -1.7	8.5
33.6	Investment Grade Bond Funds	0.5
27.7	Angel Oak FS Inc Trm FINS NA 13.17 NA	10.2
27.2	BlRck Core Bond BHK 11.08 11.91 +7.5	7.6
/11 5	DIRCK COLE DOLLO DAK 11.08 11.91 +7.5	7.0

			CHILL	FIAIO
Fund (SYM)	NAV C	:lose/	Disc	Yld
U.S. Mortgage Bond	Funds			
BlckRk Income BKT		12.49	-1.7	8.5
Investment Grade B	ond Fu	nds		
Angel Oak FS Inc Trm FIN	IS NA	13.17	NA	10.2
BIRck Core Bond BHI	11.08	11.91	+7.5	7.6
BR Credit Alloc Inc BT	Z 11.74	11.10	-5.5	9.1
Insight Select Income IN:	SI 18.33	17.25	-5.9	4.7
InvescoBond VBF	16.89	16.87	-0.1	5.0
J Han Income JHS	12.48	11.59	-7.1	3.7
MFS Intmdt MIN	2.88	2.74	-4.9	0.0
Westn Asst IG Def Opp Tr I	GI NA	18.08	NA	4.7
Loan Darticination E	unde			

Loan Participation Ful	nds			
BR Debt Strategy DSU	10.71	11.03	+3.0	10
BR F/R Inc Str FRA	12.96	13.16	+1.5	11
BlackRock Floating Rt Inc BGT	12.62	12.76	+1.1	11
Blackstone Lng-Sh Cr Inc BGX	NA	13.13	NA	9
BS SFR 2027 T BSL	NA	14.39	NA	9
BS St Cr 2027 Tm BGB	NA	12.41	NA	9
EtnVncFltRteInc EFT	NA	12.82	NA	11
EV SenFlRtTr EFR	NA	12.60	NA	11
FT/Sr Fltg Rte Inc 2 FCT	10.88	10.30	-5.3	11
Highland Oppty & Income HFRO	13.02	6.28	-51.8	10
InvDYCrOpp:AX VTA	10.90	NA	NA	Λ
InvSnrIncTr VVR	3.97	4.13	+4.0	11
Nuveen Credit Strat Inc JQC	5.90	5.69	-3.6	11
NuvFloatRateIncEd JFR	NΔ	8.81	NΔ	11

NuvFloatRateIncFd JFF		8.81	NA	11.5
High Yield Bond Fund				
abrdn Inc Credit Str ACI	• 6.64	6.45	-2.9	18.7
AllianceBernGlHilncm AWI	11.46	11.21	-2.2	7.2
Allspring Income Oppty EAL	7.47	7.02	-6.0	8.7
Barings Glb SD HY Bd BGH			-6.0	
BR Corporate HY HY1			+0.7	
BlackRock Ltd Dur Inc BLV			+0.3	
BNY Mellon Hi Yield Str DHI			-8.6	
Brookfield Real Asst Inc RA			-9.9	
CrSuisHighYld DHY		2.17	-2.7	
DoubleLine Inc Sol DSI			+1.8	10.1
DoubleLine Yld Opps DL Y			+1.5	8.9
First Trust HY Opp:2027 FTH			-4.5	10.4
Franklin Univ FT		7.50	-10.5	7.0
KKR Income Opportunities KIC		14.78	NA	9.98
NeubHgYldStrt NHS	8.04		+2.7	13.1
New Amer Hi Inc HYB			-3.1	5.9
Nuveen Global High Inc JGH			-6.3	
PGIM Global High Yield GHY				9.95
PGIM High Yield Bond ISI				9.1
PGIM Sh Dur Hi Yld Opp SDHY	/ 17.92	16.42	-8.4	8.0
PioneerHilncm PHT	8.45	7.94	-6.0	8.3
WstAstHIF II HIX	NA	4.49	NA	13.3
Western Asset Hi Inc Opp HIC	NA C	4.01	NA	10.7
Western Asset Hi Yld D O HY	ı NA	12.36	NA	9.4
Other Demostic Tax	blo Ro	nd Eu	nde	

ı	Other Donnestic Taxa	DIE DU	iiu ru	iius	
	Allspring Multi-Sector ERC	10.19	9.52	-6.6	8
	Ares Dynamic Crdt Alloc ARDC	NA	15.11	NA	9
	BlackRock Mlt-Sctr Inc BIT	14.89	15.05	+1.1	9
	BlackRock Tax Muni Bd BBN	18.41	17.97	-2.4	6
	DoubleLine:Oppor Crdt Fd DBL	15.62	15.98	+2.3	7
	EVLmtDurlncm EVV	NA	10.39	NA	9
	Franklin Ltd Dur Income FTF	7.10	6.70	-5.6	10
	FS Credit Opportunities FSCO	NA	NA	NA	11
	J Han Investors JHI	14.96	13.79	-7.8	6
	MFS Charter MCR	6.99	6.44	-7.9	0
	NuvCorePlusImpact NPCT	12.41	11.67	-6.0	9
	Nuveen Taxable Muni Inc NBB	17.40	16.61	-4.5	5
	PIMCO Corp & Inc Oppty PTY	11.65	14.31	+22.8	9.
	PIMCO Corp & Inc Strat PCN	11.88	13.92	+17.2	10
	PIMCOHilnco PHK	4.72	4.92	+4.2	11
	PIMCO IncmStrFd PFL	8.17	8.49	+3.9	11
	PIMCO IncmStrFd II PFN	7.19	7.50	+4.3	11
	Putnam Prem Inc PPT	3.91	3.73	-4.6	8
	Western Asset Dysfd Inc WDI	NA	15.66	NA	11

Price range (\$) in transaction

14.55-14.86 16.03-16.11

4.13

10.50

8.90

86 38

1,500

476

337

DOI

DOI

DI

DI

\$ Value (000s)

1,269 618

6,195

5,000

3,000

Close (\$) Ytd (%)

4.54 -28.5

57.2

24.6

LBMA Platinum Price PM

LBMA Palladium Price PM

Platinum, Engelhard industrial

Palladium, Engelhard industrial

Aluminum, LME, \$ per metric ton

23,919 183.90 132.1

15.17

10.02 54.4

9.95 -17.3

*Based on Composite price, DJIA is calculated on primary-market price Source: Dow Jones Market Data; Fact Set. Western Asset Inf-Lk Inc WIA NA 8.54 NA

LSEG Data and Analytics on September 20, and year-to-date stock performance of the company

Symbol Inside

RIG

TERN

LQDA

Trading by 'insiders' of a corporation, such as a company's CEO, vice president or director, potentially conveys

within two business days. Here's a look at the biggest individual trades by insiders, based on data received by

KEY: B: beneficial owner of more than 10% of a security class CB: chairman CEO: chief executive officer CFO: chief financial officer

I: indirect transaction filed through a trust, insider spouse, minor child or other O: officer OD: officer and director P: president UT:

M. Braner

M. Brane

F. Mohn

P. Mann

H. Lu

CO: chief operating officer D: director DO: director and beneficial owner GC: general counsel H: officer, director and beneficial owner

new information about the prospects of a company. Insiders are required to report large trades to the SEC

Fund (SYM) NAV Close / Disc Yld Western Asset Inf-Lk 0&I WIW World Income Funds NA 8.76 NA World inCome Funds abrdn AP IncFd FAX 18.52 17.51 -5.5 MS EmMktDomDebt EDD 5.59 5.06 -9.5 PIMCO Access Income PAXS 15.55 16.39 +5.4 PIMCO Dynamic Inc Strat PDX 25.78 23.95 -7.1 PIMCO Dynamic Inc Opp PDD 13.18 13.96 +5.9 PIMCO Dynamic Inc Opp PDD 13.18 13.96 +5.9 11.1 8.9 NE 9.8
 PIMCO Stratg Inc RCS
 4.53
 7.60

 Templttn Glbl Inc SABA
 NA
 8.44

 Templeton Em Inc TEI
 6.20
 5.92

 WstAstEmergDebt EMD
 NA
 10.14
 WSTASETHER YOUNG TO BE WANDED T BlackRock Muni BFK 11.55 10.66 BlackRock Muni II BLE 12.29 11.34 BlckRk Muni Inc Qly BYM 12.81 11.98 BR MuniAssets Fd MUA 12.00 12.29 BR MH Oly 2 **MUE** 11.76 10.73 BR MH Oly 2 **MUE** 11.76 10.73 BR MuniHoldngs **MHD** 13.79 12.85 BR MuniVest Fd **MVF** 8.15 7.60 BR MuniVest 2 **MVT** 12.56 11.45 BR MuniVield Fd **MVD** 12.29 11.57 BR MuniYield Qlty MQY 13.38 13.00 BR MuniYld Qlty2 MQT 11.79 10.92 BR MuniYld Qlty3 MYI 12.70 11.99 BNY Mellon Muni Bd Infra DMB 12.33 11.15 BNY Mellon Muni Bd nirra Dmb 12.55 1.1.2
BNY Mellon Str Muni Bond DSM 6.87 6.27
BNY Mellon Strat Muni LEO 7.20 6.53
DWS Muni Inc KTF 10.39 9.93
EVMuniBd EIM 11.51 10.81 DWS Muni Inc KTF EVMuniBd EIM EVMuniIncm EVN 11.54 11.21 18.87 17.83 EVNatMuniOpp EOT

L VINACIVIAIIIOPP LOI	TO:01	T/.03	_
InvAdvMuIncTrII VKI	9.91	9.24	-6
Invesco MuniOp OIA	6.55	6.71	+2
InvescoMuOppTr VMO	11.08	10.28	-7
InvescoMuTr VKQ	11.11	10.26	-7
InvescoQual Inc IQI	11.18	10.36	-7
InvTrInvGrMu VGM	11.44	10.52	-8
InvescoValMunInc IIM	13.64	12.85	-5
NeubrgrBrm NBH	12.23	11.27	-5 -7
Nuveen AMT-Fr Mu Val NUW	15,44	14.26	-7
Nuveen AMT-Fr Qlty Mun I NEA	12,72	11.85	-6
Nuveen AMT-Fr Mu CI NVG	13.99	13.31	-4
Nuveen Dyn Muni Opp NDMO	11.34	11.02	-2
Nuveen Mu Crdt Opps NMCO			-1
Nuv Muni Credit Income NZF			-5
NuvMuniHilncOpp NMZ	11.49	11.50	+(
Nuveen Muni Val NUV			-4
Nuveen Quality Muni Inc NAD	13.18	12.28	-6
Nuveen Sel TF NXP			+2
NYLI MacKay DT Muni Opp MMD			-1
	0.70	0.00	

uveen Sel TF NXP 14.73 15.04	+
'LI MacKay DT Muni Opp MMD 17.11 16.83	-
MCO Munilnc PMF 9.70 9.90	+
MCOMunilnell PML 8.98 9.25	+
mco Muni III PMX 8.29 8.18	-
oneerHilncAdv MAV 9.41 8.98	-
onrMuniHilncOppty MIO 13.17 12.50	-
oneerMunHilcm MHI 10.22 9.61	-
utnam Mgd Inc PMM 7.00 6.54	-
utnam Muni Opp PMO 11.78 10.69	-
verNorth Flx Mu Inc II RFMZ 15.59 14.59	-
verNorth Mgd Dur Mun I RMM 16.52 15.83	-
estern Asset Mgd Muni MMU NA 10.84	
ingle State Muni Bond	
ackRock CA Mun BFZ 12.97 12.07	-

BR MH CA Olv Fd Inc MUC 12.73 11.56

BR MH CA Qly Fd Inc MUC	12.73	11.56	-9.2	
BR MH NJ Qly MUJ			-8.7	
BR MH NY Qly MHN	12.23	10.99	-10.1	
BR MuniYld MI Qly MIY			-10.4	
BR MuniYld NY Qly MYN			-9.3	
BlackRock NY Mun BNY	12.17	11.00	-9.6	
EVCAMuniBd EVM			-8.1	
Eaton Vance NY Muni Bd ENX	10.87	9.89	-9.0	
InvCaValMuIncTr VCV	11.42	10.94	-4.2	
InvPAValMuIncTr VPV	11.86	11.23	-5.3	
InvTrInvGrNYMu VTN	12.11	11.47	-5.3	
Nuveen CA AMT-F Qual MI NKX	13.36	13.85	+3.7	
Nuveen CA Val NCA	9.48	9.10	-4.0	
NuveenCAQtyMuInc NAC	12.86	11.92	-7.3	
NuvNJ Qual Muni Inc NXJ			-5.7	
Nuveen NY AMT/Fr Qual MI NRK	12.09	11.20	-7.4	
Nuveen NY Val NNY	9.10	8.54	-6.2	
Nuveen NY Qual Muni Inc NAN	12.57	11.74	-6.6	
Nuveen PA Qual Muni Inc NQP	13.42	12.66	-5.7	
Nuveen VA Qlty Mun Inc NPV	12.64	12.55	-0.7	
PIMCO CA PCQ	10.72	9.87	-7.9	
PIMCOCAMunill PCK	6.86	6.21	-9.5	
Pimco CA Muni III PZC	7.92	7.48	-5.6	

				Z WK	
Fund (SYM)	NAV CI		rem	Ttl Ret	
runa (STIVI)	NAV CI	ose/L	JISC	Ket	
General Equity Fund	s				
Alternative Strategies:	15.09	NA	NA	-0.8	
First Trust Hdg Strat;A	10.88	NA	NA	10.0	
First Trust Hdg Str;I	10.94	NA	NA	10.9	
Specialized Equity F	unds				
Accordant ODCE Index;A	9.36	NA	NA	NS	
Accordant ODCE Index;	9.38	NA	NA	-8.1	
Accordant ODCE Index:\	9.38	NA	NA	NS	

FedProj&TrFinanceTendr 10.14
Flat Rock Core Income 20.66
Flat Rock Enhanced Inc 21.79 InvDYCrOpp:A InvDYCrOpp:R6 InvDYCrOpp:Y Invesco Sr Loan A Apollo Diversified RE:A 25.81 Invesco Sr Loan C Invesco Sr Loan IB Apollo Diversified RE:C 24.11 Apollo Diversified RE:I 26.41 NA NA NA NA Invesco Sr Loan IC 5.78
Invesco Sr Loan Y 5.78
Lord Abbett FR Hi Inc: 10.23
Lord Abbett FR Hi Inc: 10.23
Monachil Credit Income: 10.03 16.8 NA NS NS

