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THURSDAY, OCTOBER 13, 2022 ~ VOL. CCLXXX NO. 88

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**★★★★** \$5.00

**DJIA** 29210.85 ▼ 28.34 0.1%

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**STOXX 600** 385.88 ▼ 0.5%

**10-YR. TREAS.** ▲ 9/32, yield 3.901%

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Business ヴ Finance

TikTok parent ByteDance has begun talks with music labels about expanding its music-streaming service globally to compete with industry leaders including Spotify, people familiar with the discussions said. A1

◆ U.S. chip-equipment suppliers are pulling out staff based at China's leading memory-chip maker and pausing business activities there as they grapple with the impact of Commerce Department semiconductor export curbs. A1

♦ Fed officials expressed concern at their meeting last month over the persistence of high inflation, underscoring their intention to continue raising interest rates in large steps, minutes show. A2

♦ U.S. stocks ended lower. with the S&P 500 losing 0.3% and the Dow and Nasdaq both slipping 0.1%. B10

♦ Many U.K. pension funds are rushing to raise cash to satisfy collateral calls triggered by rapid moves in government bonds, as the BOE plans to end its emergency bond buying on Friday. B1, B9

◆ PepsiCo said its organic sales rose 16% in the latest quarter, boosted by price increases for the company's snacks and drinks. B1

♦ An activist investor that has long targeted Kohl's is calling on the company to make changes to its board or face another proxy fight. **B1** 

◆ Lawyers for an ex-Theranos lab director who testified against Holmes asked a judge to reject a subpoena from the Theranos founder as she seeks a new trial. B1

World-Wide

◆ Ukraine's emerging strategy in the war with Russia is combining classic military operations with opportunism on the battlefield to exploit the incompetence of

Russian forces, changing the course of the conflict. A1, A11 ♦ The Biden administration released its national-security strategy, saying the U.S. is entering a "decisive decade" as it confronts its competition with China and a

Russia attempting to upend

the international order. A8 **♦** The U.S. government reached a settlement deal with victims of a pedophile doctor who sexually assaulted Native American boys at federal hospitals in Montana and South Dakota, people familiar with the matter said. A1

◆ A Connecticut jury ordered conspiracy theorist Alex Jones to pay \$965 million in damages for repeatedly claiming on his Infowars platform that the Sandy Hook massacre was a hoax. A3

◆ Venezuelan migrants who cross the U.S.'s southern border illegally to seek asylum will be expelled back to Mexico using a pandemic-era policy known as Title 42. A2

♦ U.S. health regulators expanded eligibility for the new Covid-19 booster shots to children as young as 5 years, broadening access to help bolster protection against Omicron strains. A7

◆ Los Angeles City Councilwoman Nury Martinez resigned Wednesday following outrage over racist remarks she made on a leaked audio recording. A7

Opinion...... A17-19 Personal Journal A13-14 CONTENTS Arts in Review... A15 Business News.. B3,5 Sports... Crossword..... A16 Technology...... . B6 U.S. News.. Heard on Street.. B11 ... B10 World News.... A8-12



**GOLD** \$1,670.30 ▼ \$8.40

**EURO** \$0.9703

## **Strike by Refinery Workers in France Deepens Energy Woes**



an Exxon Mobil site in northwestern France early Wednesday. The strike has choked fuel supplies across the country. A12

## Facing Curbs, U.S. Suppliers Leave Chinese Chip Maker

BEIJING—U.S. chip-equip- suppliers including KLA Corp. ment suppliers are pulling out staff based at China's leading memory-chip maker and pausing business activities there,

> By Yoko Kubota, Raffaele Huang and Asa Fitch

according to people familiar with the matter, as they grapple with the impact of Commerce Department semiconductor-export restrictions.

State-owned Yangtze Memory Technologies Co. is facing a freeze in support from key

and Lam Research Corp., the people said. The suspensions follow last week's sweeping curbs imposed by the U.S. on China's chip sector, ostensibly to prevent American technology from advancing China's military power, though the impact might reach further into the industry.

The U.S. suppliers have paused support of already installed equipment at YMTC in recent days and temporarily halted installation of new tools, the people said. The suppliers are also temporarily

pulling out their staff based at that operate in China and are YMTC, the people said.

Chip-making equipment vendor Applied Materials Inc. on Wednesday slashed its sales projection for the current quarter by about \$400 million, citing the restrictions. The company, one of the largest producers of chip equipment in the world, counts China's leading chip makers among its many customers. It generated more than 27% of its sales from China in the second quarter, or nearly \$1.8 billion. A large portion of those sales go to multinational firms

expected to be exempt from controls targeting Chinese chip-makers. Applied said it was pursu-

ing export licenses and authorizations, but it added that it expected a similar impact to sales in the first quarter of next year. U.S. chip-equipment manu-

ployees stationed at YMTC's factory. They play a crucial Please turn to page A9

facturers have dozens of em-

♦ South Korean company gets chip-restriction exemption... A9

## **TikTok** Parent Looks to Challenge **Spotify**

ByteDance is talking to music labels, with an eye on beefing up its streaming services

TikTok parent ByteDance Ltd. has begun talks with music labels about expanding its music-streaming service globally to compete with industry leaders including Spotify Technology SA, people familiar with the discussions said.

> Bv Jessica Toonkel. Anne Steele and Salvador Rodriguez

Significant hurdles remain in the negotiations, the people said, but ByteDance wants the service to eventually be integrated within TikTok and to serve as a major platform for distributing music around the world.

China-based ByteDance has discussed in recent months launching its Resso musicstreaming service, which is currently only available in India, Indonesia and Brazil, in more than a dozen additional markets, some of the people said. The U.S. wouldn't be part of this next phase of expansion, but ByteDance has said it wants the service to be available globally so users can discover songs on the short-form video app and then easily subscribe to music, they said.

ByteDance is negotiating with a music business that has been on a rapid upswing for several years, thanks to streaming growth as well as the establishment of standard rates for music licensing.

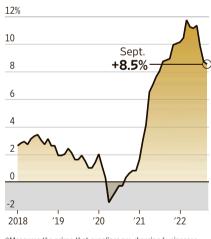
The talks have been strained at times over disagreements about how to Please turn to page A4

### Producer **Prices** Feel

**Pressure** 

The producer-price index in September rose after dropping in the prior two months, with food and home-heating costs driving the gains in what suppliers charge customers. An 8.5% annual rise last month was down from August's 8.7% increase. A2

Producer-price index,\* change from



\*Measures the prices that suppliers are charging businesses and other customers Source: Labor Department

## Ukrainian Strategy Is Running Circles Around Russian Forces

Nimble battlefield decision-making exploits Russia's military failings

Eight months into Ukraine's war with Russia, its emerging strategy is combining classic military operations with opportunism on the battlefield to exploit the incompetence

> By Stephen Fidler, James Marson and Thomas Grove

of Russian forces—and is changing the course of the battle.

Ukraine's command structure encourages junior officers to make in-the-moment battlefield decisions, an authority that they have used to seize opportunities and quickly take advantage of enemy weaknesses.

Russians, by contrast, have been slowed by a Soviet-era decision-making structure, in which orders trickle down the chain of command from Moscow, and troops at the front lines take little initiative.

In weeks, Ukraine has cleared Russian forces from thousands of square miles in the Kharkiv region of the country's northeast. Its forces are now advancing south toward the occupied city of Kherson, a regional capital. Please turn to page A10

◆ West to boost Kyiv's air defenses...

## Retirees to Arizona State: Shhh

Seniors living on campus want less loud music

By James Fanelli

TEMPE, Ariz.—Arizona State University officials have bragged about hosting "the world's coolest dorm."

That is debatable. But there's little argument ASU has the most expensive. Housing at Mirabella requires onetime fees that go from \$440,000 to more than \$1 million. Residents pay another \$4,000 to \$8,000 a month, which includes classes and

Mirabella also is restricted to seniors. Residents must be 62 or older. It is one of the country's few senior-living facilities set on a college cam-Please turn to page A12

## **Tribal Victims Settle** Hospital Abuse Suits

By Christopher Weaver AND DAN FROSCH

U.S. government reached a deal with victims of a pedophile doctor who sexually assaulted Native American boys for decades at federal hospitals in Montana and South Dakota, people familiar with the matter said.

Under the terms of the deal, the government would pay between \$1.5 million and \$2 million to each of eight victims to settle claims that federal officials ignored or tolerated the abuse, some of the people said. In total, the government would pay the victims about \$14.5 million, one of the people said.

The IHS's mishandling of the doctor's abuse was the subject of Wall Street Journal reporting and was highlighted in a documentary made by the Journal and the PBS series Frontline in 2019.

Lawyers for the victims and

the Justice Department officials reached the deal following a meeting with mediators in Rapid City, S.D., in late September. The agreement isn't yet finalized, some of the people said. Because of the amounts involved, the deal must be approved by a senior Justice Department official, according to the agency's Lawyers for the victims and

Justice Department officials declined to comment.

The abusive doctor, Stanley Patrick Weber, arrived in 1986 at the U.S. Indian Health Service, a federal agency that provides health services to Native Americans primarily in the West, government records show. His supervisors at the Browning, Mont., IHS hospital suspected him of misconduct as early as the mid-1990s. Instead of firing him, the IHS transferred him to a hospital in Pine Ridge, S.D., where he Please turn to page A6 **Q** Palantir

## The industry leader in artificial intelligence software.

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Source: IDC, Worldwide Artificial Intelligence Platforms Software Market Shares 2021: Al Is Being Used In More Unique Ways Than Ever (2022)

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The information presented in the table above has been compiled and analyzed by IDC using their methodology described in the Worldwide Artificial Intelligence Platforms Software Market Shares, 2021: AI Is Being Used in More Unique Ways Than Ever (2022) report contained on IDC's website (www.idc.com). We have not independently verified, and make no representations as to, the accuracy or completeness of the data contained in this report

P2JW286000-4-A00200-1-----XA

## Persistent High Inflation Worried Fed

By NICK TIMIRAOS

WASHINGTON-Federal Reserve officials expressed concern at their meeting last month over the persistence of high inflation, underscoring their intention to continue raising interest rates in large steps despite the pain that could cause.

makers revised Policy higher their expectations for rate increases, though some signaled caution about overdoing them amid risks of economic and financial volatility, according to minutes of the Sept. 20-21 gathering released Wednesday.

"Many participants emphasized that the cost of taking too little action to bring down inflation likely outweighed the cost of taking too much action," the minutes said.

The minutes suggest the Fed is likely to raise rates by 0.75 percentage point at their meeting on Nov. 1-2, said Ellen Zentner, chief U.S. economist at Morgan Stanley, in a report Wednesday. "The minutes reaffirmed a clear commitment to remain on an aggressive path of policy tightening, and maintain that higher level for longer, even as over-tightening risks are coming into view," she said.

The Fed has lifted its benchmark federal-funds rate five times this year to a range between 3% and 3.25% from near zero, the most rapid pace of rate increases since the early 1980s to fight inflation running near 40-year highs. Officials approved rate increases of 0.75-percentage point at each of their past three meetings.

They expect higher borrowing costs to slow economic activity by curbing spending, hiring and investment, which should weaken inflation pres-

Nearly all the policy makers participated in last who month's gathering penciled in large interest-rate rises at each of their coming two meetings this year. The projections also suggested they would dial down the size of their rate increases by December and potentially end them by February or March.

to be singularly focused on inflation and take a position of 'come what may,'" said Tom Graff, head of investments at Facet Wealth, a Baltimore, Md.-based investment adviser. "But it shows the bar for slowing down hikes and maybe eventually pausing is not super high."

### The central bank has lifted its benchmark federal-funds rate five times this year.

Fed governor Christopher Waller said last week he expected new economic dataincluding a widely watched inflation report to be released Thursday—wouldn't significantly alter his outlook or that of his colleagues ahead of their next meeting, because inflation is running so far above their 2% target.

But he hinted officials would

rises while approving their fourth consecutive 0.75-point rate increase at that meeting. 'We will have a very thoughtful discussion about the pace of tightening," he said.

In a speech Monday, Fed Vice Chairwoman Lael Brainard cautioned against raising rates too rapidly to allow officials time to study how higher borrowing costs are coursing through the economy.

While her remarks didn't directly push back against rate increases that are already anticipated by investors, they represented the most comprehensive effort by a senior Fed official this year to build the case against an even steeper path for further rate rises.

Global market turmoil accelerated in the days following last month's Fed meeting. Sharp dislocations in U.K. government-debt markets last month prompted the Bank of England to purchase large amounts of longer-dated securities to stem broad fire sales.

The market strains have highlighted the potential for

"For the moment, they have debate slowing the pace of rate unexpectedly rapid increases in global interest rates this year to upend investment strategies and amplify strains as bond and other asset prices fall.

Most Fed officials have said they are monitoring market volatility, but haven't suggested the strains have materially changed their economic outlook.

Until recently, officials had hoped that they might be able to raise interest rates less aggressively and cool the labor market without triggering a big increase in unemployment. In May, Mr. Waller argued the Fed could achieve this socalled soft landing by reducing the demand for workers-causing a decline in job vacancies, which are historically elevated-without fueling significant layoffs.

The persistence of inflation in recent months, however, has left officials less optimistic. "The longer inflation has stayed up, and the more aggressive we had to be" and the narrower the landing strip has grown for a soft landing, said

## Supplier Prices Climbed in September

By Gabriel T. Rubin

U.S. suppliers raised their prices in September after cutting them the prior two months, possibly indicating some inflation pressures are picking up again.