CBRE GlbRIEst IGR 6.28 6.28 22.90 NA CIM RA&C A CIM RA&C C CIM RA&CL -0.6 NA NA NA NA NA Forum RE Income;I Forum RE Income;Founders Forum RE Income;I NS 13.8 13.7 NS JACKSON REAL ASSETS: 10.68 MEKETA INFRSTRCTR;II 27.16 NA NS NA NS NA NS NA -0.5 NA -0.2 NA NA NS NA NA NA NA NA NA NA NA -0.1 NA -0.1 NA -0.3 NA -9.7 NA -1.5 NA -49.7 NexPointRIEstStrat;A 16.85 17.07 NexPointRIEstStrat;C 17.07 NexPointRIEstStrat;Z 17.09 PENDER REALESTATECR;A 10.08 PENDER REAL ESTATE CR:11 10.08 PENDER REAL ESTATE (R:12 10.08 PIMCO Flexible REI;Inst Principal Real Asst A 10.9 5.8 6.2 6.4 7.8 -0.1 0.1 Principal Real Asst Ins Principal Real Asst Y Redwood RI Est;I 25.18 NA Principal Real Asst Y Redwood RI Est;I The Private Shares;A 39.51 40.22 The Private Shares;I The Private Shares;L Thirdline Real Estatel 38.83 10.13 USQ Core Real Estate: 22.29 USQ Core Real Estate: 22.38 Versus Cap RE: 25.14 Versus Capital Real Asst Wildermuth: 4.97

NAV Close / Disc

Ret

Fund (SYM)

Wildermuth:1 4.77
Income & Preferred Stock Fu
ALPHA ALT ASST;A 6.37
Alnha Alternative Assets 6.44 NA -11.7 NA NA NA NA Aphda Attendows Assets 6.44 NA
Calamos L/SEdy and Di CPZ 17.51 15.46
Carlyle Alpinv Pvt MktA NA NA
Denali Strctr Rtrn Strat NA NA
Lord Abbett Spec Sit I:A 9.31 NA
Lord Abbett Spec Sit I:B 9.32 NA
Variant Altrn Unclast 27.69 NA Lord Abbett Spec Sit I:A
Lord Abbett Spec Sit I:I
Lord Abbett Spec Sit I:I
Variant Altrntv Inc:Inst
27.69 5.2 8.7 NS Variant Impact;Instl 28.26 Versus Capital Infra Inc 10.20 Convertible Sec's. Funds NA

Calmos Dyn Conv and Inc **CCD** 19.14 25.03 +30.8 16.4 **World Equity Funds** BEACON POINTE MLT-ALT;I NA NA Calamos GIb Tot Ret CGO 11.98 11.63 Cantor Fitzgerald SI:A 12.20 Cantor Fitzgerald SI:C 12.05 Cantor Fitzgerald SI:1 12.23 NA NA NS NA 20.0 CANTOR FITZGERALD INFR;S 12.27 Primark Priv Eq Inv: 13.62 NA NA Sweater Cashmere 21.90 NA NA Thomburg Inc Bldr Opps TBLD 19.24 17.58 -8.6 VirtusTotalRetFd ZTR NA 6.13 NA Prem12 Mo

Fund (SYM) NAV Close /Disc Yld U.S. Mortgage Bond Funds
Arca US Treasury NA
CATALYST STRAT INC OPPS 10.10 NA NA Ellington Inc Opp:A 9.16 9.03 NA NA Ellington Inc Opp:M
Investment Grade Bo
AB CarVal Credit Opp;Adv AB CarVal Credit Opp;Adv NA AB CarVal Credit Opp;A 10.27 AB CarVal Credit Opp; C 10.27
AB CarVal Credit Opp; U NA
Loan Participation Funds
1WS Credit Income; A2 NA 1WS Credit Income;A2 NA
1WS Credit Income;Inst NA
Apollo Diversified Cd:A 22.32
Apollo Diversified Cd:C 22.31 NA NA 7.6 9.0 8.2 11.3 9.2 8.7 8.5 NS 8.8 15.2 NA NA NA NA NA NA 23.31 Apollo Diversified Cd:F Apollo Diversified Cd:I Apollo Diversified Cd:L Apollo Diversified Cd:M Axonic Alternative I;A Axonic Alternative I Ins Bluerock HI Inst Crd:A Bluerock HI Inst Crd:C 23.31 Bluerock HI Inst Crd:F 23.31 Bluerock HI Inst Crd:I 23.32 BNYM Alcntr Glb MS Cr Fd 93.46 15.2 15.2 15.2 NA CliffwaterCIFd;I CliffwaterEIFd;I CNR Strategic Credit EAGLE POINT ENH INC 10.9 10.91 11.16 7.28 NA 10.17 10.9 22.7 NS NS NS NS Floating-Rate Opps;A Floating-Rate Opps;I Floating-Rate Opps;U 10.17 10.16 10.17 Equalize Community Dev FedProj&TrFinanceTendr Flat Rock Core Income

Fund (SYM) NAV Close/Disc Nomura Alt Inc;I 10.05 NA OFS Credit Company OCCI PC PCAAM AI;I PRINCIPAL PRIVATE CR I;A PRINCIPAL PRIVATE CR I;Y PRINCIPAL PRVT CR I;INS 10.41
SEI Alternative Income:F 10.38
SEI Alternative Income:Y 10.38 Voya Enhanced Sec Inc:A Voya Enhanced Sec Inc:C Voya Enhanced Sec Inc:I NA Yieldstreet Alt Inc NA NA High Yield Bond Funds
Opprenstc Crdt Intrvl;I 11.50
PIMCO Flexible Cr I;A-1 7.20 PIMCO Flexible Cr I;A-2 PIMCO Flexible Cr I;A-3 10.1 10.1 PIMCO Flexible Cr I:A-4 PIMCO Flexible Cr I;Inst Polen Credit Opps;Inst

Other Domestic Taxable Bond Funds AFA Private Credit:Fndr AFA Private Credit; Inst Alternative Credit Inc:A Alternative Credit Inc:C Alternative Credit Inc:L Alternative Credit Inc:L Alternative Credit Inc:W AMG Pantheon Crdt Soln; 10.42 AMG Pantheon Crdt Soln; 10.51 Angel Oak Str Crdt:FI 21.81 Angel Oak Str Crdt:Inst BR Credit Strat;A BR Credit Strat;Inst BR Credit Strat:U BR Credit Strat;W CION Ares Dvsfd Crdt;A

CION Ares Dysfd Crdt:C CION Ares Dysfd Crdt;L CION Ares Dysfd Crdt;L CION Ares Dvsfd Crdt;U CION Ares Dysfd Crdt;U2 CION Ares Dysfd Crdt;W CNR Select Strategies First Eagle Crdt Opps A First Eagle Crdt Opps A2 First Eagle Crdt Opps I 23.10 First Trust Private CrA First Trust Private Cr;I Franklin BSP Pvt Cr:A Franklin BSP Pvt Cr:Adv FS Credit Income;A FS Credit Income;T FS Credit Income;U FS Credit Income;U-2 KKR CREDIT OPPTY;D KKR CREDIT OPPTY;I KKR CREDIT OPPTY;T KKR CREDIT OPPTY;U MA SPECIALTY CREDIT IN:S 25.16 NIAGARA INCOME OPPORTNTS
Palmer Square Opp Inc

17.89

World Income Funds

BlueBay Destra Itl E:A BlueBay Destra Itl E:I 24.00 24.03 23.96 BlueBay Destra Itl E:L BlueBay Destra Itl E:T Calamos-Aksia ACI:A Calamos-Aksia ACI:C 10.61 NA NA NA NA NA NA NA NA NA Calamos-Aksia ACI:I 10.61 Calamos-Aksia ACI:M 10.61 Carlyle Tact Pvt Cred:A NA Carlyle Tact Pvt Cred: Carlyle Tact Pvt Cred:L Carlyle Tact Pvt Cred:M Carlyle Tact Pvt Cred:N Carlyle Tact Pvt Cred:U Carlyle Tact Pvt Cred:Y Fid MS Cr;A Fid MS Cr;C Fid MS Cr;l Fid MS Cr;L Fid MS Cr;L NA
Jackson Credit Opps:1
Lord Abbett Cred Opps Fd
Lord Abbett Cred Opps Fd
Lord Abbett Cred Opps Fd
Lord Abbett Cred Opps Fd Lord Abbett Crd Op:U

Oaktree Dvsfd Income;D PIMCO Flexible EM I;Inst **National Muni Bond Funds** Ecofin Tax-Exempt Prv Cr Lind Cap Pt Mun Cred Inc Nuveen En HY Muni Bd:A1 Nuveen En HY Muni Bd:A2 Nuveen En HY Muni Bd:I NYLI MacKay Mu IO;A1 NYLI MacKay Mu IO;A2 NYLI MacKay Mu IO;A3 NYLI MacKay Mu IO;I 10.29 PIMCO Flex Mun Inc: A-3 10.60 PIMCO Flex Mun Inc;A1 10.60 PIMCO Flex Mun Inc;A2 10.60

Single State Muni Bond PIMCO CA FMI;A-1 10 NA NA PIMCO CA FMI:Inst 10.50

PIMCO Flex Mun Inc;Inst 10.60

September 20, 2024

5.03 5.53 4.62

5.33 5.40 4.82

NA NA

Money Rates

ARK Venture 26.00 NA
ArrowMark Financial Corp BANX NA 21.23
CAZ Strategic Opps;l NA NA
CAZ Strategic Opps;R NA NA

Key annual interest rates paid to borrow or lend money in U.S. and international markets. Rates below are a

Borrowing Benchmarks | wsj.com/market-data/bonds/benchmarks

10.91

NA NA NA NA NA

NA NA NA NA

11.4 11.3 9.7 9.0

10.0

10.3 10.8 7.7

-52-WEEK-Week -52-WEEK-Latest High

	Infl	ation					
	Aug. ir	ıdex	Chg Fro	m (%)			
	le	vel	July '24	Aug. '23			
U.S. consu	ımer pri	ce ind	ex				
Allitems	314	.796	0.08	2.5			
Core	320	.017	0.25	3.2			
International rates							
	Latest	Week ago	. −52 High	2-Week – Low			
Prime rate	es						
U.S.	8.00	8.50	8.50	8.00			

U.S.	8.00	8.50	8.50	8.00				
Canada	6.45	6.45	7.20	6.45				
Japan	1.625	1.625	1.625	1.475				
Policy Rate	es.							
Euro zone	3.65	4.25	4.50	3.65				
Switzerland	1.75	1.75	2.25	1.75				
Britain	5.00	5.00	5.25	5.00				
Australia	4.35	4.35	4.35	4.10				
Overnight	Overnight repurchase							
U.S.	4.86	5.42	5.48	4.85				
U.S. government rates								
Discount								

0.0.	7,00	7.16	2.10	1.02
U.S	. govern	ment	rates	
Discount				
	5.00	5.50	5.50	5.00

Latest ago Commercial paper (AA financial) Federal funds Effective rate 4.8300 n.a. 5.3500 4.8300 90 days **5.0500** 5.5500 5.6500 5.0500 High **Secured Overnight Financing Rate 4.8000** 5.3200 5.3300 4.8000 Low **4.8200** 5.3300 5.3300 4.8200 Bid **4.8300** 5.3600 5.3600 4.8300 Offer

Treasury bill auction 4 weeks 4.700 4.895 5.345 4.750 4.530 5.340 4.410 13 weeks 4.410 26 weeks

Week -52-Week Latest ago Call money

	Latest	Value Traded		
			піуп	LOW
DTCC GO	:F Repo In	dex		
Treasury	4.865	69.382	5.504	4.857
MBS	4.900	53.980	5.689	4.887
	Weekly	<i>y</i> surve	y	
	Late	st Wee	kago Y	ear ago

4.62

4.82

Freddie Mac 30-year fixed 7.25 7.25 6.75 15-year fixed 5.15 5.27

Notes on data:

6.75

U.S. prime rate is the base rate on corporate loans posted by at least 70% of the 10 largest U.S. banks, and is effective September 19, 2024. **Other prime rates** aren't directly comparable; lending practices vary widely by location; **Discount rate** is effective September 19, 2024. **Secured Overnight Financing Rate** is as of September 19, 2024. **DTCC GCF Repo Index** is Depository Trust & Clearing Corp.'s weighted average for overnight trades in applicable CUSIPs. Value traded is in billions of U.S. dollars. **Federal-funds rates** are Tullett Prebon rates as of 5:30 p.m. ET. Sources: Federal Reserve; Bureau of Labor Statistics; DTCC; FactSet;

Tullett Prebon Information, Ltd.

Cash Prices | wsj.com/market-data/commodities

Friday, September 20, 2024

These prices reflect buying and selling of a variety of actual or "physical" commodities in the marketplace—separate from the futures price on an exchange, which reflects what the commodity might be worth in future months.

Friday
Copper,Comex spo Iron Ore, 62% Fe CF
79.700 Steel, HRCUSA, FO r,w 13.950 Battery/EV me
BMI Lithium Carbonate, E BMI Lithium Hydroxide, E.
2609.00 BMI Nickel Sulphate, EX 2605.85 BMI Flake Graphite, FOB Chin
2892.49 *2590.60 Fibers
*2575.35 Burlap,10-oz,40-inc 2693.97 Cotton,11/16 std lw 2719.88 Cotlook 'A' Index-t 2719.88 Hides,hvy native st 3131.20 Wool,64s,staple,Te
2542.07 2719.88 Grain
31.1000 Corr,No. 2 yellow,C 31.2790 Corr gluten feed,M 39.0990 Corr gluten meal.V 423.4500 Cottonseed meal-L 40miny feed,Cent I Meat-bonemeal,50 Oats,No.2 milling,M 50 Cottonseed meal-L 40miny feed,Cent I Meat-bonemeal,50 Oats,No.2 milling,M 50 Cottonseed meal-L 40miny feed,Cent I Meat-bonemeal,50 Oats,No.2 milling,M 50 Cottonseed meal-L 40miny feed,Cent I Meat-bonemeal,50 Cottonseed meal-L 40miny feed,M 50 Cottonseed meal-L 40miny feed,Cent I Meal-L 40miny feed,M 50 Cottonseed meal-L 40miny feed,Cent I

*987.0

*1089.0 992.0

1075.0

*2523.0

William Checks What the Comm	Friday	gire be worthin ruture months.	Friday
Copper,Comex spot Iron Ore, 62% Fe CFR China-s Steel, HRC USA, FOB Midwest Mill-s	4.2815 *92.6 *720.0	Wheat,No.2 soft red,St.Louis-u Wheat - Hard - KC (USDA) \$ per bu-u Wheat,No.1soft white,PortId,OR-u	4.6350 n.a. 5.7750
Battery/EV metals	10475	Food	
BMI Lithium Carbonate, EXW China, ~99.2%-v,w BMI Lithium Hydroxide, EXW China, ~56.5%-v,w BMI Cobalt sulphate, EXW China, ~20.5%-v,w BMI Nickel Sulphate, EXW China, ~222%-v,rn BMI Flake Graphite, FOB China, ~100 Mesh, 94.95%-v,m	9825 3913 3807 460	Beef,carcass equiv. index choice 1-3,600-900 lbsu select 1-3,600-900 lbsu Broilers, National comp wtd. avgu,w	281.15 267.60 1.2735
Fibers and Textiles		Butter,AA Chicago-d Cheddar cheese,bbl,Chicago-d	2.9725 259.00
Burlap,10-oz,40-inch NY yd-n,w Cotton,11/16 std lw-mdMphs-u Cotlook 'A' Index-t Hides,hvy native steers piece fob-u Wool,64s,staple,Terr del-u,w	0.8300 0.6702 *82.80 n.a. n.a.	Cheddar cheese,blk,Chicago-d Milk,Nonfat dry,Chicago lbd Coffee,Brazilian,Comp-y Coffee,Colombian, NY-y Eggs,large white,Chicago-u	223.75 138.00 2.6225 2.8329 2.9050
Grains and Feeds		Flour,hard winter KC-p Hams,17-20 lbs,Mid-US fob-u	15.80 n.a.
Bran,wheat middlings, KC-u,w Corn,No. 2 yellow,Cent IL-bp,u Corn gluten feed,Midwest-u,w Corn gluten meal,Midwest-u,w Cottonseed meal-u,w	91 3.6300 108.4 421.8 n.a.	Hogs,lowa-So. Minnesota-u Pork bellies,12-14 lb MidUS-u Pork loins,13-19 lb MidUS-u Steers, TexOkla. Choice-u Steers,feeder,Okla. City-u,w	82.15 n.a. 1.1325 n.a. 270.75
Hominy feed, Cent IL-u, w Meat-bonemeal, 50% pro Mnpls-u, w	108 328	Fats and Oils	
Oats,No.2 milling,Mnpls-u Rice, Long Grain Milled, No. 2 AR-u,w Sorghum,(Milo) No.2 Gulf-u SoybeanMeal,Cent IL,rail,ton48%-u,w	4.1700 n.a. n.a. 346.90	Degummed corn oil, crude wtd. avgu,w Grease,choice white,Chicago-h Lard,Chicago-u Soybean oil,crude;Centl IL-u,w	n.a. 0.4500 n.a. 0.4325

9.6200

KEY TO CODES: A=ask; B=bid; BP=country elevator bids to producers; C=corrected; D=CME; E=Manfra,Tordella & Brookes; H=American Commodities Brokerage Co; K=bi-weekly; M=monthly; N=nominal; n.a.=not quoted or not available; P=Sosland Publishing; R=SNL Energy; S=Platts-TSI; T=Cotlook Limited; U=USDA; V=Benchmark Mineral Intelligence; W=weekly; Y=International Coffee Organization; Z=not quoted. *Data as of 9/19

Soybeans, No.1 yllw IL-bp, u

Wheat,Spring14%-pro Mnpls-u

0.4725

n.a.