The producer-price index, which measures the prices that suppliers are charging businesses and other customers, rose a seasonally adjusted 0.4% last month compared with a revised 0.2% decrease in August, the Labor Department said Wednesday. Higher food prices and home-heating costs drove the increase.

"Price pressures remain elevated and volatile, particularly for food and gas, given the ongoing war in Ukraine and ongoing supply-chain disruptions," said Matthew Martin, U.S. economist at Oxford Economics.

The PPI rose 8.5% in September from a year before, down from its 8.7% annual increase in August and 11.3% in June.

The so-called core PPIwhich excludes the often volatile categories of food, energy and supplier margins-also climbed by 0.4% from a month earlier, an acceleration from the 0.2% rise in August. Core PPI increased 5.6% in September compared with a year ago, matching the August annual increase.

The PPI can reflect price trends that eventually affect consumer-level inflation, since businesses eventually pass on their costs, or savings, to consumers. An easing of producerprice increases could point to an eventual ebbing of consumer-price inflation, which is close to a four-decade high.

Along with being a helpful tool for forecasting inflation, producer-price indexes are often used as the basis for automatic adjustments in supplier contracts. The Bureau of Labor Statistics estimates that trillions of dollars in long-term contracts are pegged to ver-

serve are watching for signs that inflation is easing. U.S. consumer prices rose more slowly in August from a year earlier. But core prices, which exclude energy and food, increased sharply from the prior month.

## sions of the PPI. Investors and the Federal Re-

## Venezuelans In Illegal Crossings to Be Expelled

By MICHELLE HACKMAN

WASHINGTON-Venezuelan migrants who cross the U.S.'s southern border illegally to seek asylum will be expelled back to Mexico using a pandemic-era policy known as Title 42, under a new migration agreement announced jointly by the U.S. and Mexico Wednesday.

At the same time, the Biden administration also is creating a new immigration program to allow up to 24,000 Venezuelans to move to the U.S. legally, to deter them from attempting to cross into the U.S. illegally, the announcement said.

Under that new program, known as "Volunteering for Venezuela," Venezuelans across the Western Hemisphere can apply online to come to the U.S. provided they have an American financial sponsor and pass security checks. The actions are meant to

slow the growing movement of Venezuelan migrants crossing into the U.S., where they are allowed to stay and pursue asylum claims. The U.S. doesn't maintain relations with the Venezuelan government and, until Wednesday, Mexico refused to accept them back under its migration agreement with the U.S.

More than 150,000 Venezuelans have crossed the U.S. border illegally in the first 11 months of the government's fiscal year, which ended Sept. 30, compared with about 48,000 the entire year before.

The mass displacement of 6.8 million Venezuelans from their home country is driven by a cratering economy that has made food and medicine prohibitively expensive.

## DHS to Increase Visas for Seasonal Workers By MICHELLE HACKMAN

WASHINGTON—The Department of Homeland Security for the first time intends to issue the maximum number of H-2B seasonal-worker visas allowed by law this year, a total of more than 130,000, the agency announced on Wednesday.

Each year, 66,000 visas are set aside, split evenly between the winter and summer seasons, for seasonal employers such as landscapers, ski resorts, fisheries and vacationtown vendors. On top of that, the secretary of Homeland Security has the authority to issue up to nearly 65,000 additional H-2B visas for the year, though to date no secretary has done so, despite demand.

The U.S. will set aside 20,000 of the additional visas for workers from Haiti and the Northern Triangle countries of Guatemala, Honduras and El Salvador, and the rest will be available to returning workers, who previously worked in the U.S. on the same visa.

Last year, the Biden administration made 55,000 additional visas available on top of the 66,000 already allotted. the largest H-2B visa release since Congress changed the rules in 2017.

The move comes amid labor shortages, particularly in lowwage sectors such as restaurants and hospitality, and demand from employers for the Biden administration to take any steps possible to holster the economy. Employers have complained in past years that,



A worker from Mexico at a Maryland crab house in 2020. The U.S. will release more than 130,000 seasonal-worker visas this year.

though both Trump and Biden administrations released additional visas, they were slow to actually issue them—a complaint the administration is hoping to pre-empt by releasing all available visas at the beginning of the government's

fiscal year, which started Oct. 1. "At a time of record job growth, this full-year allocation at the very outset of the fiscal year will ensure that businesses can plan for their neak season labor needs." Homeland Security Secretary Alejandro Mayorkas said.

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The decision reflects a budding strategy by the administration to create more legal pathways for immigrants who might otherwise attempt to enter the U.S. illegally for work or safety. In June, the U.S. and more than a dozen other Latin American countries signed a migration pact at the Summit of the Americas in Los Angeles, which called on countries across the region to create new visas and temporarv humanitarian protections for migrants moving throughout the Western Hemisphere.

In addition to the visas, the program comes with requireadministration is in the coming ments on how much employwould allow them to migrate legally to the U.S. and receive work authorization, rather than crossing the border illegally.

In order for employers to hire a foreign worker on an H-2B visa, they must first attempt to recruit an American worker and receive certification from the Labor Department that there are none available to do the job. The

days expected to announce a ers must pay the workers, so temporary humanitarian pro- they aren't paid less than gram for Venezuelans, which American counterparts. Farmworkers fall under a separate H-2A visa program. The seasonal-worker visa

program scrambles traditional partisan lines. Democrats and Republicans with seasonal industries in their states have been supportive of the program, while labor unions and Republicans in favor of tighter immigration restrictions have been generally against it.

## CORRECTIONS ぜ **AMPLIFICATIONS**

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

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**NEW YORK** 

### State Can Enforce **Gun Law for Now**

A federal appeals court on Wednesday said New York can enforce for now a new law that limits the carrying of concealed handguns on mass transit and other public places.

The law, known as the Concealed Carry Improvement Act, designates a host of public spaces-such as trains, buses, parks, restaurants theaters, stadiums, bars and Manhattan's Times Square—as gun-free zones. It took effect Sept. 1, but its status was left uncertain after gun-rights advocates last week won a temporary restraining order against it.

Democrats in Albany enacted the law after the Supreme Court, on a 6-3 vote in June, struck down New York's longstanding strict limits on granting permits for carrying concealed handguns outside the home

Last week, U.S. District Judge Glenn T. Suddaby in Syracuse temporarily halted enforcement of major parts of the new law, stating that many of the gun-free zones and permitting requirements in the statute were likely unconstitutional based on the Supreme Court's expansion of gun rights. In a one-page order, the Second U.S. Circuit Court of Appeals on Wednesday said New York can keep enforcing the law while an appellate panel considers New York's appeal of Judge Suddaby's ruling.

–Jacob Gershman

**EDUCATION** 

U.S. WATCH

### **ACT Scores Lowest** In Over 30 Years

The average score on the ACT, a college admissions test, fell to its lowest level in more than three decades, the organization behind the exam said Wednesday.

Test takers from the class of 2022 scored an average of 19.8 out of 36, the ACT said, the first time the average score dropped below 20 since 1991. The class of 2021 scored an average of 20.3. Janet Godwin, chief executive

of ACT, said the Covid-19 pandemic's disruptions exacerbated systemic issues in education, hurting test scores. –Jennifer Calfas

**BOSTON** 

### **Civil-Rights Activist,** 91, Stabbed in Park

A 91-year-old civil-rights activist and education advocate was stabbed multiple times while walking her dog in a Boston park, authorities said.

Jean McGuire, the first Black woman to serve on the Boston School Committee, was stabbed in Franklin Park at about 8:30 p.m. Tuesday, Suffolk District Attorney Kevin Hayden said Wednesday after visiting her at the hospital. She is "as spunky and as vibrant as ever and is going to be just fine," Mr. Hayden said.

The suspect remains at large, police said.

—Associated Press

## U.S. NEWS

## Alex Jones Must Pay \$965 Million

By Erin Mulvaney

A Connecticut jury ordered conspiracy theorist Alex Jones to pay \$965 million in damages for repeatedly claiming on his Infowars platform that the 2012 Sandy Hook school massacre was a government hoax.

The verdict follows a nearly monthlong trial on how much Mr. Jones should pay after he was found liable for defamation in a case brought by eight of the families whose loved ones died in the elementary school shooting, as well as a Federal Bureau of Investigation officer who was a first responder.

After roughly three days of deliberation, the jury awarded the \$965 million to 14 family members and the FBI agent.

Connecticut Superior Court Judge Barbara Bellis had previously issued a default judgment against Mr. Jones after he failed to provide information about his business and other communications required during the court proceedings.

Mr. Jones for years claimed the shooting in Newtown, Conn., in which a gunman killed 20 first-graders and six adults, didn't happen and the victims were actually "crisis actors." The Connecticut case is one of several lawsuits seeking to hold him liable for his statements. Families who sued say they have been subject to repeated harassment from Mr.



'Those who profit off others' trauma will pay for what they have done,' said Erica Lafferty, whose mother died in the massacre.

Jones's followers who believed Erica Lafferty, whose mother, the families were part of a conspiracy.

The award follows a Texas jury's decision in August that ordered Mr. Jones to pay about \$50 million to the parents of a 6-year-old who was killed in the shooting. That trial took place in Austin, where Infowars and Mr. Jones are based. Another trial is expected there.

"I know that this is not the end of Alex Jones. His hate, lies and conspiracy theories will follow both me and my family all of our days," said

Sandy Hook's principal, died in the 2012 shooting. "I'm proud and thankful for the message that was sent today, that the truth matters. And those who profit off others' trauma will pay for what they have done."

Mr. Jones, who was not in court for the verdict, ran a broadcast while it was being announced, deriding the jury's award and asking for donations to help with legal appeals.

Family members of those who died took the stand during the Connecticut proceedings and tearfully told jurors about

animal research, said Nita Fara-

hany, a Duke University neuro-

ethicist who wasn't involved in

port by the U.S. National Acad-

emies of Science, Engineering

search presented concerns in-

cluding the potential for animal

Sergiu Pasca, the neurosci-

suffering or the augmentation

entist who led the newly pub-

leagues found no evidence of

lished work, said he and his col-

detrimental effects like memory

deficits, increased anxiety or sei-

zures in rats transplanted with

human brain-like organoids.

and Medicine said such re-

of their cognitive abilities.

the Nature study. A 2021 re-

fected their lives. Some said they received death and rape threats and moved multiple times to avoid recognition.

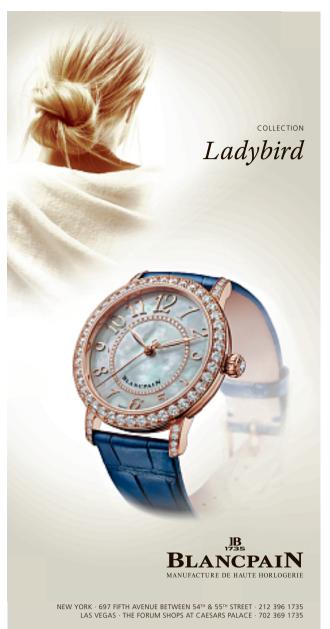
Robbie Parker, whose daughter Emilie was killed, testified that a statement that he gave to the media in the days after the shooting was aired on Infowars repeatedly, as Mr. Jones and other hosts on Infowars claimed he was an actor. Mr. Parker said Emilie's memorial page was inundated with comments claiming they were liars and calling their daughter vulgar names.

Mr. Jones's attorneys argued that he shouldn't be the scapegoat for what happened to the families.

Infowars has an online site, a streaming platform and a radio show. During trial, the families' lawyers argued that Mr. Jones's audience grew in the wake of his Sandy Hook claims, making him millions of

Before the start of the Connecticut trial, Mr. Jones put Infowars parent company Free Speech Systems into chapter 11 bankruptcy in an effort to contain the costs of the defamation litigation. After the trial began, a Texas bankruptcy judge ordered an independent review of Infowars' financial affairs and blocked FSS from hiring chapter 11 advisers chosen by Mr. Jones.

> —Jonathan Randles contributed to this article.





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## Human Brain Tissue Transplanted in Rats

By Daniela Hernandez

Bioengineered human tissue transplanted into rat brains generated hybrid neural circuits that affected the animals' behavior, researchers said, expanding a pathway for exploring brain development and the mechanics of some diseases.

Neuroscientists at Stanford University transplanted tiny blobs of neural tissue known as organoids into the brains of newborn rats. The human cells grew and made functional connections within the rat brain. generating hybrid neural circuits, the researchers said in a study published Wednesday in the journal Nature.

Such circuits are the information highways of nervous systems, processing sensory information to drive behaviors, including movement, learning, memory and motivation. Transplanting brain-like organoids offers researchers a unique opportunity to study how abnormalities in the connectivity, activity or shape and size of human neurons might manifest as disease.

"We can use this to do experiments that we cannot do with humans," said Vincenzo De Paola, a neuroscientist at Duke-NUS medical school, Sing-

### **Ethical Questions Arise With Studies**

The scientific promise of transplanting human tissue into animals will need to be weighed against ethical concerns about animal welfare and how to classify animals with chimeric brains, or brains that have both human and animal cells, some researchers and ethicists said.

One point of debate will be whether animals implanted with human brain-like organoids should be more protected under rules governing

apore, and at Imperial College

London who wasn't involved in

the work. Such research could

probe the molecular underpin-

nings of hard-to-study psychi-

atric conditions like autism and

schizophrenia.

Sergiu Pasca, a Stanford University neuroscientist who led the work published in Nature. and his colleagues took skin cells from healthy volunteers and from patients with Timothy syndrome, a rare genetic condition associated with autism and epilepsy. They turned back the cells' molecular clock

to transform them into a kind of stem cell that can morph into any kind of cell in the body. They then coaxed them into developing into various types of brain cells, which organized themselves into blob-resembling tissue from the cerebral cortex, the outermost layer of the brain. The organoids were then transplanted into the

where they continued to grow. A few months after transplant, normal human neurons in rat brains were six times as large and had more branchlike

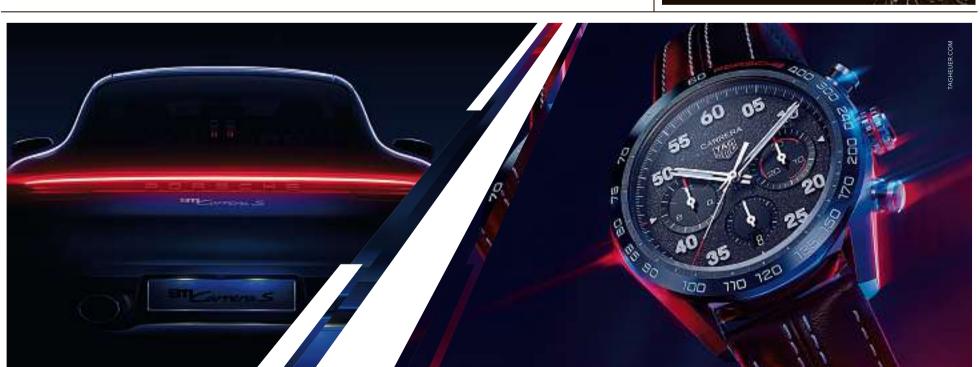
brains of the newborn rats,

structures called dendrites, which neurons use to make connections to other neurons, than neurons in organoids that remained in lab dishes. Neurons in organoids transplanted from patients with Timothy syndrome were much smaller and had fewer branches. The differences between normal and diseased neurons became apparent only after cells developed in the rats' brains, the researchers said.

The findings emphasize the limits of using brain-like organoids in petri dishes to study brain development and neuropsychiatric conditions, according to the researchers.

"Some of these deficits associated with disease are only going to reveal themselves within the context of a circuit," Dr. Pasca said. "Psychiatric disorders are disorders of circuits, and they result in behavioral changes because they change circuits in a specific way."

This isn't the first time scientists have transplanted brainlike organoids into lab animals' brains. In 2018, a team from the Salk Institute for Biological Studies in La Jolla, Calif., and San Diego State University showed that neurons in brainlike blobs formed active connections with mouse neurons.



Adrenaline comes as standard.

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### U.S. NEWS





Democratic Lt. Gov. Mandela Barnes, left, is challenging Republican Sen. Ron Johnson, who has been seen as the GOP's most vulnerable Senate incumbent.

## Johnson Has Edge in Wisconsin Poll

By John McCormick

MUSKEGO, Wis.-Ron Johnson started 2022 as his party's most vulnerable Senate incumbent because he was the only Republican member running in a state President Biden won, had tepid poll numbers, and a history of making controversial statements that help animate his opposition.

Less than a month before Election Day, polling shows he is the narrow favorite to hold his Wisconsin seat, which would be a significant boost for Republican hopes of winning the chamber.

A Marquette Law School released Wednesday showed Mr. Johnson leading Democratic Lt. Gov. Mandela Barnes among likely voters, 52% to 46%. In September, the incumbent was ahead by 1 percentage point in the same poll.

The two men face off Thursday evening for their second debate, after Mr. Johnson called last week's meeting an ambush because he didn't like the questions asked by reporters.

Mr. Johnson's potential reelection in a state that had the third-narrowest outcome in the 2020 presidential election has been helped by the \$42 million in ads run since the August primary by Mr. Johnson and his allies that have sought to tarnish the image of his challenger.

on liberal stances Mr. Barnes has taken-especially in relation to crime and policing—as well as his endorsements from progressive icons such as Sen. Elizabeth Warren of Massachusetts and U.S. Rep. Alexandria Ocasio-Cortez of New York.

Mr. Barnes and his allies are painting Mr. Johnson as out of step with a majority of voters for his opposition to abortion. Since the primary, they have spent \$34 million on advertising, according to ad tracker AdImpact.

Mr. Johnson has called for a one-time referendum in his state to decide how late in a pregnancy abortion should be allowed, if at all. He has said he supports exceptions in cases of rape, incest and when the life of the woman is at risk.

Mr. Johnson, during an interview outside a Moose club lodge in this heavily Republican area, described himself as centrist political figure, claimed his party has lost its way as a fiscal watchdog, and expressed no desire when asked if he would like former President Donald Trump to campaign at his side.

He also said crime is mostly a local and state issue and not one Congress can do much about, even though his campaign and its allies have heavilv focused their advertising on the topic, as have other GOP candidates and groups nation-Republicans have focused wide ahead of the Nov. 8 elec-

Mr. Johnson has managed to win re-election before even when he's been in negative territory for net favorability in Wisconsin's most closely watched poll.

Past Wisconsin Senate Wisconsin Sen. Ron Johnson's net favorability\* race results Republican Democrat 15 pct. pts. Sen. Ron Johnson Sen. Tammy Oct. 3-9 poll -4 pct. pts. 2015

\*The difference between those viewing him positively vs. negatively Sources: Marguette Law School Poll, most recently a telephone survey of 801 registered voters conducted Oct. 3-9; margin of error of +/- 4.3 pct. pts. (net favorability); Wisconsin Elections Commission (Senate results)

tion. Crime, Mr. Johnson said, has been a central part of his re-election bid because "the Democrats nominated a radical leftist who is hostile to law enforcement.'

Mr. Barnes tweeted in 2020 what seemed to be support for a progressive rallying cry to reduce funding for police departments. He has since said he doesn't support cutting police funding and wants more investment in crime prevention.

In the interview, Mr. Johnson stood by his past statements about mouthwash being an effective tool to fight Covid-19, a claim he made after opposing vaccine mandates and questioning the push to vaccinate as many people as

Progressive activists recently made a life-size figure of Mr. Johnson out of cow manure in response to his skepticism over climate change. The senator said he hadn't heard about the rendering, but offered an explanation for why so many Democrats oppose him.

They do believe this is their Senate seat and it kind of ticks them off that I've been sitting in it here for 12 years." he said. "And I may sit in it for

Wisconsin has elected both progressives and conservatives to statewide office. In 2018, it re-elected Democratic Sen. Tammy Baldwin, the first openly gay person to serve in the Senate and one of the chamber's most liberal members, by almost 11 percentage

Mr. Johnson, 67 years old, was first elected in 2010 and is seeking a third term, after previously pledging to only serve just two. The former plastics manufacturing executive has cast himself as an outsider and has tried to establish himself as a leading voice for fiscal restraint, while also embracing Mr. Trump's false claims of widespread election fraud in

Earlier this month, Mr. Johnson angered Democrats by repeating his suggestions that the violence in and around the U.S. Capitol on Jan. 6, 2021, didn't represent an armed assault.

Mr. Johnson said it isn't fair to suggest he has minimized the Capitol violence. "I immediately and forcefully condemned the violence, but I put it in proper perspective," he said, before suggesting the media and Democrats have played down the physical and property damage done in riots nationwide following the murder of George Floyd by a Minneapolis police officer in May

## Jan. 6 Hearing to Focus on Trump's Thinking

By Scott Patterson

WASHINGTON—The House select committee investigating the attack on the Capitol on Jan. 6, 2021, will focus its hearing Thursday on former President Donald Trump's state of mind as the panel begins to make its closing argument that he orchestrated a wide-ranging attempt to overturn the 2020 presidential election, committee aides said.

Since its most recent hearing in late July, the panel has received thousands of documents from the Secret Service and interviewed new witnesses, including several members of Mr. Trump's cabinet. Documentary evidence will include information from hundreds of thousands of pages the Secret Service presented to the committee after it subpoenaed the agency in July, according to committee aides.

Mr. Trump has said he did nothing wrong, continues to falsely claim the election was stolen and calls the select committee a partisan witch hunt. He was impeached by the House in early 2021 on a charge of inciting an insurrection and acquitted in the Senate.

In the committee's most recent hearing, the panel presented testimony that Mr. Trump spent the afternoon of the riot at White House watching televised footage of the attack. Despite the urging of aides and family members, he refused to take actions to stop the violence for several hours, witnesses testified.

In Thursday's hearing, the committee will present its findings from the new interviews and documents alongside a wide-ranging look at Mr. Trump's efforts to reverse the election results, including events before the 2020 election and after Jan. 6, 2021, according to committee aides. The panel has previously laid out efforts by Mr. Trump and his allies to pressure officials in state and local government to help block President Biden's win after the election.

The panel will examine "ongoing threats to democracy that persist to this day," a committee aide said. The 1 p.m. EDT hearing could be the final public hearing before the midterm elections.

The public hearing, the ninth this year, won't include live witnesses, committee aides said. Instead, it will show video recordings of witness interviews, which will include some that haven't been aired publicly before, the aides said.

## Biden Makes Camp Hale a National Monument

By Joseph De Avila

President Biden has designated Camp Hale, a World War II-era military training ground in Colorado, as a national monument, the first of his presidency.

Mr. Biden signed a proclamation on Wednesday establishing the Camp Hale-Conti-Divide National Monument, the White House said. The monument resides

Camp Hale, located about 115 miles west of Denver, served as a winter training ground for the 10th Mountain Division, the Army's first and only mountain infantry divi-

"These treasured lands tell the story of America," Mr. Biden said at a news conference Wednesday. "The soldiers of

on existing public lands within Camp Hale learned to scale pare for the war they were about to fight."

Camp Hale, part of the ancestral homelands of the Ute Tribes, is now home to many ski resorts and hiking and biking trails.

The U.S. Forest Service will oversee the 53.804-acre national monument and create a management plan for the site, the White House said

the White River National For- rock, ski, and survive and pre- nation's veterans, Indigenous located off the coast of Maspeople, and their legacy by protecting this Colorado landscape, while supporting jobs and America's outdoor recreation economy," the White House said.

Last year, President Biden restored protections for three national monuments: Bears Ears in Utah. Grand Staircase-Escalante in Utah and Northeast Canyons and Seamounts

"This action will honor our Marine National Monument sachusetts.

Former President Donald Trump reduced protections for those monuments during administration. Trump administration cut the size of the federally protected lands in Utah and sought to open up the Northeast Canyons and Seamounts Marine National Monument to commercial fishing.

## NEW YORK'S ORIGINAL TICKETS HALLOWEEN EVENT **OPEN THROUGH NOV HUDSON VALLEY** at Van Cortlandt Manor **LONG ISLAND** at Old Bethpage **Village Restoration** A PRODUCTION OF HISTORIC HUDSON VALLEY **ADVANCE TICKETS ONLY** pumpkinblaze.org

## ByteDance Challenges Spotify

Continued from Page One value TikTok's promotional benefits for the labels, the people said.

As it has exploded in popularity, particularly among young people, TikTok has helped many songs become megahits by going viral. TikTok expanded its audience during pandemic lockdowns, and many Billboard Hot 100 hits got their start or a boost from becoming a trend on the service.

"Heat Waves" by Glass Animals, which spent five weeks at No. 1 and recently tied the record for most weeks spent on the chart, initially found its audience on TikTok. The song that shares the record-the Weeknd's "Blinding Lights" also heavily trended on TikTok.

ByteDance's expansion in music streaming would be a means of keeping its large user base within its ecosystem. While subscription would open up another source of revenue, one challenge of the musicstreaming business is how much is paid out to labels. Market leader Spotify has expanded into podcasts and audiobooks in an effort to improve margins.

Apple Music and Alphabet Inc.'s YouTube also have sizable music-streaming businesses that compete for users.



the major music labels to expand its music-streaming business.

YouTube is also leaning into Corp.'s Sony Music Group reshort-form video and appeals to a similar audience as Tik-Tok in the younger demographic that has become accustomed to not paying for such content, including music.

ByteDance's revenue continues to expand, up nearly 80% to \$61.7 billion in 2021, but so, too, are the company's expenses as it focuses on growth. The company's cost of sales came in at \$27.4 billion for 2021, up 79% from the previous year, The Wall Street Journal reported this month.

To expand its musicstreaming service, the Chinese internet company needs to reach agreements with all of the major music labels. Already, music executives have expressed concerns to Byte-Dance about how difficult it is to make money through Resso in the three markets it is in today, people familiar with those discussions said. Sony Group

cently allowed its agreement with Resso to lapse in all three countries, resulting in the company's library of songs being taken off the ann. Similar to the "freemium"

model pioneered by Spotify, Resso offers a free, ad-supported tier as well as an on-demand subscription tier. While artists and labels are paid out less for streams on Spotify's ad-supported tier than on its subscription service, the music business has applauded the streaming giant's use of the free tier as an effective funnel to subscriptions.

But very few users are paying for Resso. For example, some of the people said the conversion rate from free to paid subscribers for Resso was in the low single percentages. While Resso's markets are known to be difficult for conversion, those people said, that compares with close to 45% of Spotify users globally who switch from the free service to paying.