Tallow.bleach;Chicago-h

Tallow,edible,Chicago-u

Sept.13	BRC	BRCC	G. Welling	DOI	685	3.17	2,170	3.37	-7.2
Sept. 11	Franklin Resources	BEN	C. Johnson	В	100	19.08	1,908	20.81	-30.1
Sept. 16-18	Singular Genomics Systems	OMIC	K. Tang	BI	122	12.74-17.21	1,806	16.42	19.0
Sept. 17-19	Culp	CULP	A. English	ВІ	240	5.85-6.31	1,462	6.47	11.7
Sept.12	ViaSat	VSAT	R. Baldridge	D	55	14.75-15.00	820	12.77	-54.3
Sept. 12-16	Inhibrx Biosciences	INBX	M. Lappe	CEOI	40	15.05-17.13	629	16.28	n.a.
Aug. 20	Quanterix	QTRX	D. Walt	D	47	13.29	625	14.54	-46.8
Sept. 17-19	Gran Tierra Energy	GTE	G. Guidry	CEO	100	6.03-6.27	617	6.37	12.9
Sept.11	Heartland Express	HTLD	M. Gerdin	CEOI	50	11.67	584	12.00	-15.8
Sept. 12-16	Reneo Pharmaceuticals	RPHM	B. Leonard	ВІ	359	1.31-1.40	484	1.50	-6.3
Sept. 18	Epsilon Energy	EPSN	J. Stabell	CEOI	74	5.05	374	5.50	8.3
Sept.13	Lakeland Financial	LKFN	S. Leniski	OI	5	65.04	293	67.25	3.2
Sept. 11-13 Sept. 16-17	Dell Technologies	DELL	M. Dell M. Dell	CEO CEO	3,920 2,682	106.25-114.50 112.79-118.08	433,653 309,723	117.50	53.6
Sept. 13-17	Palantir Technologies	PLTR	A. Karp	CEO	9,000	36.00-37.04	325,584	37.20	116.7
Sept. 17-19 Sept. 17-19 Sept. 17-19 Sept. 12 Sept. 12 Sept. 12		WMT	J. Walton S. Walton A. Walton J. Walton S. Walton A. Walton	BI BI BI BI BI BI	2,164 2,164 2,164 934 934 934	78.08-79.83 78.08-79.83 78.08-79.83 79.46-79.87 79.46-79.87 79.46-79.87	170,979 170,979 170,979 74,217 74,217 74,217	79.06	50.4
Sept.13	UWM Holdings	UWMC	I. Mat	CEOI	10,842	8.45	91,615	8.42	17.8
Sept. 17-18	Intuit	INTU	S. Cook	ODI	77	632.98-648.63	50,025	644.99	3.2
Sept. 17-18 Sept. 13-16	Carvana	CVNA	E. Garcia E. Garcia	B B	200 175	152.63-166.54 140.97-153.19	31,518 25,671	173.85	228.4
Sept.12	Netflix	NFLX	J. Hoag	DI	44	682.69-693.89	30,060	701.03	44.0
Sept. 12-13	NVIDIA	NVDA	J. Huang	CEO	240	115.82-120.29	28,552	116.00	134.2
Sept.17	Airbnb	ABNB	B. Chesky	CEO	231	120.00	27,692	131.18	-3.6

Sept. 12-16 IES Holdings * Half the transactions were indirect **Two day transaction

W.W. Grainger

Sept. 16

Insider Buying and selling by sector

Based on actual transaction dates in reports received this past week

Sector	Buying	Selling	Sector	Buying	Selling
Basic Industries	1,505,993	11,159,338	Finance	3,509,655	119,862,735
Capital Goods	848,838	80,664,083	Health care	12,264,967	153,639,803
Consumer durables	3,929	42,399,123	Public Utilities	522	17,347,484
Consumer non-durables	2,183,153	26,649,604	Technology	1,535,639	373,144,730
Consumer services	746,822	140,650,659	Transportation	583,675	6,194,662
Energy	7,918,006	5,491,194			

GWW D. Macpherson **CEO**

CEOI

J. Gendell

IESC

Sources: LSEG Data and Analytics; Dow Jones Market Data

28 992.23-1004.81 **27.525** 1032.22

150 157.82-163.30

Doctors Fight Private-Equity Takeovers

By Chris Cumming

Private equity's takeover of thousands of healthcare businesses has sparked a backlash among physicians, and many are joining new professional organizations to oppose corporate influence in U.S. medicine.

Several of these groups are working with lawmakers to craft legislation to limit private equity's influence in healthcare. Others aim to educate peers about private equity's impact on their profession.

These groups underscore a potential problem facing private-equity investors in the medical sector. Many doctors hold strikingly negative views of buyout firms and, increasingly, are taking political action against them.

"We see on a daily basis that physicians are just rising up against corporate involvement in medicine," said emergency-room doctor Mitchell Li, who has worked and trained under private equity-owned practices. Three years ago he founded the advocacy group Take Medicine Back, one of the organizations leading the doctors' revolt against private eq-

The huge sums invested by buyout firms in the healthcare sector—nearly \$1 trillion since 2012, by one estimate—have profoundly changed the indus-

While most analyses focus on how private-equity ownership affects patients, it has also had a deep impact on physicians. This shift accelerated during the Covid pandemic, when private-equity investment rose and concentration increased as many doctors. struggling under financial and professional strains, sold their

practices to larger groups. In 2022 and 2023, corporate entities such as private-equity firms acquired 5,300 physician practices, an 11% increase in just two years, according to the Physicians Advocacy Insti-

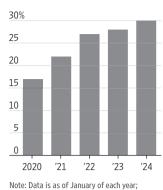
Now, more U.S. physicians than ever before are employof hospitals, corporations private-equity-owned groups-rather than independent owner-practitioners, the

Many are angry about losing autonomy and feel Wall Street investors are standing between them and patients, according to Vicki Norton, an emergency doctor in Florida and the president-elect of the roughly 8.000-member American Academy of Emergency Medicine.

People are so upset and dissatisfied with what is happening in medicine, and they know that private equity is part of it," she said.

Founded in 1993, AAEM is

perhaps the oldest doctors' group to oppose private equity. Newer ones include Take Medicine Back; the 13,000-physician Coalition for Patient-Centered Care; and the Association of Independent Medicine, formed in 2022 by Chicago cardiac anShare of physician practices with corporate owners



percentages are rounded to the nearest percentage point ource: Physicians Advocacy Institute and Avalere Health

esthesiologist Marco Fernan-

These newer advocacy groups are small compared with some older doctors' groups, whose membership is often divided in their view of private equity.

The American Medical Association, the nation's largest doctors' organization with over 270,000 members, hasn't taken a position on private equity in healthcare. But it opposes the corporate practice of medicine and in 2022 passed a resolution against private equity's involvement in medical training.

Some AMA members want the group to go further. At its annual meeting last year, a resolution to seek a federal ban on corporate medicine sparked intense debate but ultimately fell

Medical Practice Association, a group founded last year with the support of private equitybacked physicians' groups and others, supports private equity. arguing that taking on investors is one of the few options remaining for physicians who don't want to work for a big

corporation or hospital group.

Paul Berggreen, an Arizona gastroenterologist and AIMPA's president, said joining a private equity-backed management-services organization can allow practices to thrive financially without losing professional autonomy. At his group there is "a firewall between the business imperatives and the clinical decisions," he said.

Berggreen's Phoenix-based practice is part of GI Alliance, the nation's largest gastroenterology provider, which in 2022 executed a physician-led buyout from private-equity owner Waud Capital Partners at a \$2.2 billion valuation. Apollo Global Management helped finance the deal.

David Eagle, AIMPA vice president and an oncologist at New York Cancer & Blood Specialists, said physicians need financial partners in an increasingly consolidated medical field, and private equity-affiliated practices shouldn't be singled out or put at a disadvantage.

"It is important to allow different models to compete on a level playing field. I don't see how in a consolidated health-

The American Independent care landscape anyone can work without a source of capital," Eagle said.

The American Investment Council, private equity's main trade group, argues the industry is a scapegoat for deeper problems in healthcare. It says private-equity investment allows medical providers to expand and serve patients and to develop new treatments.

These arguments, however, appear to have little traction among many doctors. There is evidence suggesting private equity's unpopularity may be making it harder for buyoutbacked practices to recruit and retain physicians.

Jane Zhu, a primary-care physician and professor at Oregon Health & Science University who has studied physicians' views of private equity, says there is a perception that buyout investors meddle in medical decisions.

"Physicians are very protective of their autonomy and clinical decision-making, and there is a fear that shifts in ownership may erode that freedom," Zhu said.

Almost 61% of physicians have a negative view of private equity, and less than 11% have a positive view, according to a study Zhu and other researchers published in March. Earlier studies focusing on ophthalmology and dermatology trainees found the majority of respondents don't want to work private-equity-backed

Far from monopolizing the space, Google is actually losing ground, Google lawyer Karen Dunn said in her opening trial statement earlier this

'There will be no witness in this case who can say with clarity where this industry is going in the next five years,' Dunn told the court. "Not even in the next year."

The case will be decided by U.S. District Judge Leonie Brinkema in Virginia. It could be several months before she issues a ruling.

If she rules against Google, she could order the company to sell off parts of its ad-tech business, which by some estimates is worth upward of \$100 billion.

Brinkema has given little indication of her views. But one question she posed to a witness suggested she is weighing how a breakup of Google would affect the mar-

During the testimony of Jed Dederick. an executive at Google ad-tech competitor The Trade Desk, Brinkema asked what would happen to the adbuying experience "if, as a result of this litigation, Google were blown apart" and data were "spread out among 10, 15, 20, and 30 little entities."

Dederick responded that the resulting lack of scale wouldn't be a problem for market participants.

"Publishers wouldn't let their ads go unsold," he said.

Boston Generating **Creditors** Lose an Appeal

By Alicia McElhaney

A federal appeals court blocked Boston Generating's creditors from recovering over \$700 million transferred to its shareholders before its bank-

A three-judge panel of the U.S. Court of Appeals for the Second Circuit in New York ruled Thursday that because the money at issue was transferred via a financial institution following a leveraged recapitalization deal. payment is subject to safeharbor rules that protect it from creditors.

The decision clarifies how the safe-harbor provisions of U.S. bankruptcy law will be applied to protect payments from being unwound if they are made by or to a financial institution in connection with a securities or commodities contract. Boston Generating, a New

England power company, filed for bankruptcy in August 2010 and was sold after an auction to energy company Constellation Energy Group. Boston Generating took out loans to finance a \$925 million tender offer and \$35 million dividend for the stockholders of its parent company, EBG Holdings. A liquidating trustee charged with digging up money for creditors filed a lawsuit seeking to unwind the leveraged recapitalization transaction and claw back shareholder payouts.

Mark Holliday, the liquidating trustee, brought claims seeking to recover the Boston Generating and EBG transfers following the leveraged recapitalization. A lawyer for Holliday didn't respond to a request to comment Friday.

Boston Generating deposited the proceeds from its lenders in a bank and days later transferred \$708 million of that capital—through a bank-to EBG. The Second Circuit found that Boston Generating and EBG both qualified as financial institutions protected by the safe harbor because the bank was acting as

their agent. "What it does is it affirms the standard that is continuing to crystallize, certainly in the Second Circuit, that the safe-harbor provision will be honored in transactions like this," said Sean O'Donnell, a lawyer who represents the

All told, the case took more than a decade to litigate. Because of the length of the case, some of the defendant funds, particularly those that were winding down, settled with the trustee rather than remain in court, O'Donnell

Initial iobless claims

EIA report: natural-gas

Previous change in stocks in

Earnings expected

Costco Wholesale

Accenture

TD Synnex

Vail Resorts

CarMax

Jabil

billions of cubic feet

223,000

2.78/2.71

0.85/0.75

5.08/4.86

2.22/2.45

2.80/2.78

(4.22)/(3.35)

Previous

Expected

largest group of defendants.

Google Fretted Over Ad Strength

 $Continued\ from\ page\ B1$ a larger trend: Google acquir-

ing nascent rivals to corner the market and then locking customers into using its products by conditioning access to one software tool on them paying for another. Under friendly cross-exami-

nation by a Google lawyer, Mohan denied that he was suggesting to buy AdMeld to eliminate competition. The acquisition filled a gap in Google's product offerings, allowing it to deliver better results for customers, he said.

Rather than taking a larger slice of the pie for itself, Google was "growing the pie for every part of the industry,"

he said. In a 2016 email introduced by the government, Google ex-Jonathan Bellack asked colleagues: "Is there a deeper issue with us owning the platform, the exchange, and a huge network? The analogy would be if Goldman or Citibank owned the [New York Stock Exchange]."

On the witness stand, Bellack, who has since left the company, testified that he wasn't saying Google had con-



Google legal team members outside U.S. District Court in Alexandria, Va., earlier this month.

flicts of interests but rather airing potential concerns of other market participants.