In some markets such as Indonesia, Resso has experimented with different business models, such as by allowing users to get a period of free listening if they watch a video ad, people familiar with the matter said. Music-label executives aren't opposed to such arrangements, but they want to make sure they get a negotiated cut of the revenue, the people said. Resso also frustrated label partners in that the free service wasn't differentiated from the paid subscription offering, so there was no incentive for consumers to upgrade, the people said. The major music-rights

holders have licensed their catalogs to TikTok in short-term deals to allow users to add snippets of songs to their videos. But those deals have come close to expiring before new ones are reached as music executives argue that ByteDance has been hesitant to pay what the labels say are established market rates. Those licenses, specific to short-form video, are separate from the type of license required for a full-on music-streaming service.

As ByteDance works to expand Resso's markets, the company is also looking at and working on ways that Resso could be integrated into the TikTok app, according to people familiar with the matter. Such an integration would make it easier for artists who market themselves on TikTok to earn more money through streaming.

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**A6** | Thursday, October 13, 2022

## Prince Images Come Before High Court

Intellectual property case pits late pop star's photographer against Warhol foundation

By Jess Bravin

WASHINGTON—The preme Court on Wednesday addressed a copyright dispute involving two of the 20th century's most famous visual and musical artists, pitting a celebrity photographer against the Andy Warhol Foundation for Visual Arts over a photo she shot of Prince that Warhol used as the basis for a series of silk-screen prints.

At issue was whether Warhol made fair use of Lynn Goldsmith's photo, requiring no compensation, or instead infringed her copyright. The court's answer could set the boundaries of copyright protections going forward, with implications for how writers, artists, musicians, filmmakers and others repurpose existing works in the pursuit of something new.

For the justices, a central question was whether Warhol's work was something essentially different from Ms. Goldsmith's photograph. Their decision, expected by July, could potentially affect the value of intellectual property held not only by artists but also movie studios, record labels, book publishers and other creative industries.

Compared with other forms of intellectual property, copyrights last a long time—for works produced since 1978, generally for 70 years after the author's death. A patent, in contrast, expires in 20 years. But copyrights confer weaker protections than patents, for other parties are entitled to make "fair use" of copyrighted material to create new works of their own.

While copyright law can recognize fair use depending on the "purpose or character" of a successive work, such as whether it is used for educational reasons rather than commercial ones, cases typically turn on whether a subsequent work was transformative or merely duplicative of earlier material.

The Warhol foundation's attorney, Roman Martinez, said there was no question that the artist had transformed the source material. While Ms. Goldsmith has said her 1981 photo intended to convey Prince's vulnerability on the cusp of his superstardom, the foundation brief argues that "Warhol's Prince Series conveys the dehumanizing nature of celebrity." He noted that the court rejected a copyright claim in 1994 against 2 Live Crew's Luther Campbell because his parody of "Oh, Pretty Woman" imbued a new "message or meaning" to the 1964 Roy Orbison hit.

But Warhol's Prince was no parody, and Justice Ketanji Brown Jackson said copyright law looked at purpose differently. "There may be a different meaning or message but if both of those depictions are going in a magazine," she said,



Supreme Court justices on Wednesday heard a case centering on a 1981 photograph taken by Lynn Goldsmith that was used as a basis for a series of paintings by Andy Warhol, Above, Ms. Goldsmith's photo and a Warhol painting included in court filings.

"the purpose, the reason why you've used it, is the same."

Ms. Goldsmith's attorney, Lisa Blatt, said even transformative artists can't draw from others' works without a li-

Warhol, perhaps, was "a creative genius who imbued other people's art with his own distinctive style," she said. "But Spielberg did the same for films and Jimi Hendrix for music. Those giants still needed licenses. Even Warhol followed the rules; when he did not take a picture himself, he paid the photographer. His foundation just failed to do so here," she said.

Copyright protection ex-

Chief Justice John Roberts suggested it would be a stretch to call Warhol deriva-

Put the Warhol print and the Goldsmith photo side by side, he said. "It's not just a different style. It's a different purpose," the chief justice said. "One is the commentary on modern society. The other is to show what Prince looks

The case turned the oral argument into something of a pop-culture crucible, with Justice Clarence Thomas saying he was a Prince fan in the 1980s and one counsel, facing a hypothetical question from

tends to derivative works. But Justice Amy Coney Barrett, admitting he had yet to see The Lord of the Rings" movies or read the books.

Industry groups such as the Motion Picture Association and the Recording Industry Association of America filed briefs arguing against a broad view of transformative use that could, as the movie studio organization put it, "swallow copyright owners' exclusive derivative works right."

Major museums, including the Art Institute of Chicago, the Los Angeles County Museum of Art and New York's Metropolitan Museum of Art, filed a brief warning that a constricted view of transfor-

mative use could threaten their ability to create exhibitions and publish artistic

Wednesday's dispute traces to 1981, when Ms. Goldsmith shot several portraits of Prince for a Newsweek magazine assignment. Ms. Goldsmith retained copyright in the photos, and in 1984 her agency licensed one of the shots to Vanity Fair as an artist referencethat is, to aid in creation of a magazine illustration.

According to lower-court records, Ms. Goldsmith didn't know the photo had been licensed and wasn't informed that the illustrator Vanity Fair hired was Warhol, perhaps the most celebrated pop artist in history. The full-page illustration, depicting a purple-faced Prince against a red back-ground, appeared in the magazine's November 1984 issue, accompanying an article titled "Purple Fame." Warhol went on to produce 15 more works based on the photo, called the Prince Series. They were among his last; Warhol died in February 1987, at age 58, following gallbladder surgery.

Prince was 57 when he died in April 2016 from what was ruled a fentanyl overdose. Soon thereafter, Vanity Fair's publisher, Condé Nast, licensed from the Warhol Foundation a different image from the Prince Series for a special commemorative edition. After the issue appeared in May 2016, Ms. Goldsmith learned of the Prince Series and accused the Warhol Foundation of infringing her copyright.

## Political Feud Mires Case on El Paso Mass Shooting

By ELIZABETH FINDELL

The murder trial of a man accused of killing 23 people at a Walmart in El Paso, Texas, in 2019 has become mired in a political sideshow, including claims that a representative of the district attorney impersonated the son of a victim in order to attack the judge.

A report filed in court last week by a lawyer appointed to examine the matter on behalf of the family said that an attorney personally representing District Attorney Yvonne Rosales was responsible for sending an email in the family's name criticizing Judge Sam Medrano Jr. and a political adversary of Ms.

The district attorney's office filed a response to the report Tuesday, calling the report biased and alleging that the evidence contained within it, including audio recordings, were improperly submitted.

Ms. Rosales didn't respond to requests for comment, and Judge Medrano said he was prohibited from commenting. The allegations in the report are the latest twist in a political feud that has emerged around

one of the most high-profile criminal cases in Texas history. The Aug. 3, 2019, attack on a Walmart in El Paso killed 23 and injured dozens more. Authorities said Patrick Crusius.

then 21 years old, traveled from

North Texas to the border city

with a goal of killing Latinos.

The El Paso district attorney has charged Mr. Crusius with capital murder. Mr. Crusius is also facing federal charges in the shooting. The federal case, which is set for early 2024, is expected to go to trial before the state case. Federal prosecutors haven't said whether they will seek the death penalty, which the state has vowed to do. Mr. Crusius has pleaded not

guilty to all of the charges. At a hearing Tuesday, Judge Medrano approved a request by Mr. Crusius's lawvers to have at least 45 days to review the report as the case moves toward an undetermined trial date.

THE WALL STREET JOURNAL

Lawyers for Mr. Crusius didn't respond to a request for com-

As the state case has slowly progressed, division has arisen between Ms. Rosales, a Democrat elected in 2020, and Judge Medrano, a Democrat first elected to his judgeship in 2000. At a July status hearing on the case, Judge Medrano accused Ms. Rosales of "grandstanding" for sending out a news release claiming the state case could go to trial before the federal case, saying she hadn't conferred with the court. He issued a gag order on all parties.

Ms. Rosales's office responded in early September with a petition to remove Judge Medrano from the case, arguing he was biased against her. A Central Texas judge on Sept. 27 denied that request. This week. the district attorney's office filed an emergency petition with the Eighth Court of Appeals, calling the gag order unconstitutional and asking that it be overturned.

An email sent to El Paso

journalists in August that said office didn't comment on the it was from the son of Alexander Gerhard Hoffman, who died in the Walmart shooting, has become a focus of recent activity in the case. The email referenced complaints against Judge Medrano and attacked a former

The August 2019 attack on a Walmart killed 23 and injured dozens more.

assistant district attorney who area lawyers say is a possible political challenger to Ms. Rosa-

Local media reports pointed out that the email's recipients were the same as the district attorney's press list and that it was written in English and included details on legal processes. The Hoffmans, who live in Mexico, primarily speak Spanish. The district attorney's

matter. As Judge Medrano's gag order appeared to have been broken, he assigned a local lawyer to represent the Hoffman family, in case they needed independent legal representation. That attorney filed the informational report on the family's behalf Oct. 6.

The report alleged that Ms. Rosales's personal lawyer, Roger Rodriguez, and his wife, Anne Rodriguez, sent the email, borrowing the phone of Mr. Hoffman's widow to do so. Hoffman family members weren't aware of the email's content, according to the report.

The report included what it said are transcripts of phone calls between Mr. Rodriguez and members of the Hoffman family, who began secretly recording him because they felt he was threatening them, according to the report. Those records have been turned over to the Federal Bureau of Investigation, according to the filing.

An FBI spokeswoman declined to comment.

Mr. Rodriguez said in a brief interview last week, "There's a lot of lies flying around." He didn't respond to further requests for comment. Representatives of the Hoffman family didn't respond to a request for comment. Ms. Rodriguez couldn't be reached.

According to the report, Ms. Rosales introduced Mr. Rodriguez to family members of people killed in the Walmart shooting at the district attorney's office immediately after the July 1 hearing, and told the families he worked for her. He urged the families to file grievances against the judge.

After that, Mr. Rodriguez told the Hoffman family that Judge Medrano was trying to prevent a trial and that he was working to get the judge arrested according to the transcripts of their phone calls included in the report. He told them when they would receive communications from prosecutors and how to respond.

-Marian Porras contributed to this article.

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## Tribal **Victims** Settle Suits

Continued from Page One worked for another 20 years as IHS officials ignored warning signs and punished whistleblowers, the investigation by the Journal and Frontline

Weber, now 73 years old, was later convicted of abusing six victims covered by the pending settlement agreement and is serving a lifetime prison sentence at the federal penitentiary in Pekin, Ill. A criminal case involving a seventh victim involved in the settlement was dropped in

After reporting by the Journal and Frontline, a White House task force reviewed the IHS's sexual-abuse safeguards, and the IHS itself commissioned an independent investigation of Weber's tenure. The agency sought to keep the resulting report, completed in 2020, secret for more than a year, but the Journal and the New York Times successfully sued for its release under public-records laws.

Those reports figured heavily in the claims of Weber's victims, who alleged in two senarate lawsuits that the government failed to meet its contractual duties to Native American tribes under 19th-



Weber, was transferred, not fired, after abuse reports surfaced.

century war treaties. Those duties include removing socalled "bad men" from reservations. In one lawsuit, five victims

from Weber's time in South Dakota claimed, citing the Journal's reports and the IHS's independent investigation, that more than a dozen specific IHS officials knew of allegations against Weber and failed to act. The suit also claims more unnamed officials were aware of the allegations.

The independent IHS report showed officials at all levels of the agency, including one in its headquarters-based human-resources offices, were aware of allegations and in some cases participated in covering them up. One senior official proposed reassigning a whistleblower who had complained about Weber's conduct with teenage boys to Kotzebue, Alaska, a remote town

within the Arctic Circle. Contacted by the Journal, the official said he didn't recall the

In Weber's criminal trial and in interviews with the Journal, his victims, now all adults, described years of sexual assault as young boys at IHS facilities, as well as in the doctor's government-provided housing and elsewhere. One described a sexual encounter with the doctor after he checked him out of a juvenile detention facility. Another said the doctor raped him in an examination room at the hospital when he was 8 years old.

One victim who is part of the settlement, Joe Four Horns, now a 39-year-old federal inmate who was convicted of bank robbery, told the Journal in a 2018 interview that Weber began molesting him as an 11-year-old boy shortly after his father died.

"We deeply regret the trauma suffered by the patients under the care of Stanley Patrick Weber," said Roselyn Tso, who was confirmed by the Senate as director of දි the IHS last month. "We know the trust in our agency has been damaged, and we are doing all we can to rebuild that trust." she said.

Ms. Tso said the IHS had taken steps to prevent future abuse, including increasing training for employees and requiring broader reporting of abuse allegations.

In the civil lawsuits the government now seeks to settle, lawyers argued the government harmed Weber's victims by failing to remove the doctor himself. But a federal judge ruled Weber's conduct fell outside the statute of limitations, and lawyers for the South Dakota victims revised the case to focus on inaction by IHS managers that came to light more recently.

The proposed settlement payments per victim are higher than government payouts in some other recent sexabuse cases.

Last year, the government paid \$7 million to settle claims by eight veterans that a medical worker at a Veterans Affairs hospital had sexually abused them, an announcement from victims' lawyers said. It paid about \$3 million this year to settle claims by three inmates after a federal prison guard was convicted of committing sexual abuse, according to the law firm representing the plaintiffs.

## Los Angeles Official Resigns Amid Outrage

BY CHRISTINE MAI-DUC

Los Angeles City Councilwoman Nury Martinez resigned Wednesday following outrage over racist remarks she made on a leaked audio recording.

The announcement came after community leaders and fellow Democrats from the local to national level, including President Biden and Los Angeles Mayor Eric Garcetti, called on Ms. Martinez to resign after the audio was released Sunday.

Ms. Martinez stepped down from her position as City Council president Monday and announced a leave of absence from the council Tuesday.

"As the first Latina Council President, I strived to serve with compassion and to give a larger platform to the communities I felt had been left behind," Ms. Martinez said. "While I take the time to look inwards and reflect, I ask that you give me space and privacy.'

Ms. Martinez previously apologized for her remarks, which included comparing a fellow council member's Black son to a monkey and dismissing Los Angeles District Attorney George Gascón as being "with the Blacks." She also used derogatory language to describe Jews, Armenians and indigenous people from Mexico's Oaxaca region.

Her resignation statement made no mention of those comments, which drew widespread condemnation. "To all little Latina girls across this city-I hope I've inspired you to dream beyond that which you can see," she said.

Also Wednesday, California's attorney general opened an investigation into the redistricting process in the city of Los Angeles. The taped discussion, which took place in October 2021 as a redistricting commission was completing its work, touched upon assets such as wealthy institutions and major

infrastructure projects that Ms. Martinez and fellow council members Gil Cedillo and Kevin de León, all Democrats, wanted in their districts.

Los Angeles City Council districts are drawn by a 21-person commission. Each of the city's 15 council members appoints one member except for the president, who selects two. The city attorney, city controller and mayor also appoint members. There have been calls in City Council meetings this week for that process to be reformed.

California Attorney General Rob Bonta said the remarks had "cast doubt on a cornerstone of our political processes for Los Angeles."

He said his department's Civil Rights Enforcement Office would examine whether any state and federal voting-rights laws or government transparency laws were violated. "We will endeavor to bring

the truth to light as part of the sorely needed work to restore confidence in the redistricting process for the people of our state," the Democrat said. Ms. Martinez's comments oc-

curred during a secretly recorded conversation among the three council members and Ron Herrera, who resigned his post as head of a prominent labor union umbrella group Monday.

Messrs. Herrera, Cedillo and de León have all apologized for not objecting to Ms. Martinez's racially derogatory comments on the recording.

Despite calls from many elected officials for them to step down as well, Messrs. Cedillo and de León have stayed in their jobs. They didn't respond to requests for comment Wednesday.

The city charter doesn't allow for the removal of a City Council member unless the person is awaiting trial on criminal charges or in the event of a voter recall.

## FDA Clears New Covid-19 Over Racist Comments Boosters for Young Children

AND LIZ ESSLEY WHYTE

U.S. health regulators on Wednesday expanded eligibility for the new Covid-19 booster shots to children as young as 5 years old, broadening access to help bolster protection against Omicron strains of the coronavirus.

The Food and Drug Administration authorized the updated booster from Pfizer Inc. and its partner BioNTech SE for children ages 5 through 11, and Moderna Inc.'s updated booster for children 6 through 17. Centers for Disease Control and Prevention Director Rochelle Walensky subsequently recommended use of the updated boosters in these age groups.

"This is a critical step in our fight against Covid-19. An updated vaccine can help bolster protection for our children this winter," Dr. Walensky said in a tweet.

The FDA in late August cleared the updated Pfizer booster shot for people 12 and older, and Moderna's for those 18 and older. Children 5 to 11 could begin having access to updated booster shots in the coming days.

Under the FDA's decision, children become eligible for the booster shot two months after completing their primary series, which consists of two doses several weeks apart, or and is making them available dren vaccinated or boosted a prior booster dose. The dosfor Pfizer's updated booster for children 5 to 11 is one-third of the adult dose. The updated Moderna booster for adolescents is the same as for adults, and for children 6 to 11 it is half of the adult

The FDA's decision widens a campaign by U.S. health officials to try to bolster protection against a shape-shifting virus before a potential surge in Covid-19 cases in the fall and winter as people spend more time indoors.

The federal government has purchased tens of millions of doses of the updated boosters at no cost to recipients through pharmacies and other vaccine sites.

The effort has faced some challenges, including waning enthusiasm for repeat booster shots and lack of awareness.

A recent Kaiser Family Foundation poll found that many adults had heard little or nothing about the new boosters and weren't sure they were eligible. So far, 11.5 million Americans have received an updated booster shot, or 4.5% of the eligible population of those age 12 and older, according to the CDC.

Parents have shown less enthusiasm for having their chil-

than adults have generally shown about getting the inoculations themselves. About 8.8 million children ages 5 to 11, or 31% of that age group, completed the two-dose primary vaccination series, according to the American Academy of Pediatrics. Those without a primary vaccination aren't eligible

for the updated booster shots. Although the risk of severe Covid-19 is lower in children than in adults, the disease has led to thousands of hospitalizations and more than 1,700 deaths of children under 18, according to the CDC.

-Jared S. Hopkins contributed to this article.



The Covid-19 vaccine was administered at a children's hospital in Columbus, Ohio, last year.

## Judge Dismisses DOJ Suit Against Casino Mogul Wynn

By Sadie Gurman

WASHINGTON—A federal judge dismissed a Justice Department lawsuit seeking to force casino mogul Steve Wynn to register as a lobbyist for his 2017 efforts to obtain a diplomatic favor sought by Chinese authorities, saying the government doesn't have the power to retroactively compel

such a disclosure.

Describing his decision as a close call, U.S. District Judge James Boasberg wrote in a Wednesday order that longstanding court precedent bars the Justice Department from requiring foreign agents to retroactively register once they are no longer doing the work in question.

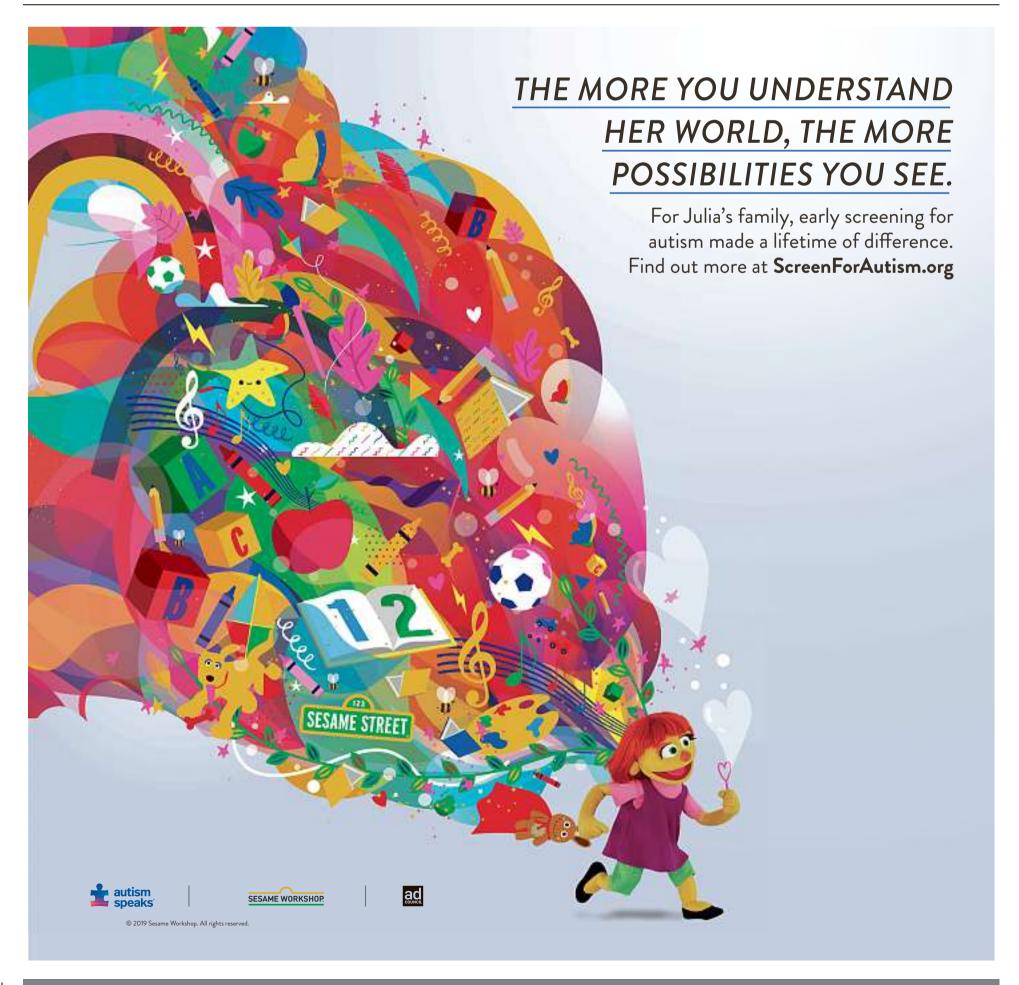
The lawsuit marked a rare

civil-court battle over the Foreign Agents Registration Act, which doesn't provide for civil penalties but gives the Justice Department the ability to seek a court order to force someone to comply. The judge's order represents a setback to the department's stepped-up efforts in recent years to police compliance with the FARA.

'We are delighted that the

District Court today dismissed the government's ill-conceived lawsuit against Steve Wynn," his lawyers, Reid Weingarten and Robert Luskin, said. "Mr. Wynn never acted as an agent of the Chinese government and never lobbied on its behalf."

A Justice Department spokesman said the agency disagreed with the ruling and "is considering options."



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## U.S. Singles Out China in Security Plan

Beijing cited as only rival with the intent and ability to reshape the international order

By GORDON LUBOLD AND CHARLES HUTZLER

WASHINGTON—The U.S. is entering a "decisive decade" as it faces competition with China and an attempt by Russia to upend the international order, while dealing with challenges from climate change to energy to food security, international terrorism and disease, the White House said Wednesday.

The Biden administration released its national-security strategy, a blueprint that outlines the administration's approach to problems around the world. The strategy describes the U.S.'s attempt to compete with its adversaries, such as China and Russia, while cultivating alliances with countries that share American interests and objectives.

"Our strategy proceeds from the premise that two strategic challenges-geopolitical competition and shared transnational threats—are intertwined," White House national security adviser Jake Sullivan said Wednesday.

'We cannot build [the] broad coalitions we need to outcompete our rivals if we sideline the issues that most directly impact the lives of billions of people," he said.

The strategy was delayed for months, in part, Mr. Sullivan said, because the analysts needed to factor in lessons from Russia's invasion of Ukraine. Chinese President Xi Jinping has responded coolly to U.S. calls for cooperation and limiting competition to prevent a new Cold War.

The strategy, which every administration is required to draft, informs a separate document that has yet to be released from the Pentagon, called the national-defense strategy. which informs budgeting and other plans for the U.S. military.

Mr. Sullivan said that the strategy is consistent with the administration's vision on modernizing the U.S. military and intelligence capabilities, amid the deep investments Beijing has made in its own military.

In addition to pointing to the threats posed by China and Russia, the strategy de-emphasizes threats from terrorism but identifies a number of transnational threats that include food security, disease, pandemics and climate change, he said.

"The national security strategy also recognizes that the climate crisis is the greatest of all the shared threats that we face without immediate global action during this decisive decade," he said.

strategy documents defined both China and Russia as global competitors to the U.S., and Moscow's February invasion of Ukraine was a reminder that the threat posed by Russia couldn't be written off. Russia is "still profoundly dangerous," the White House document said.

But the weakening of Russia's military and of its position on the global stage since the invasion and battlefield losses to Ukrainian forces have reinforced into office: Investing more at

Previous national security the view that China is the U.S.'s most consequential threat.

> While Russia is diminishing in strength, the new strategy describes Beijing as the only competitor with the intent to reshape the international order and the increasing economic, diplomatic, military and technological might to do so.

The strategy largely codifies the approach toward Beijing that the Biden administration has pursued since coming

home to boost American economic and technological competitiveness and relying more on the U.S.'s wide network of alliances to constrain Beijing's room to maneuver.

In a third pillar of that approach, the U.S. will compete responsibly with China to defend American interests, the document states, while seeking to cooperate with Beijing on climate change and recognizing the unease many countries feel at being caught between the U.S. and China.

"We also want to avoid a world in which competition escalates into a world of rigid blocs," the strategy reads. "We do not seek conflict or a new Cold War. Rather, we are trying to support every country, regardless of size or strength, in exercising the freedom to យ make choices that serve their interests.

Mr. Biden in discussions with Chinese leader Xi Jinping has outlined the U.S. call for cooperation and the need to put limits on competition to prevent a new Cold War. Beijing and Mr. Xi often have responded coolly to these overtures, saying U.S. actions don't match Mr. Biden's words.

The strategy's offer to work with all countries and not treat them as pawns in greatpower competition comes as the U.S. is trying to recover influence among developing nations. Some have at times complained that they are being driven into Beijing's and Moscow's embrace by the U.S.'s use of economic sanctions and its positions on human rights and environmental protection.

## OPEC Slashes Oil-Demand Forecasts After Supply Co

By WILL HORNER

The Organization of the Petroleum Exporting Countries slashed its forecasts for global economic growth and crude-oil demand, offering a justification for the cartel's recent 2-million-barrels-a-day supply cut that it said was part of ongoing efforts to balance oil markets.

In its closely watched monthly report on Wednesday, the oil-producers group lowered its global gross domestic product forecasts to 2.7% from 3.1% for 2022, and to 2.5% from 3.1% for 2023. It cited elevated inflation, rising interest rates and geopolitical tensions as factors that were weakening the global economy and would reduce demand for oil.

OPEC also lowered its oildemand growth forecasts by 460,000 barrels a day to 2.64 million barrels a day for 2022. For 2023, the Vienna-based group lowered its forecast by 360,000 barrels a day to 2.34 million barrels a day.