The Justice Department also cited a 2018 email from another then-executive. Chris LaSala, who raised concerns internally over the 20% cut that Google takes from many of its AdX customers, saying Google was extracting "irrationally high rent" from us-

"I don't think there is 20% of value in comparing two bids," wrote LaSala. "AdX is not providing additional liquidity to the market. It is simply running the auction."

Another former Google ex-

ecutive, Eisar Lipkovitz, testified that Google's omnipresence in ad tech gives rise to conflicts of interest. Lipkovitz was rebuffed when he tried to get Google to lower the cut it took from AdX, he testified in a prerecorded deposition.

The Justice Department finished presenting its case on Friday. Other witnesses included Google customers. One was Stephanie Layser, a former News Corp executive, who said she felt she had no choice but to use Google technology because the search giant has such market power that switching to another ad server would have meant losing out on millions in advertising revenue.

Layser now works at Ama**zon.com**. News Corp, The Wall Street Journal's parent company, has been an outspoken Google critic and was among the companies contacted by antitrust investigators.

Google's legal team in the civil case will spend the coming week presenting its defense. The company says the government has presented a contorted view of the advertising market. It makes no sense to focus on display ads. Google argues, when the industry is shifting to apps, social media

Monday

scheduled for the day

Tuesday Short-selling reports

Nasdag

AutoZone 53.60/46.46 **KB** Home 2.06/1.80 Thor Industries

Wednesday

Previous change in stocks in

up 0.1

Purch., previous

up 5.0%

New-home sales

30-year fixed

Freddie Mac mortgage survey

15-year fixed

MARKET EVENTS COMING THIS WEEK

Earnings expected

Jefferies Financial

Micron Technology

Durable-goods orders

July, previous up 9.8%

Thursday

Aug., expected

GDP Deflator

2nd qtr. sec. est.

2nd qtr., third est.

Gross domestic

2nd qtr. sec. est.

2nd gtr., third est.

Percentage change, annual

product:

Cintas

Concentrix

1.00/0.93

2.93/2.71

0.78/0.22

1.11/(1.07)

down 3.0%

up 2.5%

up 2.5%

up 3.0%

up 2.9%

6.09%

5.15%

July, previous up 0.5% Aug., expected up 0.3%

Friday

Personal income July, previous up 0.3% Aug., expected up 0.4%

Personal spending

U.Mich. consumer index

Sept., prelim Sept., final

FactSet Estimates earnings-per-share estimates don't include extraordinary items (Losses in paren theses) • Adjusted for stock split

Note: Forecasts are from Dow Jones weekly survey of economists

Intel's Fall From Chip Champion

Continued from page B1 ing fallen behind rivals in Asia in the race to manufacture the fastest-performing chips with the smallest transistors.

Playing catch-up Gelsinger, who had previ-

ously worked at Intel for decades and was its first chief technology officer, had a plan to bring back the swagger Intel enjoyed under chiefs such as Andy Grove and Paul Otellini. Doing so would entail catch-

ing up with those Asian rivals, Taiwan Semiconductor Manufacturing Co. and Samsung **Electronics**. He also planned to spend heavily to build out Intel's manufacturing operations, and to sell that production capacity to design-only chip companies such as Qualcomm-breaking into the socalled foundry business that TSMC and Samsung dominate.

It was a costly, ambitious but the ingredients seemed to be there for it to work: a strong core business of making chips for personal Intel last week announced moves including spending controls. computers and servers along with a constellation of side businesses that could help fund Intel's next stage of growth.

Gelsinger quickly sought to use Intel's financial resources to build up the contract chipmaking business, engaging in talks to buy GlobalFoundries for about \$30 billion the summer after he took over. That deal fizzled, but in an August 2021 interview, the CEO said Intel remained acquisitive. "There will be consolidation in the industry," he told the Journal. "That trend will continue, and I expect that we're going

to be a consolidator." He eventually settled on an acquisition of Tower Semiconductor, another contract chip

maker, for more than \$5 billion, although that deal was called off last year after Chinese regulators failed to ap-

Rise of Nvidia As the costs mounted at In-

tel, generative AI started taking off. The boom shifted demand away from Intel's central processors toward "graphics processing units" from Nvidia, whose different design is better suited to the creation and deployment of the most-sophisticated AI systems. As tech companies begged for Nvidia's scarce AI chips, many of Intel's processors sat on the shelves.

Gelsinger was compelled to slash costs to preserve his

and streaming services.

turnaround effort. Intel laid off

thousands of people starting in

2022 and cut its dividend last

vear. It wasn't enough, Last

month. Gelsinger said it would

lay off 15,000 people, cut costs

by \$10 billion next year and

more acute than I expected."

Gelsinger said at the time, call-

ing the cuts "the hardest thing

nounced new moves, including more spending controls and

further separation of its design

and manufacturing opera-

stopped short of selling or

spinning off the manufacturing

business as some investors

in Intel's fortunes are narrow-

ing but still possible, analysts

say. Cutting costs can help it

muddle through its struggles,

although its declining stock

price has made it more vulner-

able to takeover bids and in-

Intel's stock was down nearly

70% from its level in early

2020, when it reached its high-

est point since the dot-com

bust. Nvidia's shares are up

more than 18-fold in that pe-

Friday after the Journal's re-

port on Qualcomm's interest.

Intel's stock ended up 3.3%

Through Thursday's close,

Prospects for a positive turn

Gelsinger

Intel this past week an-

I've done in my career."

tions—though

have urged.

vestor activism.

"The AI surge was much

scrap the dividend.

THE TICKER

No major events are

of current position, at Aug 30

Earnings expected

1.30/1.68

down 1.6

EIA status report millions of barrels Crude-oil stocks

Gasoline stocks up 0.1 Distillates Mort. bankers indexes

Refinan., prev. up 24.0%

July, previous 739,000 Aug., expected 700,000 FINANCIAL ANALYSIS & COMMENTARY

Satellite Economy's Sweet Spot Has Markets Wary

'Medium Earth orbit' is a promising niche in space, but investors have fears

There seems to be no orbit where publicly listed satellite operators can escape the wrath of the market.

For the first time, the North Atlantic Treaty Organization will contract satellites in "medium Earth orbit" to fulfill some of its communications needs: Earlier this month. it awarded \$200 million to Luxembourg's SES, the only active commercial operator in this segment through its O3b mPOWER constellation.

The medium Earth orbit, or MEO, isn't as famous as its neighbor, the low Earth orbit, or LEO, from which Elon Musk's Starlink has revolutionized the space economy through mini-satellites that can communicate with Earth's surface in 20 milliseconds. Nor is it as distant as the geostationary orbit used by traditional firms, by which a single satellite can cover onethird of the planet's surface.

MEO sits somewhere in between, starting 1,200 miles above sea level and ending 21,000 miles above

Medium Earth orbit is the region of choice for navigation systems such as the Global Positioning System. It is also ideal for Earth observation, a booming area of business that spans agriculture, urban planning and environmental monitoring, and is expected to generate \$700 billion in value added by

2030, according to the World Eco-

nomic Forum.

From medium orbit, satellites can send signals to the surface and back in less than 150 millisecondsfive times as fast as from geostationary orbit. Apart from gaming and video chatting, this is usually sufficient for most use cases.

And MEO is still high enough to allow for global continuous coverage with six to eight satellites, if the poles are excluded. SES currently does it with 26.

Meanwhile, Starlink has about 5,000 satellites in low orbit. Each sees only a small patch of the Earth, and briefly, because it circles the planet about 15 times a day. So it has to constantly hand off service to a neighboring node, which is complex and can lead to interruptions.

This is the reason MEO is often thought of as the sweet spot of

To reinforce congested areas and have backups, governments and commercial customers of satellite services often want to diversify. Traditional players such as California-based Viasat, France's Eutelsat and Canada's Telesat are now trying to combat Starlink by combining LEO satellites with geostation-

SES satellites could have a groundbreaking role to play in "hybrid" constellations: They sit closer to the LEO layer below, and could serve as "space relays" that aggregate and transmit data from the minisatellites to ground stations or other parts of the constellation. SES successfully tested this capability in June.

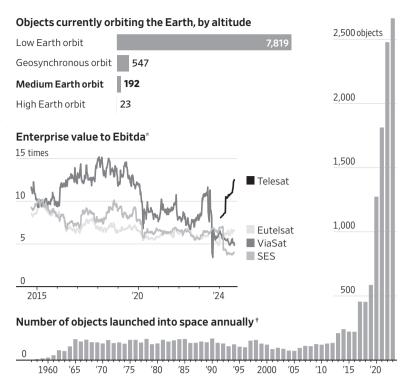
And yet, SES stock has lost more than 80% of its market value over the past decade, roughly in lockstep with Viasat, Eutelsat and Telesat. Investors are so down on the sector that those who buy telecommunications firms will often bet against satellite firms as a way to hedge risk, brokers say.

Previously, these businesses would spend a few hundred million dollars on a big satellite that could spend 20 years providing lackluster service, and enjoy captive demand from governments and consumers. Suddenly, advances of semiconductor technology and the LEO revolution have led to minisatellites being built for \$1 million and replaced in

Also, the popularity of streaming has led to "cord-cutting" of satellite-TV services. SES's video division has lost one-quarter of its revenue over the past five years. Its other services have grown 53%, but they don't generate the same massive profit margins.

Incumbents are making big investments. However, the resulting capacity war with Starlink—run by privately owned **SpaceX**—is depressing prices.

Satellite firms also are gaining scale, as shown by the recent Eutel-



*Earnings before interest, tax, amortization and depreciation, based on 12-month forward analyst estimates †Includes satellites, probes, landers, crewed spacecrafts, and space station flight elements, launched into Earth orbit or beyond Source: Orbiting Now (Objects orbiting the earth); FactSet (enterprise value to ebitda); United Nations Office for Outer Space Affairs via OurWolrldInData (number of objects)

sat-OneWeb and Viasat-Inmarsat mergers. SES is swimming in cash. which it got from selling a portion of its C-band spectrum in the U.S. to make it available for 5G. In April, it announced that it will use the funds to purchase Virginia-based Intelsat, which recently emerged from bankruptcy. Investors, who wanted payouts instead, have reacted badly.

There is still potential upside: SES trades at a lower valuation than its peers, despite having the largest operating margin and being the only one with a significant dividend yield. Also, it doesn't directly compete in consumer broadband, where Starlink is unbeatable.

But investors might not jump in until the MEO approach proves that it can live up to its promise. Power issues with six of SES's mPOWER satellites have significantly affected their operational life and broadband capacity. It underscores a key difference with Starlink: MEO satellites aren't as disposable when something goes wrong; they are costly, sophisticated machinesmore in the vein of the traditional satellite business model.

Albert Einstein's equivalence principle states that floating in space and free fall are indistinguishable. So far, this remains true for listed satellite companies.

-Jon Sindreu

Sorry, the Fed Can't Save Us From a Bear Market

Wall Street commentary about the rate cut could have filled a very long and boring book, but much of what you need to know about its effect on the stock market can be found in "The Wizard of Oz."

The great and powerful man behind the central-bank curtain, Jerome Powell, really can't do as much as people think to keep their portfolios from shriveling if the wheels are starting to come off the economy. Stocks' reaction to Wednesday's cut was exuberant. That often proves to be a head fake—we still don't know how this movie ends.

Take the start of the rate-cutting cycle in 2007-one that coincidentally began on the same day of the year, the same starting federal-funds rate, and was for an identical amount, half a percentage point—as Wednesday's move. The Dow Jones Industrial Average had its largest gain in more than four years, rising 336 points, the equivalent of about 1,000 points today. Lehman Brothers shares were among the top performers, surging 10%.

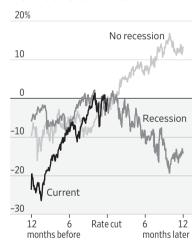
But as we know now, stocks were three weeks from a bull-market

peak, a recession would begin in January 2008, and Lehman would collapse less than a year later in the largest-ever U.S. bankruptcy. By that time, the Fed had cut rates six more times, taking rates to 2%, their lowest in nearly four years. In the two months after the Lehman panic, the Fed made three steep cuts, slashing rates to zero (technically a range of 0% to 0.25%) for the first time ever.

Stocks surged then too, with the benchmark S&P 500 jumping 4.7%. The Dow's gain of 360 points would be nearly 1,700 today. Yet they erased all of that day's rally in less than a week and would go on to shed another quarter of their value before bottoming in March 2009.

The conditions that existed during the housing crisis were extreme, sparking the worst U.S. downturn since the Great Depression. Extreme events are by definition rare, and most predictions of doom are false alarms. More money is lost bracing for bear markets than in them.

Yet there have been 22 bear markets in the past century for all sorts of reasons. Economists who dismiss the possibility of a tumble just beS&P 500 performance around start of Fed cutting cycles, months before and after



Note: Median performance in each scenario Source: David Kostin, Goldman Sachs

cause specific excesses such as toxic subprime loans as in the mid-aughts or dot-com valuations akin to the late '90s don't exist today could

wind up with egg on their faces. In a classic of the genre, then Bear Stearns chief economist David Malpass wrote a Wall Street Journal op-ed, "Don't Panic About the Credit Market," in August 2007 after a two-month retreat in stock prices. "Unlike the 1998 seizure in credit markets to which many are now drawing comparisons, reservoirs of global liquidity are full to overflowing, not empty as they were that year," he wrote. "The deep 1997-1998 Asian crisis has been replaced with an all-cylinder boom."

Despite five subsequent rate cuts, his employer was among the first high-profile casualties of the credit meltdown. Two months after September 2007's rate-cutting cycle began, the mood darkened, vet a Journal survey of economists that month put the odds of a U.S. recession in the following 12 months at a third.

The Fed chairman doesn't have a magic wand to levitate an economy that is stumbling or a stock market about to do the same. Goldman Sachs strategist David Kostin noted recently that "the trajectory of growth is a more important driver for stocks than the speed of rate cuts." His research shows that, if the

economy is headed into a recession before the first rate cut, then the median path of the S&P 500 has been to lose about 14% of its value in the coming year. If it wasn't headed into a recession, it is the inverse. Lower rates certainly matter for bond investors. They might only blunt an unfolding swoon for stocks since they take long to filter through to companies and consumers.

Claims that the U.S. economy could soon contract aren't convincing, and a pullback of a third or more in stocks would be unusual unless the economy stalls. That helps explain why stocks are near highs. But so does the belief that Fed cuts are a reason to keep buy ing. There are smart people on the fringes warning about excesses in private credit and commercial real estate or the effect of China's slowdown. U.S. stocks have rarely been so expensive, concentrated or dependent on the promise of AI. And government indebtedness around the world has never been as high, making the response to the next recession trickier. We're not in Kansas any more. —Spencer Jakab

BUSINESS & FINANCE

Key Gauge Of Debt Costs Rises

Continued from page B1 opting for the larger reduction, the Fed signaled it was willing to fight to keep the economy out of a recession, which would almost certainly lead to even bigger cuts. At the same time, officials signaled they were optimistic about the economy and most likely will cut rates by a quarter point at future meetings.