The report is the cartel's



Representatives of OPEC member countries attended a news conference this month in Vienna.

first since it undertook its largest cut to its supply targets since 2020. At a meeting in Vienna last week, OPEC and a Russia-led group of producers known collectively as OPEC+ agreed to slash output by 2 million barrels of oil a day, a sizable cut and a marked reversal in policy following months

of steadily increasing output. The revised forecasts will lend legitimacy to the cartel's decision to cut production, a major Middle East oil producers to raise oil production.

In the report, OPEC said the supply cut was "pre-emptively and proactively" aimed at meeting the challenges of a weakening economy and was part of "an ongoing and relentless effort to provide a sustainable stability to the market."

The cartel said its forecasts assume the war in Ukraine

sumers—particularly the U.S., won't escalate further. But it which had spent months push- noted that there was a host of ing Saudi Arabia and other factors that could yet deepen an economic downturn, including persistent inflation, worsening geopolitical tensions and aggressive actions by central

> OPEC now forecasts the U.S. and eurozone economies will slow sharply next year. The cartel expects the U.S. economy to grow by 0.8% in 2023, down from an earlier forecast of 1.7%, while it expects the eurozone

economy to grow by just 0.3%, down from 1.7%. It also sharply revised its 2022 growth forecast for China to 3.1% from 4.2%.

OPEC's previous oil-demand forecasts have been too optimistic, and the group has been slow to recognize the slowdown in the global economy, said Helge Andre Martinsen, senior oil analyst at DNB Markets. Even after Wednesday's revision, the group is likely still being too hopeful about oil demand, he said.

There is no logic between the OPEC cut they announced last week and what they have

been forecasting," he said. Still, the EU's steps to ban Russian oil imports, and a Group of Seven wealthy nations' plan to cap the price of oil, threaten to tighten oil markets further in the coming months, raising questions about the timing of OPEC+'s cut.

Analysts have warned that cutting oil production when inflation is high and global economies are flagging threatens to worsen both issues and could further undermine oil demand.

viewed in Washington as a rebuke of the Biden administration's diplomatic efforts to get Middle Eastern oil producers to pump more oil and help bring down soaring gasoline prices. U.S. officials have suggested

The cut also has been

the move means Saudi Arabia-a longtime U.S. ally-is siding with Russia in the growing geopolitical rift between Moscow and the West over Ukraine. OPEC+ delegates privately have acknowledged the move benefits Russia, reported The Wall Street Journal, following the meeting.

OPEC+'s cut arrested a slide in oil prices. Having fallen to less than \$83 a barrel in late September, Brent crude, the international benchmark, has since risen roughly \$10 due to expectations that the cartel would cut supplies.

On Wednesday, Brent futures shed \$1.84 a barrel to end at \$92.45. West Texas Intermediate, the main U.S. crude price, fell 2.3% to close at \$87.27 a barrel.



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## U.S.-Saudi Military Ties Will Endure

By Nancy A. Youssef And Vivian Salama

WASHINGTON—The U.S. isn't currently planning any significant changes to the number of U.S. forces stationed in Saudi Arabia but some aspects of the two nations' extensive defense cooperation could be affected following President Biden's decision to reassess relations after OPEC+ unveiled an oil-production cut, U.S. officials said.

The officials said the relationship was too critical to American interests in the Middle East to change the overall course, and that the U.S. is determined to continue its strategic cooperation with Riyadh that is central to combating Iran. But there could be a decline in some areas of defense cooperation.

Last week, for instance, the U.S. canceled its participation in a working group between the U.S. and the Gulf Cooperation Council on Iran, which was scheduled to take place Monday, U.S. officials said. The meeting was to focus on integrating defense among regional allies, in particular missile defense.

The officials added that Washington also could slow some of the huge amounts of arms sales that Saudi Arabia engages in annually to send a message of U.S. displeasure.

Many Democratic lawmakers have called for those sales to stop, but any congressional

action to force a halt is unlikely to have the votes to pass in Congress. U.S. and European defense officials say those sales-which have amounted to at least \$130 billion of proposed or completed military sales since 2010—provide an enduring and tangible link to maintaining Saudi relations.

"The Saudis are trying to make their military more like our military, and the Pentagon sees that as an important initiative," said Jon Alterman, who directs the Middle East program at the Washingtonbased Center for Strategic and International Studies.

The U.S. officials added that harming the military relationship could make countering Iran, improving Saudi-Israeli relations and resolving other regional issues more challenging. There has been an erosion in some aspects of the two nations' defense cooperation, and officials said it is important that they don't deteriorate further. Otherwise, Saudi Arabia could conclude that Chinese and Russian military support is enough to rely on for defense against the kingdom's top foe, Iran, creating a new alliance with U.S. rivals that would greatly concern the West, the officials said.

U.S. forces have trained their Saudi counterparts, advised them on their military operations and in the past supported Saudi forces in the kingdom's war in Yemen with

arms, refueling and advice. About 3.000 U.S. troops are based in Saudi Arabia.

"On the military side, I can't imagine that the U.S. is going to stop training [Saudi forces because it's not in our interest to not have the Saudis better trained," said Jonathan Panikoff, director of the Atlantic Council's Scowcroft Middle East Security Initiative, a think tank. He added that intelligence sharing also is likely to continue: "Stopping cooper-

### Washington says cooperation with Riyadh is central to combating Iran.

ation there would undermine U.S. national security."

In a statement released on Twitter, the Saudi foreign ministry said the government views its relationship with the U.S. as "a strategic one that serves the common interests of both countries."

The Kingdom also stresses the importance of building on the solid pillars upon which the Saudi-U.S. relationship had stood over the past eight decades," the statement said. These pillars include mutual respect, enhancing common interests, actively contributing to preserve regional and international peace and security, countering terrorism and extremism, and achieving prosperity for the peoples of the region.'

The U.S.-Saudi relationship has been on rocky ground since Mr. Biden took office last year, given his decision to renegotiate a nuclear deal with Iran and his public condemnation of Saudi Arabia as a pariah state.

Mr. Biden's visit to Saudi Arabia this summer signaled his intention to work closely with the kingdom on a range of issues, particularly energy cooperation, despite criticism from some within his own Democratic Party that he was turning a blind eye to the kingdom's human-rights record.

Then last week, the Organization of the Petroleum Exporting Countries and its Russia-led allies, known as OPEC+, agreed to an oil-production cut of two million barrels a day after U.S. public and private pleas that such a move would have serious consequences amid a global energy crisis.

Mr. Biden said afterward that the U.S. would reassess its relationship with the Saudis but didn't provide specifics.

U.S. lawmakers reintroduced a bill to immediately suspend arms sales to Saudi Arabia. And three Democratic legislators introduced a bill that would remove U.S. troops from Saudi Arabia and another 2,000

U.S. troops from the U.A.E. Congressional officials said the bills are unlikely to pass.

P2JW286000-5-A00900-1-----XA

## WORLD NEWS

## U.S. Firms Pull Back In China

Continued from Page One role in operating the factory and developing its manufacturing capabilities, as they bring in expertise on highly technical chip production tools, people familiar with the situation said. If the halt is extended, customers such as YMTC face being cut off from upgrades, maintenance expertise and future technology they need to develop chips.

YMTC, KLA and Lam Research didn't respond to requests for comment.

While the moves might be temporary, they are immediate signs of business disruptions facing Chinese chip makers and U.S. technology suppliers as Washington escalates its efforts to stifle China's emerging semiconductor industry. The U.S. export-control measures, which restrict companies sending chips and chip-making equipment to China, are some of the broadest the U.S. has enacted against China's semiconductor industry.

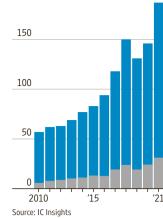
The rules, announced Friday by the Commerce Department, add new license requirements for advanced semiconductors and chip-making equipment destined to a facility in China. Licenses for facilities owned by U.S. and U.S.-allied companies would be decided on a case-by-case basis, while Chinese-owned facilities would face a presumption of denial.

Intel Corp. and South Korean memory-chip maker SK Hynix Inc. on Wednesday said they had secured exceptions to keep their China-based facilities running. Other U.S. and allied firms were expected to receive similar approvals.

Even before Commerce issued the rules, Nvidia Corp. in August warned its business could be impacted by new licensing requirements. But the company, soon after, said it had secured authorization to continue developing some of

### China's integrated circuit consumption

Total Produced in China



the advanced chips in China that could have been impacted, as well as to support its U.S. customers and fulfill orders at a Hong Kong facility until next September.

"I believe the U.S. government intends to force the more advanced production facilities of Chinese companies like SMIC and YMTC to shut down entirely," Gregory Allen, a senior fellow at the Center for Strategic and International Studies, said. "However, the more advanced Chinese production facilities of South Korean and other internationally owned companies will merely be prevented from expanding beyond their current production footprint."

The potential impact on Applied Materials and other leading U.S. chip-industry players underlines how American companies' bottom lines are being increasingly impacted by the Biden administration's bid to curb the growth of China's industry. Chip-industry advocates have long argued that overly broad export controls could end up hurting U.S. industry by depriving it of money to fund innovation and keep ahead of China.

American companies dominate the global chip-production equipment supply chain, with a combined share of 41%, while China's is 5% or lower, according to a Boston Consulting Group analysis.

The Commerce Depart-

ment's measures are far reaching because they restrict the ability of "U.S. persons" to support the development or production of some of the most cutting-edge chips in China.

"U.S. persons" would include those with American passports and green-card holders as well as U.S. companies, said Kevin Wolf, a former Commerce Department official and a partner at Akin Gump Strauss Hauer & Feld LLP.

KLA is known for its inspection and testing equipment, and Lam Research for etching machines. Applied Materials produces tools including those that deposit layers of materials on wafer surfaces. China, the biggest market for the three U.S. chip equipment suppliers, contributes around 30% of the companies' revenues.

Share prices of Applied Materials, KLA and Lam Research have all dropped by more than 20% over the past month.

Beyond the broad new restrictions targeting China's chip sector, the U.S. last week placed YMTC on a list of companies the Commerce Department is concerned about, called an unverified list. Companies on the list could be added to a more restrictive export blacklist if its concerns aren't allayed.

Based in China's central Hubei province, YMTC is a maker of flash memory chips used for storage, and China's largest maker of memory chips overall. It is responsible for about 6% of global memory output, according to market tracker TrendForce.

The company last year began shipping a type of advanced memory chip containing 128 layers, putting it within the scope of new U.S. restrictions. More layers allow a chip to store more data.

YMTC is controlled by the Hubei government and China's national integrated circuit fund. Previously, it was a unit of Chinese chip conglomerate Tsinghua Unigroup Co., which in recent years has been heavily indebted and completed a yearlong asset restructuring in July.

—John D. McKinnon contributed to this article.

## South Korean Company Gets Chip-Restriction Exemption

By Jiyoung Sohn

SEOUL—South Korean memory-chip maker **SK Hynix** Inc. received a one-year exemption from new U.S. restrictions blocking exports of advanced chips and related equipment to China, a sign of Washington's willingness to offer reprieves that help minimize potential disruption to global semiconductor production.

The new rules, which the Commerce Department unveiled on Friday, add new license requirements for advanced semiconductors and chip-making equipment destined for a facility in China.

The U.S. has been working to get allies on board with the restrictions and consider enacting similar ones themselves. The rules had appeared to carve out at least one concession to some of those allies: The Commerce Department would review applications for certain exports to U.S. and U.S.-allied facilities operating in China on a case-by-case basis. Meanwhile, Chineseowned facilities would face a presumption of denial.

The timeline for the granting of the licenses wasn't immediately shared, spreading confusion and concern across the semiconductor industry and helping trigger stock-market falls earlier this week for major chip players.

On Wednesday, SK Hynix became the first chip maker with production sites in China to publicly acknowledge having received a temporary exemption from the U.S. requirements.

SK Hynix said it received a letter from the Commerce Department's Bureau of Industry and Security that ensures the company can supply its Chinabased facilities with the equipment and items needed for one year without meeting additional licensing requirements. That allows SK Hynix to continue its memory-chip production in China. The South Korean company didn't specify when



SK Hynix, the world's second-largest memory-chip maker by revenue, operates production facilities in the Chinese city of Wuxi.

the one-year exemption ends.
The Commerce Department

raid the new export-control rule was just released on Friday and that its Bureau of Industry and Security was "undertaking a vigorous outreach effort to educate those impacted by it, work to implement it, and ensure compliance with it."

The department said it

### The U.S. will let SK Hynix supply China-based chip facilities for a year.

couldn't comment on companyspecific actions, but noted the rules allow for temporary license extensions "to mitigate supply chain concerns without undermining national security and foreign-policy interests."

But one critic of the new controls raised concerns that exemptions could undermine the intent of the new rule.

"If Commerce won't limit the opportunities for foreign companies to earn revenue from China sales, it will never do so for American companies," said Derek Scissors, a

senior fellow at the American Enterprise Institute, a conservative-leaning think tank. "All these license requirements are just paperwork—sales to China will only see a brief pause."

SK Hynix, the world's second-largest memory-chip maker by revenue, operates production facilities in the Chinese city of Wuxi. Output there accounts for about 13% of the world's total production capacity for DRAM, one of two major types of memory chips that go in smartphones, PCs and other devices, according to TrendForce, a Taiwan-based market-research firm.

SK Hynix also owns Intel Corp.'s NAND flash-memory-chip factories in Dalian through a deal struck two years ago, though the operational transfer is continuing and is expected to be finished in 2025. SK Hynix said its Chinese facilities were exempted but didn't name any facility. Later on Wednesday, Intel said that it received an exemption to continue operating at the Dalian factory.

China ranks among the world's biggest markets for semiconductor sales and chipmaking equipment.

—John D. McKinnon contributed to this article.



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### **A10** | Thursday, October 13, 2022

## WORLD NEWS

## Ukraine Strategy Shifts War

Continued from Page One

Rather than directly engaging with the grinding artillery exchanges and tank battles that Russia favors, Ukraine has sought instead to surround Russian forces and cut off supply lines. It has effectively integrated Soviet-era equipment with long-range precision Western artillery and rocket systems to starve its enemy of fuel, ammunition and other supplies

A Russian-built bridge to Crimea critical to supplying Russian forces on the peninsula was seriously damaged in an explosion Saturday that Moscow has blamed on Ukraine. Russian President Vladimir Putin said Monday he would strike back, hours after his forces launched a barrage of missiles hitting civilians and energy infrastructure in Kyiv and other cities. Russia has denied targeting civilians and residential infrastructure.

Mr. Putin has responded to the battlefield setbacks with a politically risky military draft of hundreds of thousands of civilians and appears to be digging in for a long cam-

While Moscow retains a large proportion of its gains from the war's early days, and nobody knows how the conflict will end, Western military historians say Ukraine's battlefield successes will be long studied. They cite parallels to classic military strategies used in major conflicts over the past century.

The Ukrainian advances in the east and the south of the country looked like separate operations but in retrospect they appear to be part of a coordinated plan. "I see them as part of a whole," said Phillips O'Brien, professor of strategic studies at the University of St. Andrews in Scotland.

Ukraine telegraphed its plan to attack Kherson in the



Ukrainian soldiers on a tank in Izyum, Ukraine, on Sept. 18, following the earlier retreat of Russian forces.

south as early as August. In response, Russia reinforced its southern front with thousands of its more experienced troops

Moscow's decision reflected the economic importance of the region, which controls access and water supplies to Russian-occupied Crimea. But moving its troops there meant depleting its forces in the east. The Kharkiv region was left with a single layer of defense, manned largely by poor-performing troops from Russiancontrolled separatist enclaves

Ukrainian forces took advantage of those weakened defenses last month, launching a surprise advance in Kharkiv. Once Ukrainian forces succeeded in punching a hole in the line, they retook thousands of square miles of territory, and the Russians made a chaotic retreat. The attack delivered a victory that boosted morale, as well as Ukraine's standing among its Western

The attack in Kharkiv was made possible by the Kherson operation, Mr. O'Brien said.

Military historians say the rout of Russian forces on the Kharkiv front with a highly Sept. 1 Oct. 11

Areas controlled by Russia
Ukrainian counteroffensives





Source: Institute for the Study of War and the American Enterprise Institute's Critical Threats Project (control areas)

mobile force-known as maneuver warfare—echoes classic examples of the strategy in the 20th century.

François Heisbourg, defense adviser at the Paris-based Foundation for Strategic Research, likened the operation to German Gen. Heinz Guderian's crossing of the River Meuse in Belgium against French forces in May 1940.

The move helped to open the rest of Belgium and northern France to a rapid advance by German armor.

Mr. Heisbourg also cited Israeli Maj. Gen Ariel Sharon's surprise move over the Suez Canal in the 1973 Yom Kippur war, which decisively shifted the war against Egypt and other Arab states in Israel's fa-

While Ukrainian forces moved quickly into Kharkiv, the Kherson front moved slowly. Facing a larger, betterperforming force than in Kharkiv, Ukrainian troops over weeks wore down Russian resistance by striking supply depots and routes across bridges over the Dnipro River, cutting off thousands of Russian troops in and around Kherson.

Having secured a bridgehead onto the eastern bank of the Inhulets River in August, Ukrainian troops began this month to press down the western bank of the Dnipro, threatening a pincer movement around Russian forces and forcing a retreat.

### Agility, arms

Mick Ryan, a military strategist and retired major general in the Australian army. said Ukraine has sequenced its campaigns to great effect.

He described the Ukrainian strategy as one of corrosion, the hollowing out of the physical, moral and intellectual capacity of Russian forces to fight.

Ukraine has used "an indirect approach," Mr. Ryan said, which was first outlined by the 20th century British military strategist Basil Liddell Hart. It seeks to change the balance of force "by draining the enemy's force, weakening him by pricks instead of risking blows." The approach capitalizes on surprise and nimble movement.

"Russians want attrition, they want formations clashing

masse—that's they're used to having the advantage," said John Spencer, chair of urban warfare studies at the Madison Policy Forum. "But the Ukrainians won't give them that."

where

Oleksiy Danilov, secretary of Ukraine's National Security and Defense Council, said Ukraine's introduction from the West of a command-andcontrol model based on the North Atlantic Treaty Organization provided a competitive advantage. "A junior commanding officer has the ability to make decisions depending on the situation and takes responsibility for himself, for his soldiers and for the territory," he said.

Eliot Cohen, a military historian and strategist with the Center for Strategic and International Studies in Washing ton, said the Russians "are capable of making big decisions, but I wouldn't call it an agile military, by a long shot."

Especially not compared with the Ukrainians, he said: "When they see opportunities, they'll take them and, in war, there are always opportunities."

Modern tools of warfare critical to Ukraine include precision long-range artillery and rocket launchers provided by the U.S. and other allies. Together with shared Western intelligence and drones, which help Ukrainian forces to see over the horizon, the advanced weapons, including Himars, have allowed Ukraine to hit supply lines, air-defenses and military bases far behind enemy lines.

The speed and mobility of Western military vehicles—including infantry fighting vehicles and personnel carriers have given Ukrainian forces the upper hand in piercing Russian defensive lines, quickly expanding control and creating fear among enemy

"Without high mobility, we

wouldn't have been able to outplay Russians in terms of maneuvers," said Mykola Bielieskov, research fellow at the Kyiv-based National Institute for Strategic Studies, a government-backed

### Two steps back

Russian failures also helped open the way for Ukraine's advance in the Kharkiv region. When Ukrainian commandos slipped behind enemy lines last month, they were stunned to find Russian troops so unprepared.

At the end of August, drone teams and special-forces squads crept through forests and along treelines to probe for weak points. They were surprised by how relaxed Russian soldiers appeared, barely seeking cover from aerial surveillance. There were only a handful of armored vehicles in front-line villages.

The reconnaissance teams called in artillery strikes using Starlink-a U.S. satellite system providing access to the internet-targeting ammunition depots, vehicles and personnel. Intelligence officers used radio intercepts and other surveillance to locate enemy positions. Drone pilots offered artillerymen a range of targets and sometimes called in strikes directly. Paratroopers and other assault units fanned out through villages, communicating on encrypted radios.

Russia's military often had no internet or cellphone signal, and radios reached only a couple of miles.

Russian forces dug few trenches around positions in the Kharkiv region, allowing Ukrainian forces to quickly push toward occupied towns. In many cases, only land mines slowed the Ukrainians' advance, including those they had laid themselves during their retreat five months ear-

The Ukraine forces advanced roughly 50 miles within days, flushing thousands of Russian troops from northeastern Kharkiv. They avoided street fighting in urban centers, including the cities of Balakliya and Shevchenkove, by seizing villages around them, and then surrounding the Russians in small pockets, forcing them to withdraw.

Many Russians ran, leaving behind equipment as well as their dead and wounded. Unlike the Russians, Ukraine hasn't bombarded cities, avoiding the hostility of residents, whose lovalties may be mixed.

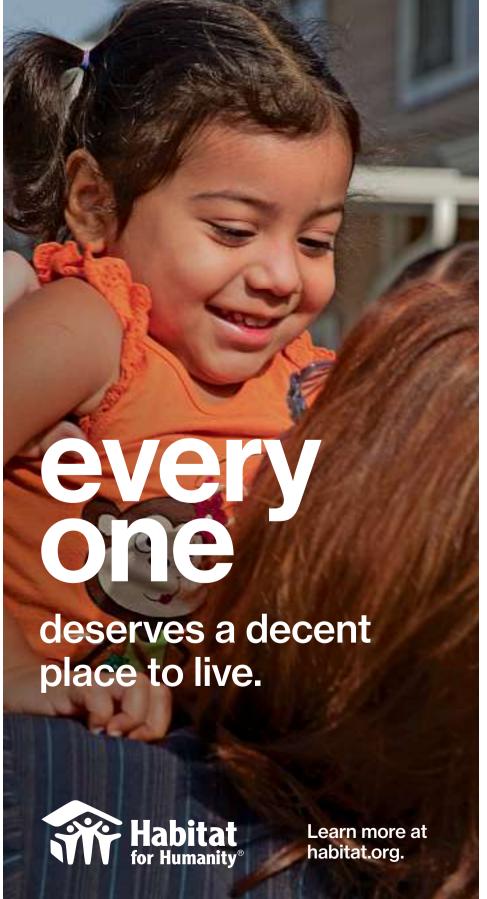
Ukrainian troops pushed ahead to the Oskil River, cutting the main Russian supply lines from the north. Izvum. the largest city in the area, was nearly surrounded. Forces pressed from the south to block the last road out.

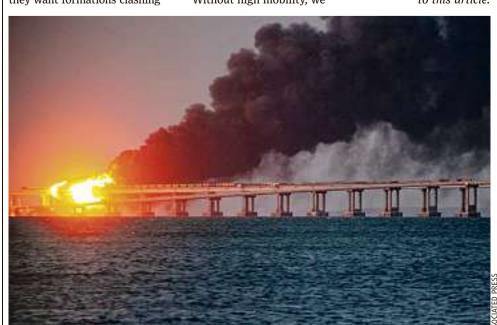
By Sept. 10, the Russians had withdrawn, sometimes commandeering civilian vehicles to escape. Soldiers raced across fields in armored vehicles that got stuck, forcing a retreat on foot. Moscow said it was regrouping forces in the Donetsk region and called the hasty withdrawal an organized operation.

The Russians left behind hundreds of tanks, howitzers and fighting vehicles. Ukrainians got many of them running to use against their former owners.

"We didn't have air superiority, we didn't have superiority in firepower, we just had the proper conditions and exploited lower concentration of Russian troops, their lack of reserves and geography," Mr. Bielieskov said.

–Stephen Kalin and Ian Lovett contributed to this article.





Flames and smoke rising Saturday from the bridge connecting Russia and Crimea.

P2JW286000-4-A01100-1-----XA

## Russia Targets South With Drone Strikes

The missile barrages highlight Kyiv's limited ability to defend population centers

By Isabel Coles

Ukraine said it shot down nearly a dozen drones over the south of the country on Wednesday as the West moved to shore up the country's air defenses in the wake of a barrage of Russian missiles and drones that knocked out energy infrastructure this week.

The attacks heightened concerns as Ukraine Defense Minister Oleksii Reznikov met with U.S. Defense Secretary Lloyd Austin on Wednesday ahead of the latest meeting of more than 50 Western countries under the U.S.-led Ukraine Defense Contact Group in Brussels. Mr. Austin said Russia's recent attacks strengthened the resolve of Kyiv and its partners. "We will continue to boost Ukraine's defensive capabilities," he said.

"The more audacious and explosive payload, brutal Russian terror becomes, the more obvious it is to the world that helping Ukraine to protect the sky is one of the most important humanitarian tasks for Europe in our time," Ukrainian President Volodymyr Zelensky said Wednesday.

A patchwork of Soviet-era air-defense batteries, bolstered by systems rushed to Ukraine by the U.S. and others in the early days of the invasion, have prevented Russia from dominating the skies over Ukraine and hampered its campaign. But Ukrainian cities remain vulnerable to drone attacks, and cruise missiles can overwhelm limited air defenses.

The drones are slow and fly at low altitudes, making them relatively easy to target using conventional air defenses, but Russia has achieved some success by attacking with several at the same time, the U.K.'s Defense Ministry said Wednesday. The Shahed-136 drone has a reported range of 1,553 miles, but it only has a small means it is unlikely to be fulfilling the deep-strike function that Russia probably hoped for, the ministry said.

Ukraine's air defenses shot down nine drones over the southern Mykolaiv region Wednesday, the air force said. Two kamikaze-style drones were later taken out over the Vinnytsia region, according to Serhiy Borzov, the head of the regional military administration.

The recent intensification of missile and drone attacks followed an explosion that damaged the strategic and symbolically important Kerch Strait Bridge that links Russia to the occupied Crimean Peninsula.

On Wednesday, the Federal Security Service, or FSB, Russia's domestic intelligence agency, said it detained five citizens of Russia and three citizens of Ukraine and Armenia, on suspicion of involvement in preparing the blast.

In Brussels on Wednesday, European Union member states backed the creation of a new



A residential building in the city of Zaporizhzhia was hit by a barrage of Russian rockets.

mission aimed at training thousands of Ukrainian soldiers, including in the use of more sophisticated weapons systems the country is now receiving. A final decision will be made by the bloc's foreign ministers Monday.

The EU mission, which also would offer training centers outside of Ukraine, aims to enhance coordination of the different training missions established, and will provide a platform for member states that aren't currently training Ukrainian soldiers to participate. It is expected to begin in the next few weeks.

Meanwhile, Russian forces fired at least seven S-300 missiles on the city of Zaporizhzhia and its outskirts overnight, according to the head of the regional military administration, Oleksandr Starukh.