A modest uptick in yields won't necessarily undercut the Fed's ambitions. Even with its latest move, the 10-year yield is still down from roughly 5% last October and 4.7% as recently as April. Yields fall when bond prices rise.

Interest rates on new fixedrate mortgages could come down a little if Treasury yields don't. That is because a key component of mortgage rates is the extra differential, or spread, that lenders charge above the 10-year yield—and that has tended to shrink as

the Fed cut rates in the past. Interest-rate futures suginvestors think the



Interest rates on new fixed-rate mortgages could come down a little if Treasury yields don't.

benchmark rate will drop from near 5% now to just under 3% by the end of next year, according to CME Group. Fed officials expect that rate to end next year between 3.25% and 3.5%, according to the midpoint of their forecasts.

Some investors, more pessimistic about the economy, are betting Treasury yields could fall further from here. Jamie Patton, co-head of global rates at TCW, said her team's view is the 10-year yield could drop below 3% within the next six months as the lingering effects of the Fed's previous rate increases help to drive the economy into a recession.

"The Fed easing rates yesterday really doesn't affect the economy today," she said. "It will help the economy in the future, but over the next four to six months, the economy is still going to feel the lagged effects of tightening."

The 10-year yield's direction will be determined by how much extra compensation investors demand to hold longerterm Treasurys over shorterterm debt. Although this term premium trended lower in recent decades, many investors think the 10-year note should yield about a percentage point more than short-term rates once those level out. That is partly because investors are anticipating a large amount of Treasury issuance in the coming years to fund elevated federal budget deficits.

The Fed Is Flying Blind

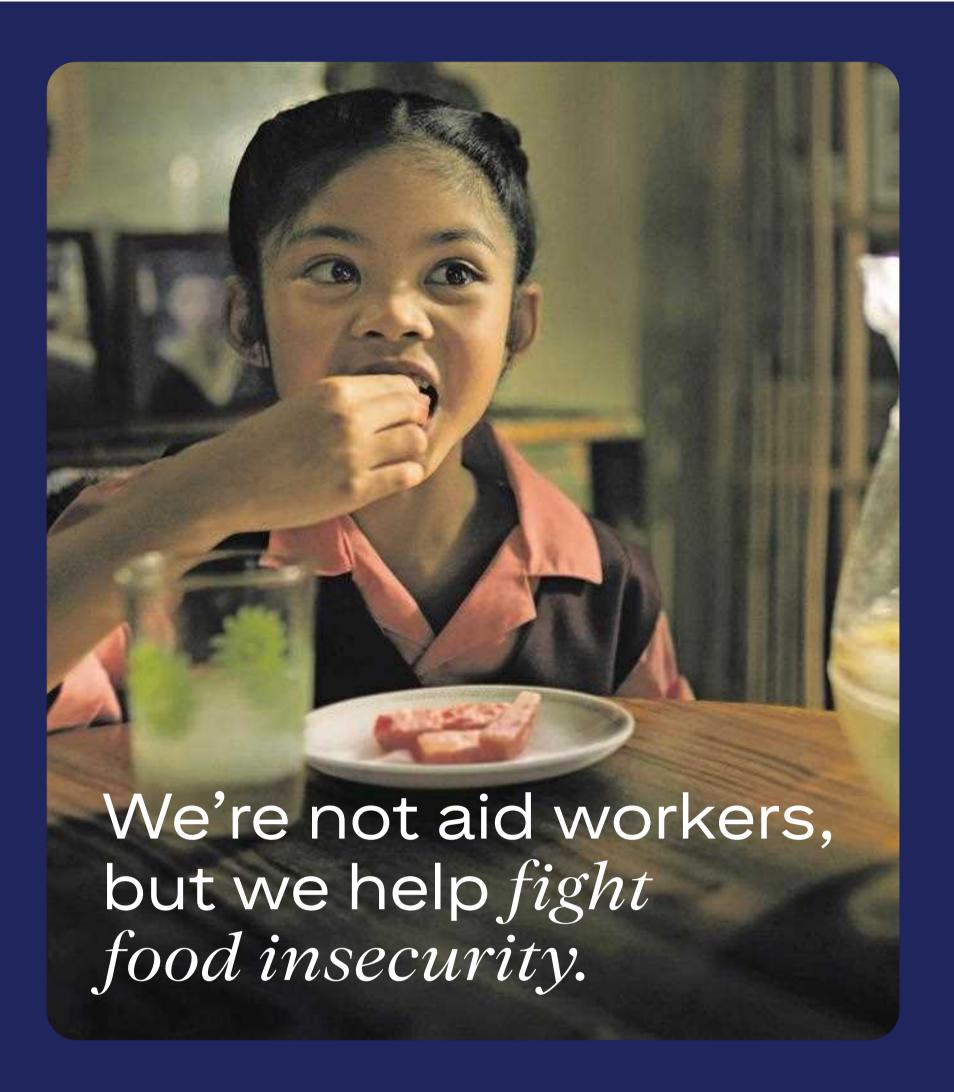
Continued from page B1 Fed forecasts. What Mr. Powell and other policymakers say they expect to do usually has a strong influence on bond yields and so borrowing costs, affecting the economy. If they get their communications right, the market will do their work for them—meaning the Fed itself may end up not needing to do what it planned.

That isn't the case this time. Investors have decided that the Fed will be much more dovish than it says. And the effect is to push down the cost of short-term borrowing as traders anticipate lower rates, while pushing up the cost of longer-term borrowing as investors prepare for the resulting stronger economy to pressure inflation.

The size of the market moves that resulted were chunky for such a short period. Smaller stocks leapt more than 2% on Thursday as lower rates promised relief on their heavy debt costs. The hard-hit speculative growth companies had a particularly good day on Thursday, as did the lowest-rated junk bonds, CCC and below, whose yield is almost back down to the extra above Treasurys they offered just after the Fed's first post-Covid-19 rate rise in 2022.

This reaction is hard to square with a Fed embarking on a series of supersize cuts, something it has done in the past only when recession loomed. If investors were bracing for recession, fair enough. Instead, longer-dated bonds priced in a little more inflation in the long run, with the 30-year Treasury jumping back above 4% after a long decline from April's 4.8%. This is truly pricing for perfection. To work out, investors need inflation to come in cooler and the jobs market to weaken a bit more so the Fed can get comfortable with big cuts, all without any threat of recession that would push up corporate defaults, hit stocks and drag down longdated bond yields.

Something is likely to give, either trouble in the economy or smaller rate cuts than are priced in. Maybe investors should be listening more to what the Fed says about the rest of the year-and worrying that uncertainty about the long term means volatility ahead as the Fed tries to feel its way in the dark.



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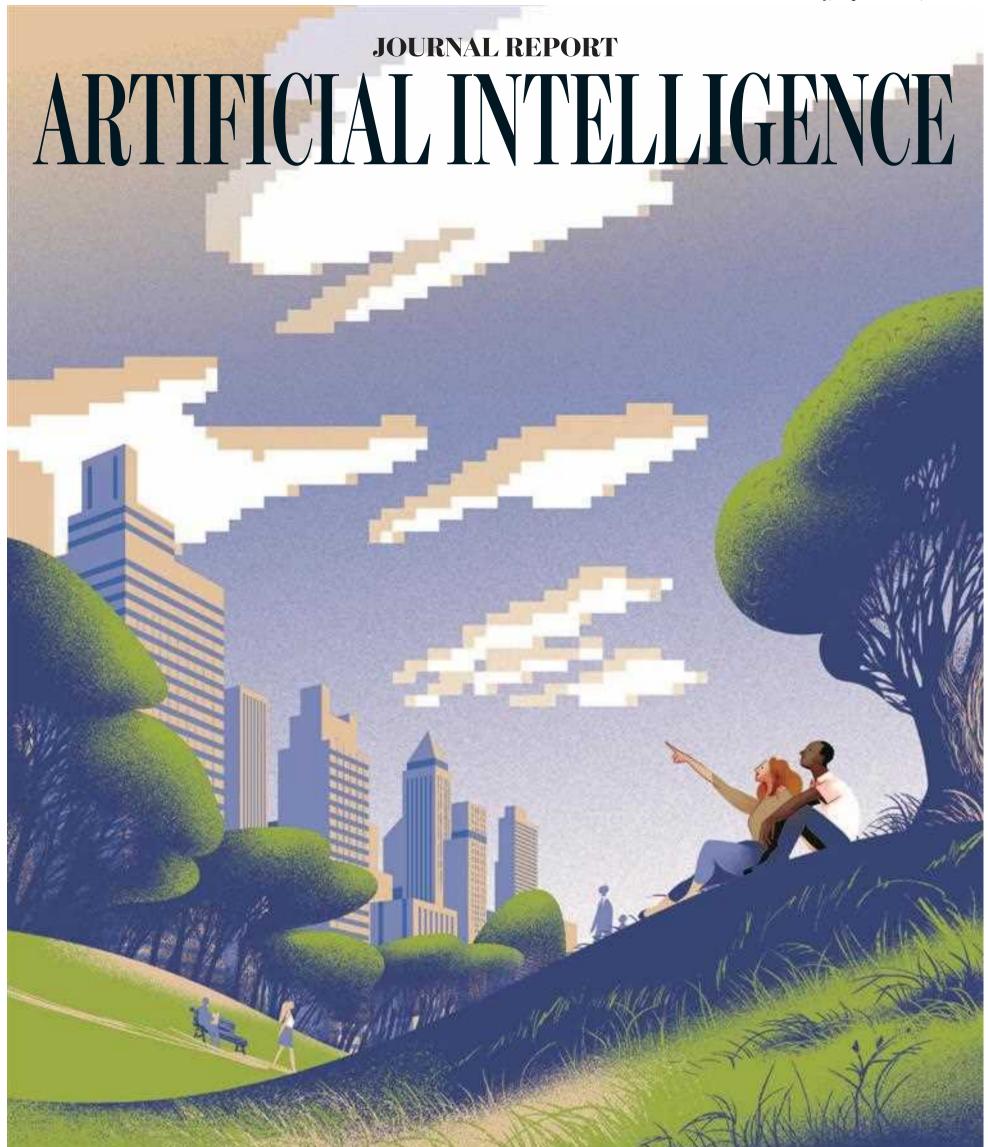
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IT'S THE YEAR 2030.

WHAT WILL ARTIFICIAL INTELLIGENCE LOOK LIKE?

We asked a range of experts to predict whether, in five years, AI will have lived up to the current hype. Be warned: They don't all agree.

BY BART ZIEGLER

HERE WILL artificial intelligence be in 2030?

Will it live up to the hype-boosting economies, creating breakthrough medical treatments, simplifying

everyday life and increasing our knowledge? Or are such forecasts overly optimistic: Will it fizzle out, or change the world for the worse? What about concerns that AI will eliminate millions of jobs, replace

Please turn to page R4

THE JOYS OF TALKING TO CHATGPT

Among the ways I find it useful: It helps me cure writer's block, prepare for meetings in the car and sightsee. Oh, and hang curtains.

BY ALEXANDRA SAMUEL

RTIFICIAL intelligence has become an incredibly useful part of my work and my personal life. Now I've found a way to make it useful even if I'm away from my keyboard.

For a while now, I've been using the voice interface on Chat-GPT's mobile app. Just ask it vocally what you want to know, and it replies by speaking. Imagine something like Siri or Alexa, but a whole lot more like talking to a person: The voice is more realistic, and the responses are

much more sophisticated. My voice-to-voice sessions have opened up new possibilities that I never had when I used

only text or keyboard. I can now

make progress on my work while

I'm walking, commuting or doing

household tasks, because the AI

is there to take notes, answer questions and track my train of thought. I can also make extracurricular jobs like shopping a lot more convenient—and interesting—because the AI is there to feed me information and suggestions. (The forthcoming "Advanced Voice Mode" is even more natural to use, though the current alpha version has some limitations that affect a few of my favorite uses for voice interaction.)

Here are some of the ways voice AI has helped me:

Curing writer's block

When I run into trouble writing an article or newsletter, I'll get up from my desk and go for a walk. Then I have a stream-ofconsciousness conversation with the AI to get the ideas flowing,

the way some writers force

Please turn to page R5

Inside



YOU THINK YOU KNOW CHATGPT

Just how much do you really know about the chatbot? Take our quiz and find out. R2



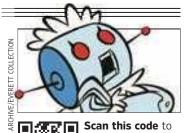
CAN AI MAKE YOU LESS LONELY? Companion apps promise to keep you company. We put

them to the test. R11



THE READERS SPEAK

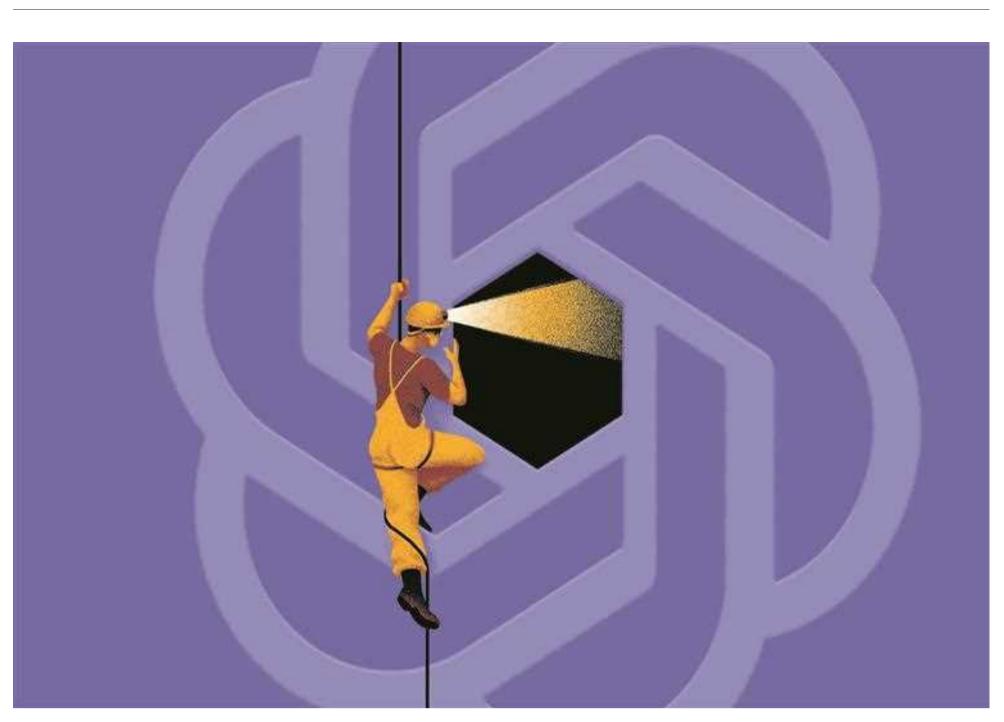
We asked about the use of AI in job recruiting. Readers had a lot to say. R8





hear how robots will soon be doing more of our housework.

JOURNAL REPORT | ARTIFICIAL INTELLIGENCE



SO, YOU THINK YOU KNOW CHATGPT? TAKE OUR QUIZ

AND FIND OUT

BY CHERYL WINOKUR MUNK

How many people actually use ChatGPT? What does GPT stand for? And other questions worth pondering.

SINCE its public debut in 2022, the chatbot ChatGPT from OpenAI has quickly taken center stage in discussions about artificial intelligence and its tools, including large language models. But while use of the chatbot is growing, exactly what it is and what it does remain an enigma to many.

How much do you really know about ChatGPT, its origins and founders, and about other large language models? Take this quiz to find out.

1. What is GPT an abbreviation

- A. Greater Programming Technology
- B. Global Plaintext Tool
- C. Generative Pre-trained Transformer
- **D.** Gateway Processing Toolkit

2. Sam Altman, chief executive and co-founder of OpenAI, is a graduate of what university?

- A. Stanford University
- B. Harvard University
- C. Carnegie Mellon
- **D.** None of the above
- 3. Who is not a member of OpenAl's board?
 - A. Company CEO Sam

Altman

- B. Carnegie Mellon University Prof. Zico Kolter
- C. Former Sony Entertainment President Nicole Seligman
- D. Tesla CEO Elon Musk
- 4. Among U.S. adults, those with what level of education have the highest percentage of ChatGPT users among them?

- A. High-school diploma or
- **B.** Some college experience
- C. Postgraduate or other advanced degree
- **D.** Only a bachelor's degree
- 5. What share of employed Americans say they used ChatGPT on the job as of February 2024?
- **A.** 8%
- **B.** 20%
- **C.** 14% **D.** 43%
- 6. Where did the five voices used by ChatGPT come from?
 - **A.** A drawing was held among family members of the OpenAI management
 - B. The voices are those of Sam Altman's five favorite Disney movie characters.

- **C.** Hundreds of applications from voice and screen professionals were
- D. Computers randomly chose the voices from a year of YouTube clips.

considered.

- 7. ChatGPT said recently it has more than 200 million weekly active users. How does that compare with November 2023?
- A. Double
- B. Triple
- C. Quadruple
- D. Half

8. When did ChatGPT launch its initial model?

- **A.** Feb. 1, 2020
- **B.** July 14, 2022
- **C.** Nov. 30, 2022
- D. None of the above

- 9. What percent of people under age 30 have used ChatGPT?
 - **A.** 43%
 - **B.** 62%
 - **C.** 27%
- **D.** 15%

10. What is a large language

- A. A global effort using AI to create one language the whole world will speak.
- B. A grammar-based computer program that helps people better understand and recognize language patterns.
- C. A type of artificial-intelligence program that can recognize and generate text.
- **D.** A prototype multilingual educational tool in beta testing for enlarging people's vocabularies.

Cheryl Winokur Munk is a writer in New Jersey. She can be reached at reports@wsj.com.

ANSWERS

Generative Pre-trained Transformer refers to a family of large language models that can understand and generate text in natural language.

None of the above. Altman dropped out of Stanford, where he studied computer science, after two years to start Loopt, a location-sharing app. He is widely quoted as saying that playing poker with peers gave him more valuable insight than attending lectures

Elon Musk, while an early investor, isn't a member of OpenAl's board.

4. c.

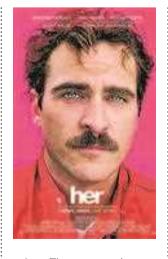
Highly educated adults are most likely to have used ChatGPT, according to Pew Research. Notably, 37% of those with a postgraduate or other advanced degree have used it, compared with 29% of those with a bachelor's degree only, 23% of people with some college experience and 12% of people with a high-school diploma or less.

5. **B.**

The share grew to 20% in February from 8% in March 2023, according to Pew Research.

6. **c.**

OpenAI worked with casting and directing professionals to narrow down more than 400 submissions to five



voices. The company has since paused one of those voices, after actress Scarlett Johansson said it sounded like her own. In the movie "Her," Johansson plays an Al virtual assistant with whom a man falls in love. 7. **A.**

OpenAI said recently that ChatGPT has more than 200 million weekly active users, or twice as many as it had just under a year ago.

8. **c.**

In the short time ChatGPT has been available, AI has become a force in how business operates and consumers behave, with more use cases being introduced and competitors launching their own versions.

9. **A.**

That is up 10 percentage points since summer 2023, according to Pew Research.

ChatGPT is one example of a large language model that recognizes and generates text. It provides users with near-instantaneous online support and information.

servicenow

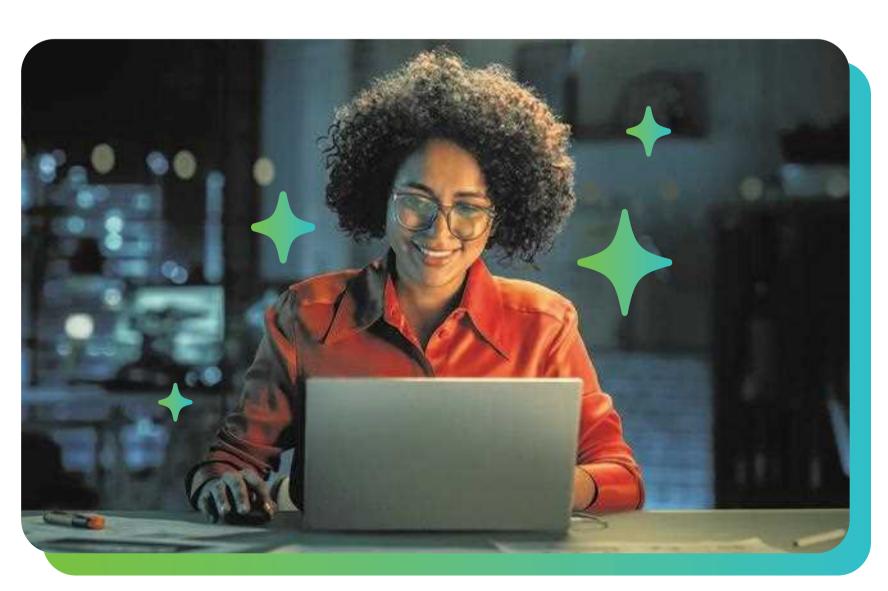
PUT AI AGENTS TO WORK FOR PEOPLE

INTRODUCING SERVICENOW AI AGENTS.

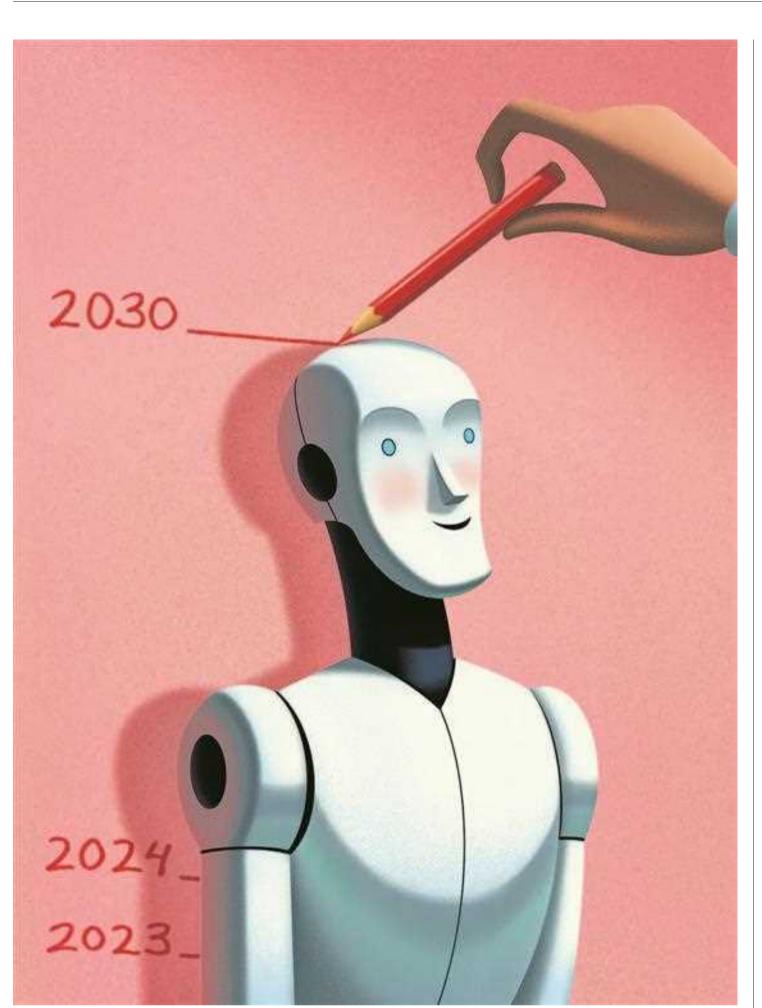
Have you heard? The next big leap in AI has arrived: AI agents. But what are AI agents? How do they operate? And how can they actually benefit your business? Simply put, AI agents can think, learn, solve problems, and make decisions autonomously. They work on behalf of your teams, elevating their productivity and potential. And the best part? You're always in control. Yes, really.

Only the ServiceNow® platform puts the power of AI agents to work across every corner of your business. Imagine a team of ServiceNow AI Agents proactively solving challenges in IT, HR, customer service, software development — you name it. These agents collaborate, learn from each other, and continuously improve, handling the busy work so your teams can focus on what truly matters. They boost productivity for employees, enrich customer experiences, and make work better for everyone. It's time to put ServiceNow AI Agents to work for your people. ServiceNow.com/AI-Agents

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WHAT AI WILL BE DOING FOR US IN THE YEAR 2030

Continued from page R1

human relationships and challenge society with an onslaught of fake media?

The Wall Street Journal asked a selection of experts from academia, business, consulting firms and think tanks to weigh in on what AI will be doing in 2030. Below are some predictions.



A gradual, but profound change

■ Artificial intelligence is advancing rapidly. Some experts suggest we may achieve artificial general intelligence machines that can outperform humans in virtually every task—as soon as 2033. The implications are profound, potentially reshaping industries, economies and the very nature of work.

But there's a crucial disconnect between technological advancement and mass adaptation by organizations and society. As scientist and futurist Roy Amara famously observed, "We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run."

The year 2030 will likely put us right between the short- and long-run implications of AI.

So despite AI's lightning-fast technological progress, we shouldn't expect to see immediate, sweeping global effects in the next few years. The integration of AI into our daily lives, workplaces and institutions will be gradual, as these things change much more slowly than technology does.

As we navigate this dual-speed reality, we must prepare for a future where AI's long-term effects surpass our current imaginations of what it can do-even as its short-term influence may fall short of the most ambitious predictions.

-Ethan Mollick,

Wharton School

professor of management at the University of Pennsylvania's



Al as smart as humans? Not likely.

■ Researchers and entrepreneurs often say that we will reach artificial general intelligence-machines that can do essentially any of the cognitive work that humans can-before the end of the decade, or even within a couple of years.

I seriously doubt it.

To begin with, there is the rampant tendency of the current systems called large language models to hallucinate and make stupid errors; worse, there is no principled solution in sight to solve these problems. Only hope. Hope that more data and more powerful processing chips will magically fix all the issues.

But we are running out of the fresh, valuable data that are needed for LLMs to improve. They already have swallowed up nearly the entire internet. Now they are starting to choke on their own hallucinatory fumes. From 2020 to August 2022 there was rapid progress in the power of LLMs, but already that has slowed. We need genuine innovation, and that takes time.

From a technical standpoint, 2030 may be just like 2023, with better graphics. Behind all that, there is a risk that the AI investment bubble may soon burst, which will leave many people rushing for the exits; it may take years to regroup.

Anticipating artificial general intelligence by 2030 is just not realistic.

-Gary Marcus was a founder and chief executive of a machine-learning company that was sold to Uber and is the author of "Taming Silicon Valley"



Transformation, not job loss

■ Here's what happened in the second half of the 2020s: AI advances fueled the most profound business transformation in history. By 2030, AI systems reached unprecedented levels of capability, reshaping industries and jobs alike. While fears of widespread joblessness persisted, reality unfolded differently—transformation,

not job loss, defined the era. The reason lies in the nature of business evolution. Even groundbreaking technologies—in fact, especially groundbreaking technologies—require time and effort to translate into productivity gains. New skills, processes, and business models must be invented. Fortunately, enough businesses were up to the challenge and as a result, the late 2020s witnessed a surge in productivity.

Yet the transformation was uneven. Over half the Fortune 500 vanished, replaced by a wave of new titans, including an unprecedented number of trillion-dollar enterprises. Occupations evolved similarly—some went the way of the elevator operator, while new ones emerged. The set of occupations and tasks affected were quite different from those of earlier transformations. This time, creative workers, professionals, writers, managers and programmers were among the most affected.

The successful companies all had one thing in common. They didn't simply buy into AI hype. Instead, they methodically applied a task-based approach. This recognizes that tasks-not jobs, products, or skills—are the fundamental units of organizations. AI revolutionized certain tasks like coding and customer service, while others remained relatively unaffected.

As of 2030, humans still retained an edge in handling situations where there was a lack of historical data or structured rules available. Our ability to improvise outperformed machines.

—Erik Brynjolfsson, director of the Stanford Digital Economy Lab and co-founder of Workhelix



■ The biggest difference between AI in 2030 and AI now will be its degree of integration into companies. In the early 2000s, another rapidly evolving generalpurpose technology—the internet—was just being broadly adopted. Organizations that bolted it onto existing structures

saw some benefit, but those that built from the ground up around internet access soon became the world's most valuable companies.

Something similar will likely happen with AI. By 2030, we'll see many organizations-some new, some radically transformed—with AI embedded in their structure. Every employee will access it regularly and seamlessly: to bounce ideas off it, to manage and automate tasks and to get feedback about a company's services or products. Even by 2030, such organizations will be in the minority, but their productivity gains will highlight the value of this approach.

Only when AI stops being seen as a new technology-and becomes just an assumed part of everyday work and life like the internet—will its true potential be realized. The year 2030 will mark the midpoint of that shift.

—Alex Singla, global leader of QuantumBlack, AI by McKinsey



Al personal assistants to handle our lives

▶ By the year 2030, we will each have a Personal Large Action Model, or PLAM. These are advanced AI agents designed to replicate and emulate our unique decision-making processes.

Today, a system like ChatGPT does its best to approximate how individual people speak and write using limited data; in the future, a PLAM will use data collected from the devices we wear (earbuds, continuous glucose monitors) and the devices we use (smart toilets embedded with sensors, digital wallets) to understand our likely behaviors and act on behalf of us.

Our PLAMs, which we will train through repeated use, will learn and adapt to our individual unique behaviors, actions, mood expressions and preferences, and they will invisibly and autonomously handle complex tasks, such as negotiating rates with CLAMs, or Corporate Large Action Models. Here's how that could look: As a business traveler, you have a coming trip from New York City to Munich, and there are no direct flights. Your PLAM would let airline carriers know it wants a deal and allow them to compete for your business.

After brokering an itinerary optimized to what you specifically like (preferred seating configuration, just the right amount of time to make your connection, ability to accumulate points), your PLAM completes all of the tedious steps involved in actually purchasing the ticket: signing in to the airline and authenticating, entering your information, selecting which credit card to use, authenticating for payment, submitting payment details, entering the receipt details in your company's accounting system and posting travel details to your calendar. With enough PLAMs deployed, yours could work to find

you the perfect seatmate, too. -Amy Webb, chief executive, Future Today Institute



Al agents as collaborators at work, too

■ The advent of "AI agents" will be the turning point for artificial intelligence in the next five years. AI agents trained on what is highly relevant to the user, both professionally and personally, will protect us from receiving email, phone calls, texts and instant messages that aren't of much use to us. These agents will handle this automatically-possibly through negotiations with other people's agents—to keep most of this communication at our periphery. They will respond to these messages, organize them and push away those that aren't germane.

Today, after a meeting, Microsoft's AI tool called Copilot will give me a summary based on what was discussed-but future AI agents will know what is really important to me.

Rather than simply automating tasks, AI agents will become true collaborators. It will be the difference between yet another tool to enhance our everyday tasks, and the advent of true technology companions that will transform the way we work, buy, learn and interact.

-Erick Brethenoux, artificial intelligence chief of research, Gartner



'Empathy' bots for sale to kids

■ By 2030, it will be commonplace to use AI emotional companions, not just for romance, therapy and eldercare, but also to provide love and "empathy" for children

Currently there are bots that educate and entertain children, but nothing like the huge upsurge of intimate-relationship bots we see in adults (see related article on page R11).

Yet by 2030, the market opportunity businesses see in loneliness will accelerate the development and dissemination of $\stackrel{\mathbb{Z}}{\hookrightarrow}$

JOURNAL REPORT | ARTIFICIAL INTELLIGENCE

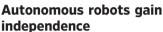
the child version of love or "empathy" bots. For younger kids, there will be physical "buddies," perhaps taking the form of cute Teletubby-like robots with expressive faces. Older kids and teens may wear a smart device that is "always listening" and providing frequent validation.

But there are serious risks to replacing early experiences of mutual human empathy with fake bot "empathy." In real-life relationships, children encounter disagreements and challenges through which they recognize that other people have their own actual feelings and perspectives. This is the engine for developing mutual empathic curiosity, which is crucial for successful adult relationships. In contrast, bots, even if programmed to provide some disagreement or questioning, can only provide one-way simulated "empathy," passively received by the child. The child cannot learn about the authentic inner life of another human.

It isn't just that bot "empathy" is fake and unidirectional. Adults develop strong attachments to their relationship bots, making them vulnerable to dangerous manipulation. With profits depending on capturing the user's attention, tech companies already use irregular rewards, such as social-media likes, to create addiction. Children are more susceptible. Given that childhood is the critical time to develop one's capacities for relationships, stealing attention away from real life is likely to have much more serious consequences.

—Jodi Halpern,

Chancellor's Chair and professor of bioethics, University of California, Berkeley



■ By 2030, AI will greatly enhance the capability of robots to function indepen-

dently in complex environments.

Robots will reach advanced levels of autonomy, making high-level decisions with minimal human input while collaborating and learning from each other. Through cloud communication, new capabilities and data will be easily shared among multiple robots, enabling them to work together on a task.

With enhanced agility, collaboration, adaptability and dexterity, autonomous robots will better navigate difficult environments such as off-road terrain, forests or cities. Robots will also perform tasks in human environments like homes and hospitals, such as cooking, helping the elderly, serving food or cleaning in buildings.

Human-robot interaction will improve, with robots communicating more naturally and understanding human emotions and intentions.

Robots' new abilities will boost productivity, streamline operations and enhance safety, transforming how work is done. For instance, ground and aerial robots that collaborate with each other and with humans will provide aerial delivery and search and rescue after natural disasters. Automation will have a particularly big impact on sectors like manufacturing, logistics, construction, security, healthcare, transportation and space exploration.

The shift will create new human roles in robot oversight, AI system design, and maintenance, but it may also require significant workforce reskilling. Ensuring the safety and reliability of AI-driven robots will be crucial; when an AI system is embodied in a robot, faulty actions could lead to damage in the real world. This highlights the importance of robust safety mechanisms and thorough testing to ensure AI-driven robots operate securely.

—**Prof. Giuseppe Loianno**, director of the Agile Robotics and Perception Lab at New York University



The Al-powered doctor's office

■ By 2030, AI will be deeply integrated into healthcare, transforming how patients and providers interact.

AI tools that quickly analyze lab results and scans will help speed detection and diagnosis of conditions like cancer or heart disease. Systems that combine different types of data, like images, genetic information and medical records, will give doctors a more complete picture of a patient's health, leading to better diagnosis and treatment. Critical conversations about diagnoses and treatment will remain the responsibility of healthcare professionals, but AI will offer support. For example, AI will ensure patient information is customized to their age, education level and health condition.

While human empathy and judgment will still be critical in delivering the best care, AI will help nurses by monitoring patients' vital signs. It will suggest treatment plans based on a patient's medical history and warn doctors about possible problems like worsening symptoms or harmful drug interactions. AI will also handle time-consuming paperwork by automating tasks like coding, billing, and managing electronic health records. All this will reduce stress for doctors and nurses, enable them to spend more time with patients, and lead to quicker, more personalized care.

Even when patients aren't at the doctor's office, wearable devices will be able to monitor more disease indicators and send real-time information to AI systems that alert patients and their doctors about potential health risks. This will shift healthcare toward preventing illnesses, rather than just treating them after they occur.

With AI's use, ethical and legal concerns will become more important, and concerns about safety and fairness will be addressed by clearer rules, monitoring and education.

—Metin N. Gurcan,

director of the Center for Artificial Intelligence Research, Wake Forest University School of Medicine

Societal trust is at risk

■ AI-generated content in 2030 will be far more realistic than it already is, further blurring the boundaries between reality and fiction. The mere existence of such high-quality, AI-generated content will give people, including politicians, cover to question the truth—even if AI wasn't used.

In August, Donald Trump claimed that a photo showing the size of the crowd at a rally for Vice President Kamala Harris was AI-generated, an assertion media outlets said was unfounded based on photos and video of the event.

Without decisive action, we may be operating in a bifurcated reality, where anything can be true or false depending on whether an individual is already primed to believe it. In this dystopian future, truth is subjective, and reality is whatever reinforces one's prior beliefs.

What is certain is that over the next five years, AI-generated media is likely to become only more realistic and more pervasive. Without widespread education about the danger, the shared reality and an informed public on which democracies so depend may be at existential risk.

-Valerie Wirtschafter,

a fellow in the Foreign Policy, Artificial Intelligence and Emerging Technology Initiative at the Brookings Institution

Elizabeth Seay contributed to this article

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THE JOYS OF TALKING TO CHATGPT

Continued from page R1 themselves to free-write for 30 minutes without a pause. If I'm really stuck, I will ask ChatGPT to interview me, telling the AI that it is an editor or journalist asking for my thoughts on the topic. Once all those ideas are out of my head, I ask ChatGPT to take what we've covered and turn it into a draft or outline, which I can access from my web browser and paste into my favorite document editor as a starting point for my work.

Last-minute meeting prep

There is nothing worse than realizing you have a meeting in 15 minutes—with just enough time to either shower, dress, get a cup of coffee or to do some fast background googling about the person you're meeting and the topic you're discussing. Now I don't have to choose: The moment I hop out of the shower, I tell Chat-GPT who I'm meeting with and ask for a briefing on that person, their organization and anything relevant to our meeting topic. Ten minutes later, I'm ready for that video call, with my coffee cup full and the right questions ready.

Doing some sightseeing

Voice-based AI can make trips or errands more fun by acting as a tour guide. For example, I might tell ChatGPT where I am ("I'm standing in front of the Flatiron building in New York"), ask it to suggest a walking tour on a theme ("Can you plan an hourlong walking tour of the Garment District, focusing on its labor history?") and then ask it to narrate that history while I go from point to point.

On-the-go research

At my desk, I often use ChatGPT or other AI platforms to analyze articles for me and find the important points. Now I can have ChatGPT do that while I'm in



transit. I tell the AI what articles to pore over, then it talks me through key insights while I'm running between meetings or appointments. I can chime in occasionally with follow-up questions or new instructions.

Hands-free help

The first time I used ChatGPT's voice interface was to get help hanging curtains. I knew I couldn't do math or look at a screen while standing on a 6-foot ladder, but I needed help figuring out how to space out the hooks so that the curtains would hang nicely and the automatic curtain-opener would run smoothly. ChatGPT talked to me for an hour and a half, detailing the trade-off between curtain fullness and ease of movement,

and praising me for my creative

approach to window coverings. Now I use voice GPT whenever I need help with a task that involves googling, measuring or calculating while my hands are full (like converting a recipe measurement or correcting a mistake in my knitting).

Practicing language skills

In theory I speak four languages, but in practice, I rarely speak anything other than English, because I'm too embarrassed to trot out my rusty French, Spanish or German. But I can practice my language skills on the voice interface—judgment-free—and ask for corrections whenever I make a mistake. ChatGPT speaks over 50 languages, and the moment I switch into speaking French or German, it replies to me in whichever language I last used.

Grocery assistant

ChatGPT also helps with the practical challenge of working your way through a shopping list. Before I go to the store, I put my list into ChatGPT. Then, as I go through the store, I tell it what aisle I'm in and ask it what items I need there. It works pretty well (with a few omissions and oversights), and can even answer questions like, "What's in season in June that I can add to my salad?" But shopping this way can feel like a bit of a spectacle. I can only imagine that my fellow shoppers think I have some poor human on the

that my fellow shoppers think I have some poor human on the other end of my phone.

That is one of the caveats about using voice AI in public: You must pay attention to how other people perceive your voice

interactions (at least until we all

get used to people talking to

their AIs the way we have accepted people conducting phone calls in public).

I know for sure I've startled at least one other person with my AI conversations. A bank teller who overheard me working out loud with ChatGPT on this article was a little baffled...until I showed him how realistically an AI could handle a request like, "You're a bank teller with a customer who doesn't understand why she can't deposit a business check to her personal account. Please explain." He was slightly freaked out by how well it answered the question.

Alexandra Samuel is a technology researcher and co-author of "Remote, Inc.: How to Thrive at Work...Wherever You Are." Email reports@wsj.com.

Special Advertising Feature

INNOVATING FOR IMPACT FNHANCING FYFRYDAY I IFF

From seamless smartphone interactions to upscaled entertainment, artificial intelligence is quietly improving the way we live. No longer confined to science fiction, AI is already embedded in everyday products, helping us connect and manage our homes more efficiently and, ultimately, live better. In 2010, people experienced an average of 298 digital interactions per day. Fueled by the rise of AI, this number is expected to reach 5,000 by 2025.

To meet the growing demand for smarter living, Samsung Electronics has helped enable this transformation, leveraging Al to create intuitive, convenient and elevated experiences. With over 500 million smart Samsung devices sold annually, the company is strongly positioned to bring AI to more consumers. This integration marks the beginning of a new era in which AI is set to enrich everything from personal productivity to immersive entertainment.



Al Upscaling technology adds depth, sharpness and 8K-level resolution to visual content

EASE OF USE: A New Era of Mobile AI

Consumers are increasingly seeking intuitive technology that integrates smoothly into their lives. Over half of consumers—51%, according to a PwC study—prioritize convenience when making purchases, highlighting the demand for products that simplify tasks and adapt to user preferences.

Samsung's product ecosystem is designed to meet these needs by integrating AI services that improve ease of use. At the heart of this catalog is Galaxy AI, which mobilizes a network of devices employing cutting-edge intelligence to empower creativity, productivity and communication. A good example is the ProVisual Engine, which uses Al to enhance camera functions from capturing to editing. It simplifies everyday tasks with Aldriven solutions for note-taking, email writing and information searching. In addition, Galaxy AI can transcend language barriers, offering interpretive and live translation features that foster crosscultural connections. Mobile devices equipped with Galaxy AI can facilitate communication in 16 languages, even without an internet connection.

Samsung takes a hybrid approach, combining ondevice and cloud-based processing to streamline data privacy and efficient user interactions. Through the defense-grade platform Samsung Knox, Galaxy tools are protected by end-to-end hardware, real-time threat detection and full encryption. By establishing new security standards in mobile experiences, Knox aims to give users confidence to explore new Al-driven features.



Through the SmartThings app, users can start, stop or receive status updates on their laundry cycles directly

CONVENIENCE: Fewer Chores, More Life

For many, maintaining a clean home can feel like a constant battle. Research has shown that nearly nine out of 10 Americans feel their best—both mentally and physically—when their homes are clean, dedicating a weekly average of six hours to the task. Nonetheless, a third still wonder if they are cleaning as much and as well as they should. By emphasizing convenience and reducing the load of mundane tasks, technology can play a key role in helping consumers strike a balance between productivity and well-being.

Samsung's commitment to innovation in appliances began 50 years ago, with the launch of its first refrigerator and washing machine. Sustaining this pioneering spirit, its current Bespoke AI appliances introduce new functions that are helping to redefine convenience and comfort in modern homes.

For instance, the Bespoke Al Laundry Combo™'s Al Opti Wash & Dry™ cycle intelligently adjusts its performance¹ according to the load's weight, dirt levels and fabric² types; Al Home³ personalizes the process by suggesting cycles to suit users' habits and periodic needs.⁴ For easier home upkeep, the Bespoke Jet Bot Combo™ Al—a vacuum and mop robot cleaner—efficiently navigates surfaces and utilizes AI Object Recognition⁵ to provide targeted cleaning on stained areas⁶ without user intervention. Samsung's AI Family Hub™+, integrated within the Bespoke 4-Door Flex Refrigerator, does more than just monitor food items inside the fridge, leveraging AI Vision Inside to recognize and generate a food list⁷ of available ingredients.

These smart home appliances work together to address individual needs and streamline daily tasks, underscoring Samsung's dedication to making daily life more convenient.



conversations through a user-friendly split-screen vi allowing people standing opposite each other to read text translations of what the other is saying

ENTERTAINMENT: Upscaling Viewing and Experience

Consumers are increasingly passionate about content and favor exceptional viewing experiences. According to Samsung's annual TV Awareness Study, 92% of consumers in Southeast Asia and Oceania prioritize picture and sound quality in their purchasing decisions, ranking far ahead of price, at 42%.

As the world's largest maker of TVs for the past 18 years, Samsung has designed its premium yet durable products with this in mind, offering advanced technology to elevate the viewing experience for cinephiles, gamers and sports fans alike. Features like 8K AI Upscaling and the Al Motion Enhancer Pro elevate visual detail and clarity, ensuring each frame is optimized for maximum impact. Equipped with eight times more neural networks than its predecessor, the NQ8 AI Gen3 Processor executes on-device Al processing at double the speed of its predecessor, delivering sharper images from lower-resolution content. This not only optimizes viewing for large screens, but also adeptly tracks fast-moving subjects during sports broadcasts.

"We believe AI should empower people in their daily lives, that technology should adapt to you, not the other way around. And because life-enhancing innovations should be open to all, we have been putting Galaxy AI into the hands of more people around the world."

President and Head of Mobile eXperience Business, Samsung Electronics

Built to be inclusive, these technologies cater to diverse viewing needs and may benefit consumers with visual sensitivities. In addition, Adaptive Picture and Adaptive Sound Pro intuitively adjust to environmental conditions such as ambient lighting and background noise, providing viewers with a tailor-made experience.

As AI applications continue to evolve, they promise a future in which technology not only entertains, but helps enrich lifestyles worldwide. Brands that quickly adapt to innovation can become significant market drivers," says Jan Lorbach, consumer electronics market expert at the market research company GfK. "We observed this in the transition from mobile phones to smartphones, where slow adopters were challenged and risked fading out." Transformative solutions like these are contributing to a more inclusive and connected world.

Detection and sensing capabilities are based on Samsung's deep learning models trained using a predefined set of data and may yield inaccurate or incorrect results. New datasets may be introduced to learning models from time to time to enhance their accuracy.

2 To prevent wear, wash like fabrics together. Based on Al-based algorithm.

3 Does not mean all services available on the Al Home are Al or generate information or outcome using Al. The services/features that use deep learning models are limited to Al Smart Dial, Al Opti Wash & Dry* and Voice, enabled with Bixby. The learning models may be updated from time to time and may generate incomplete or incorrect information.

4 Messages with cycle suggestions are displayed on the control panel or a smartphone with the SmartPhinga spa.

5 Based on Samsung's deep learning model trained using a predefined set of data and may yield incomplete or incorrect information. New datasets may be introduced to the learning model from time to time to enhance its accuracy.

6 A stained area is defined as a solid, colored and opaque spot, such as a dried juice, with a size of 4cm x 4cm or larger. Stained area identification may be affected by the size of the stain or the environmental conditions of the floor, such as the floor pattern. Stained Area Recognition needs to be activated beforehand via the SmartThings App. A Wi-Fi connection and Samsung account are required. 7 Users may need to manually operate the list for accuracy. As of April 2024, Al Vision Inside can recognize 35 food items like fresh fruits and vegetables. If the food is not recognizable, it may be listed as an unknown item. Al Vision inside cannot identify or list any food items in the fridge door bins or freezer. It recognizes food items based on deep learning models, which may be updated periodically to improve accuracy.

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Galaxy Z Fold6

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JOURNAL REPORT | ARTIFICIAL INTELLIGENCE

BY DEMETRIA GALLEGOS

F YOU'RE HUNTING for a job—or looking for the right person to hire-you know how difficult the process can be. Already, more job seekers are robo-filing hun-

dreds of applications online, flooding recruiters with responses that make it hard to responsibly screen all candidates. Machines are now in the middle of the process, and artificial intelligence, while imperfect, is increasingly running the show, putting some trade-offs into sharper focus.

We wanted to know what WSJ readers think about this from an ethics standpoint. So we asked:

Research shows that some AIdriven tasks, such as evaluating job candidates, are more prone to discrimination. But using AI also allows more applicants to be considered, since there are only so many applications that HR can read. Is that trade-off acceptable?

Here's some of what we heard.

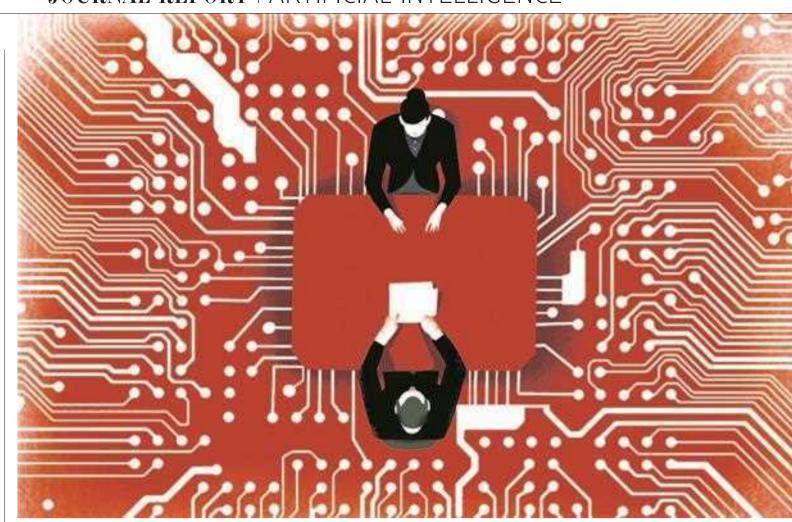
Al doesn't have a bad day

In my experience humans are naturally biased/prone to discrimination as well. Unlike humans, though, AI will never have a bad day, see the applicant as a potential competitor, consider appearance, or care what state they live in. Bias comes in many forms and many of those forms will be reduced or eliminated using a robot.

-Robert Garrison, Dallas

It depends on the job

My answer is what I call a "penz on"—it (de)pends on, in this case, what the job is. AI might be OK for screening applicants for entry-level repetitive tasks. But in "Good to Great," Jim Collins said the best companies first "get the right people on the bus." Can AI determine whether



WILL AI MAKE JOB RECRUITING MORE EFFICIENT—BUT LESS FAIR?

We asked readers what they think about companies that are relying on AI to screen candidates

a job applicant's personality will mesh with his co-workers? Can AI "hear" inflection in someone's writing? Can AI tell if an applicant used AI to complete his application or résumé? AI is not really intelligent at all. It doesn't really think. It's a bunch of 1s and 0s that a programmer put together in a big, fast calculator.

-Nate Sachritz, Portage, Mich.

A supporting player

Sadly, you are right about AI's being prone to discrimination, as much of AI is based on prevailing business practices. But this can be managed almost immediately—by adjusting the data set

and removing data elements such as gender that can contribute to biases. Human HR specialists can also implement business practices to reduce discrimination.

The increasing use of AI is inevitable because of the attractiveness of doing much more with fewer resources. But the real caution flag with AI is when AI becomes the primary decision maker in recruiting, versus just providing decision support such as recommendations, analysis or initial screenings.

—Te Wu, Glen Ridge, N.J.

A partnership

I always thought interviews should be blind. Candidates should fill out applications on site. Connected AI could quickly verify the accuracy of the information, and sort through any publicly accessible sources to determine candidates' viability. AI could choose the best candidates for an interview. It must be a partnership with floating oversight.

-Phyllis Baltagi, Syracuse, N.Y.

Improve the tool

Discrimination has no place in the workplace, including in the evaluation of job candidates. There are opportunities to address model biases and transform AI into a tool that increases fairness in hiring. These include building larger and more varied data sets for model training, allowing hiring managers to tailor training toward a variety of candidate success outcomes, and using AI to evaluate work portfolios rather than candidate characteristics. AI is already used in the hiring process—let's focus on making it a valuable tool for everyone.

> -Tim Marlowe, Whitefish, Mont.

A dehumanizing trend

This is really a delicate subject. Maybe I'm old-fashioned but I still cherish the days of face-toface interviews. It has gotten harder for an applicant to get beyond the digital/app/online process which is prevalent today.

Cutting the cost of HR is just another way for a company to increase profit and give the CEO a bonus at year's end. AI should not be allowed to further diminish the value of the human being by making him or her a cipher on a computer screen.

-Gerry Mandel, St. Louis

Humans are only human

Recruiters are overwhelmed, and their capability to sift through thousands of applicants to find the perfect match leaves a lot to be desired. I think AI-screening

for job recruiting should be accepted as the norm, trade-offs notwithstanding.

—Nauman Sheikh, Marriottsville, Md.

Al, explain yourself

AI should provide a detailed explanation of how it arrived at its conclusion or recommendation.

This should then allow the human to gauge any potential discrimination.

-Michael E. Dziubinski,

Hood River, Ore.

Free to win or lose

Employers should have the freedom to run their businesses as they wish. If employers want to rely on a machine to pick the brightest and the best, so be it. They'll be the losers in the long run. Human connection will win the day. But that's their choice to make.

> -Brad Grizenko, Wake Forest, N.C.

Al is us at our worst

No, there are so many ways job applicants may be discriminated against already. I cannot imagine a system that generates ideas from previously written information that wouldn't contain nearly ALL the potential discrimination actions conjured up in the past.

At least with humans, there are only SOME biases to each person and then someone else can review and catch the bias. I'm afraid with AI doing so much work so fast, bias would be virtually unstoppable.

> -Robin Hurley, Highlands Ranch, Colo.

Only sometimes

For STEM jobs, yes. For other jobs involving more people interaction, no.

-Deena Semeniuk, Phoenix

Al's biases

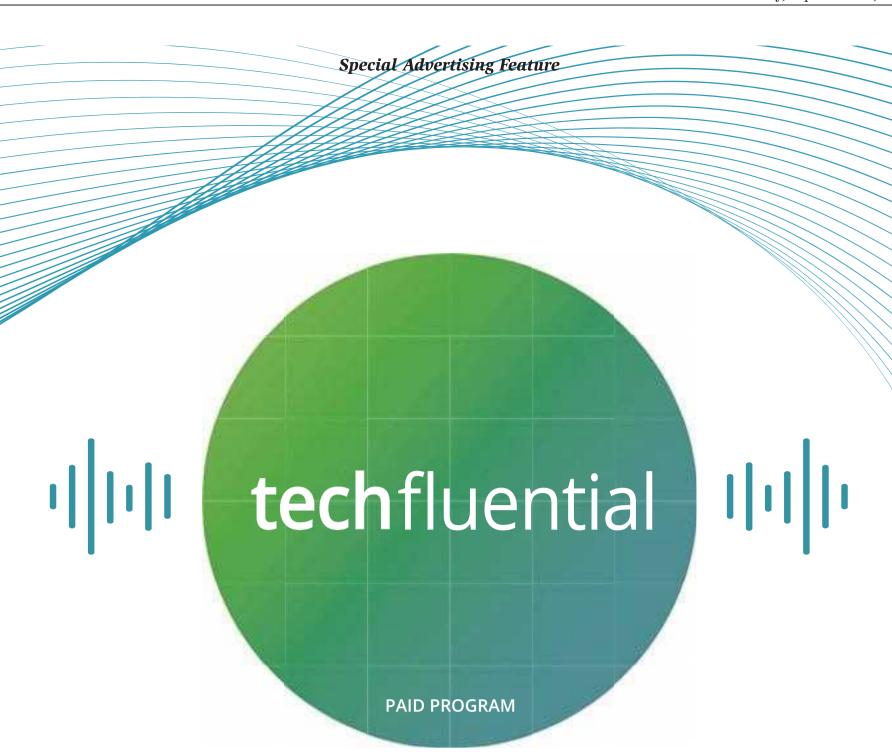
No, I am 63 years old and am among those who've become invisible to the job market thanks to AI. Despite my qualifications, experience and 400 applications a month, AI could detect I am older than 45, so much of my effort was wasted until I landed my current job.

AI is biased and inaccurate in many areas, from age to race to eating disorders. It's important to call out those who use AI to further promote discrimination, even if you could stop it with half an hour of software development.

-Michael Esser, Los Angeles

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AI WANTS TO MAKE YOU LESS LONELY. DOES IT WORK?

Companion apps promise to keep you company. We decided to put them to the test.

BY JULIAN DE FREITAS

AN AI MAKE us less lonely?

A new generation of artificial-intelligence apps called AI companions is designed to simulate natural conversations and keep people company. AI assistants like ChatGPT can do those things to some extent, but AI companions are designed to respond in a sympathetic, realistic way when you share your

thoughts or problems. They can even role-play, pretending to be your partner, for instance, to practice tough conversations.

Most of these programs are still at a relatively early stage, and are just building an audience. So we don't know yet whether they'll be a good substitute for people looking for meaningful connection, or instead isolate them from real-world relationships.

But for now, we can test a simple question: Do these AI companions really work? Do they really provide the emotional support that people need, and make them feel less lonely?

My studies with my colleagues show that the best of these apps really *do* work—and work well. People who turn to them to beat loneliness, in large part, get the results that they want.

Loneliness afflicts one-third of adults globally and is increasing. It is known to cause mentalhealth problems like depression and anxiety, as well as physical problems, such as an increased risk of dying for cancer patients.

My fellow researchers—Ahmet K. Uguralp and Zeliha O. Uguralp at Bilkent University and Stefano Puntoni at the Wharton School—and I investigated AI compan-

ions' impact on loneliness in a number of ways.

We started by analyzing 50,000 app reviews of five popular AI companions, looking for how often the reviews mentioned loneliness, and how the number of mentions affected their ratings. The more mentions, the more people might use the apps to help with loneliness. The higher the rating, the more effective the app. We also looked at reviews for ChatGPT, to get an idea of how companions stacked up against a general AI assistant.

Only 4% of ChatGPT reviews mentioned loneliness. But the companion apps turned in a much better showing, going as high as 20% for one app. And, among AI companion apps, the more the app's reviews mentioned loneliness, the more stars it received and the more positive its reviews were. The implication is clear: The more people used the companion apps specifically to reduce loneliness, the more they got out of them.

We then recruited about 1,100 online participants and asked them to rate their loneliness on a scale of one to 100 each day of the week, and measured how much it changed day to day. One group interacted daily with an AI companion we created for the experiment; the others didn't.

Those who used the companions reported a significant decrease in loneliness, showing an average reduction of 16 percentage points over the course of the week. Participants who interacted with the AI companion also experienced 14 percentage points less loneliness on average from day to day, compared with those who had no interaction.

In a follow-up study involving about 600 online participants, we assigned participants, during one day, to interact with either an AI companion or a real person; to browse YouTube videos online (a popular way that people in another study said they used technology to cope with loneliness); or to do nothing.

They performed those actions or did nothing—for 15 minutes, with participants rating their loneliness levels both before and afterward.

Only those who interacted with a human or the AI companion—not those who did nothing or interacted with YouTube—experienced a reduction in loneliness levels. Their results were roughly the same: Contact with people brought a 19-percentage-point drop in loneliness levels, and 20 percentage points for a companion.

Why do AI companions make us feel less lonely? To answer that question, we conducted a study involving about 1,500 online participants. We assigned people to interact with either an AI companion or an AI assistant, which was programmed to assist with various topics without offering emotional responses.

We found that the more people felt heard—as measured by asking them how much they agreed with statements like "The chatbot was empathetic"—the greater the reduction in loneliness they experienced. Similarly, those who interacted with the AI companion experienced a significantly greater average reduction in loneliness levels (24 percentage points) than those who interacted with the AI assistant (6 percentage points).

There is still the question of whether AI companions will be good for society. Some people fear, reasonably, that companions will turn people into shutins who avoid human contact. But any debates about the long-term impact of companions should account for their potential for reducing loneliness. Because we aren't doing well as a society on loneliness, we should at least keep an open mind on any tool that helps at all.

Julian De Freitas is an assistant professor of business administration at Harvard Business School. He can be reached at reports@wsj.com.

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Keep Breaking Through



Aramco is an energy and chemicals company with oil and gas production as its primary business. The solutions mentioned here are in the first stages of commercial deployment.