Rockets also struck an electricity substation in the Dnipropetrovsk region, leading to

the shutdown of a power line feeding the Zaporizhzhia nuclear plant, said Ukrainian state energy company Energoatom. Power was subsequently restored, but the United Nations' atomic agency chief, Rafael Grossi, said the outage highlighted how precarious the situation remains.

—Olya Fokaf, Ann M. Simmons and Yuliya Chernova contributed to this article.

## West to Boost Kyiv's Air Defenses

By MICHAEL R. GORDON

The U.S. and its allies plan to help Ukraine field an integrated air-defense system to protect against Russian cruise missiles, ballistic missiles and aircraft, the U.S.'s top military official said on Wednes-

The initiative marks a new undertaking for the Western nations and is technically ambitious, U.S. officials acknowl-

The effort is intended to help Ukraine better protect itself against the waves cruise and ballistic missiles of the cruise and ballistic missiles at a self-against the waves Russia has unleashed at Ukraine's energy and other infrastructure in recent days.

"What Ukraine is asking for, and what we think can be provided, is an integrated airmissile-defense system," said Gen. Mark Milley, the chair man of the Joint Chiefs of Staff. "That doesn't control all the airspace over Ukraine, but they're designed to control priority targets that Ukraine needs to protect."

Gen. Millev's comments followed a meeting in Brussels of the 50-nation Ukraine Contact Group, which meets to assess Ukraine's defense needs, including Ukraine's request for more help with air defenses.

Though Ukraine has had considerable success in shooting down Russian planes, the missiles Russia fired this week at Ukrainian electrical and other infrastructure highlight Ukraine's difficulty in defending populated centers against missile attacks.



Gen. Mark Milley, Defense Secretary Lloyd Austin and Ukrainian Defense Minister Oleksiy Reznikov

Appeals by Ukrainian President Volodymyr Zelensky and Ukraine Defense Minister Oleksiv Reznikov for more air-defense capability have added to pressure on the U.S.

and its partners to do more. Gen. Milley said the system the U.S. and its partners hope to build would be assembled from a mix of allied systems that can defend against lowaltitude, medium-altitude and high-altitude threats. He didn't say when such a system might be in place.

Experts said the objective was a worthy one but could be technologically challeng-

"It is certainly the right aspiration. Technical integration will be a challenge," said Thomas Karako of the Center for Strategic and International Studies. "The threat is there. The need is there. But this is also something that the U.S. Army has been working on for over a decade, and they are still trying to fully integrate their disparate airdefense elements."

Gen. Milley acknowledged that building the defense

wouldn't be easy. He said such a system could include the I-Hawk, a U.S. Army surface-to-air sys-

tem that was deployed in the

1970s. Gen. Milley said Ukraine had specifically asked for the system and that it was still effective.

Other elements include the German Iris-T, the first of which Berlin is now delivering, and possibly Patriot surface-to-air missiles from allied nations. Israeli airdefense systems, Gen. Milley said, also might be incorporated.

"The task will be to bring those together, get them deployed, get them trained because each of these systems is different," Gen. Milley said. "It's quite complicated from a technical standpoint."

## U.N. Rebukes Putin On Annexation Move

By William Mauldin

United Nations members overwhelmingly rejected Moscow's move to annex four regions of Ukraine, dealing a symbolic blow to Russian President Vladimir Putin and putting 143 nations on the record as not recognizing Russia's latest territorial expansion.

Still, 35 U.N. members abstained from the vote, showing the limits of lobbying by the U.S. and other Western countries that sought to persuade developing economies to reject Russia's moves and isolate Moscow diplomatically.

China, India, Pakistan, South Africa, Thailand and Vietnam were among the countries abstaining.

Russia voted against the resolution, along with Belarus, Nicaragua, North Korea and Syria—a smaller group of supporters than in some previous U.N. votes this year.

The General Assembly can't enforce resolutions on world security. The U.N. Security Council failed to adopt a similar resolution because of a veto by Russia, a permanent member.

The vote shows that more countries—including Moscow's partners in the Middle East are ready to speak out against Russia's broad invasion of Ukraine this year.

A 2014 General Assembly vote on a similar resolution rejecting the annexation of Crimea attracted only 100 votes.

'Nearly eight months into this war, the world has just

demonstrated that it is more united, and more determined than ever to hold Russia accountable for its violations,' President Biden said. "Together with the U.N. General Assembly, we will not tolerate illegal attempts at annexation or the theft of a neighbor's land by force."

Wednesday's resolution "condemns the Russian Federation's organization of illegal so-called referenda in regions within Ukraine's internationally recognized borders and the attempted illegal annexation of Ukraine's regions of Luhansk, Donetsk, Kherson, and Zaporizhzhia."

It also rejects the annexation effort as legally invalid and backs the "de-escalation of the current situation and a peaceful resolution of the con-

Explaining his country's abstention, China's deputy U.N. ambassador, Geng Shuang, said Wednesday's vote doesn't achieve Beijing's goals of promoting de-escalation and avoiding international division.

Minutes later, the U.S. ambassador to the U.N., Linda Thomas-Greenfield, called out countries for seeking peace without rejecting Russia's actions. "Peace does not and has never come from silence," she said before the vote.

Russia's ambassador to the U.N., Vasily Nebenzya, said that residents of the territories in question "do not want to return to Ukraine," but didn't offer evidence.

### WORLD WATCH

NORTH KOREA

### Kim Guides Launch Of 2 Cruise Missiles

North Korean leader Kim Jong Un guided the launch of two long-range strategic cruise missiles on Wednesday, state media said, the latest of a recent barrage of weapons tests.

Mr. Kim stressed that the test was a "clear warning to the enemies," demonstrating the combat capacity of North Korea's war deterrent, according to a Thursday state media report.

The missiles flew for nearly three hours to hit a target about 1.240 miles away, state media said. The South Korean military didn't alert on the launch, as cruise missiles are typically considered part of regular military exercises rather than provocations. This was North Korea's 26th missile launch this year, the most it has tested in a year.

Mr. Kim stressed that the country should "focus all efforts on the endless and accelerating development of the national nuclear combat armed forces," according to state media.

Cruise missiles aren't covered by United Nations Security Council resolutions that ban Pyongyang's weapons activity. Cruise missiles generally fly at lower altitudes and travel shorter distances compared with ballistic missiles, which U.N. resolutions bar the country from launching.



PING PONG DIPLOMACY: Kazakhstan President Kassym-Jomart Tokayev, right, hosted, his Turkish counterpart, Recep Tayyip Erdogan, and other leaders at a regional summit in the capital, Astana, on Wednesday.

The latest missile launch follows two weeks of military drills overseen by Mr. Kim, including missile tests that simulated tactical nuclear strikes against the U.S. and South Korea, state me-

dia reported on Monday. North Korea has conducted several provocative exercises this year, including testing an intercontinental ballistic missile capable of reaching the U.S. main-

-Dasl Yoon

### Suu Kyi's Jail Term **Extended to 26 Years**

A court in military-ruled Myanmar convicted the country's ousted leader, Aung San Suu Kyi, on two more corruption charges Wednesday, with two three-year sentences to be served concurrently. adding to previous convictions that leave her with a 26-year total prison term, a legal official said.

Ms. Suu Kyi, 77 years old, was detained on Feb. 1, 2021, when the military seized power from her elected government. She has denied the allegations against her in this case, in which she was accused of receiving \$550,000 as a bribe from a tycoon convicted of drug trafficking.

Corruption cases comprise the biggest share of the many charges the military has brought against the 1991 Nobel Peace laureate. Ms. Suu Kyi has been

charged with 12 counts in total under the anticorruption act, with each count punishable by up to 15 years in prison and a fine.

Her supporters and independent analysts say the charges are politically motivated and an attempt to discredit her and legitimize the military's seizure of power while keeping her from taking part in the next election, which the military has promised

—Associated Press

**POLAND** 

### Leak Detected in **Pipeline From Russia**

A leak was detected in an underground oil pipeline in Poland that is the main route through which Russian crude reaches Germany, the Polish operator said Wednesday. The operator, PERN, said it detected a leak on Tuesday evening in the Druzhba pipeline about 45 miles from the central Polish city of Plock.

It said the cause of the leak wasn't known. The incident follows leaks late last month in the Nord Stream 1 and 2 gas pipelines running along the Baltic seabed and amid an energy standoff between Russia and the West. A Polish government security

official, Stanislaw Zaryn, said the S leak could be the result of an accident, but that officials were still investigating and looking at another possible explanations. "Different scenarios are possible. We don't exclude any of them," he said.

The Druzhba pipeline, which in Russian means "Friendship," is one of the world's longest oil pipelines and after leaving Russia it branches out to bring crude to points including Belarus, Ukraine, Poland, Hungary, Austria and Germany.

Firefighters were working in cornfields near the village of Zurawice to determine the point of the leak, a firefighters spokesman said.

–Associated Press

## **A12** | Thursday, October 13, 2022

## French Strike Snarls Fuel Supplies

Refinery workers extend their walkout, deepening energy woes fueled by Russian cuts

By Matthew Dalton

PARIS-A strike by French refinery workers has choked fuel supplies nationwide, deepening the country's energy crunch as temperatures drop and Europe grapples with a sharp cut in Russian naturalgas shipments.

The CGT, France's far-left union, decided on Wednesday to continue a strike that has hobbled the country's refining system. The union also moved to extend the strike to a refinery in Donges on the Atlantic coast owned by TotalEnergies SE. The government on Tuesday ordered employees at a fuel depot owned by Esso-SAF ES, a subsidiary of Exxon Mobil Corp., to return to work, invoking rarely used legal powers to end strikes.

The strikes have left more than 30% of French gas stations with supply shortages, officials said. Long lines have formed at stations that have gasoline and diesel, and prices have risen sharply. France has



Striking workers gather at the refinery of oil giant TotalEnergies in Donges on France's Atlantic coast.

released fuel from stockpiles said on Wednesday. onto the market and imported large quantities from refineries in Belgium, but those measures haven't prevented the crisis from deepening.

"The impact of this social conflict, we realize, has become unbearable for too many French," Olivier Véran, spokesman for the government of President Emmanuel Macron,

The strike adds to the energy woes of the French economy. Moscow's decision to cut natural-gas deliveries because of Europe's support for Ukraine has sent French gas and electricity prices soaring. More than half of France's 56 nuclear reactors are offline because of corrosion discovered on pipes that cool the reactor cores and

maintenance, raising fears the country could face electricity shortages this winter.

Mr. Macron's government has capped gas and electricity prices for households, but businesses have been hit hard and the caps are set to rise next year. Meanwhile, strikes at EDF SA. France's state-controlled power company, have delayed the repairs needed to

restart the reactors.

The refinery strikes, though primarily a problem inside France, are pressuring alreadytight supplies of diesel and gasoline across Europe, said Alan Gelder, vice president of refining, chemicals and oil markets with energy consulting firm Wood Mackenzie. The shortages in France have kept European diesel prices elevated despite the drop in crude prices this month.

The CGT and another leftist union, Force Ouvrière, are demanding a 10% increase in salaries to compensate workers for surging inflation. France has seven refineries—four owned by Total and two by Esso. The seventh is owned by Petroineos, a joint venture between PetroChina and INEOS Group, and hasn't been affected by the strike.

The workers are demanding a bigger cut of the large profits earned by Total and Exxon Mobil because of surging global energy prices. Total invited the unions to a meeting on Wednesday but would only allow representatives of the CGT to attend if the union calls off the strike.

Spokespeople for Total and Esso didn't respond to requests for comment.

## Supreme Leader Rails Against Iran **Protesters**

BY SUNE ENGEL RASMUSSEN

Iranian Supreme Leader Ali Khamenei doubled down on his unsupported accusations that the uprising rocking Iran is orchestrated by the country's foreign enemies, as authorities further tightened internet restrictions to make it harder for protesters to spread information about the violent government crackdown.

Meanwhile, strikes by shopkeepers spread to Iran's secondmost populous city, Mashhad, according to social-media posts. The city is a stronghold for the country's hard-liners, including Mr. Khamenei and President Ebrahim Raisi. Mashhad shopkeepers joined strikes under way in the capital, Tehran, and other cities across the country.

The death toll from the uprising has increased to at least 201, including 23 minors, according to the Norway-based Iran Human Rights nonprofit.

Demonstrations began nearly four weeks ago when Iranians erupted in anger over the death of 22-year-old Mahsa Amini in custody of the morality police, which had detained her for allegedly not adhering to the country's strict Islamic dress code. The protest movement quickly expanded into calls to overthrow the Islamic Republic.

The Iranian leadership has shown no sign that it is willing to compromise. Mr. Khamenei on Wednesday repeated allegations that the "scattered riots" were designed by Iran's enemies, likely referring to the U.S. and Israel as in the past.

"As long as the nation is on the path of the Islamic system and religious values, these hostilities will continue and the only way to cure it is to resist," Mr. Khamenei said following a meeting with the administrative Expediency Discernment Council, according to his website.

"The country's officials should also be careful that such issues do not prevent them from their main responsibilities and duties in the domestic and foreign arenas," Mr. Khamenei said.

Following mass arrests in recent weeks, dozens of lawyers gathered in protest on Wednesday in front of Iran's Central Bar association, where security forces used tear gas to disperse them, according to social-media posts.

Large street protests have subsided and the uprising has moved into a new phase marked by protests inside and around universities. throngs of women marching in the streets without the Islamic veil. Workers and merchants have joined the protesters by organizing strikes in the oil sector and the bazaars.





Scan this code for a video on how protests spread to Iran's oil industry.

## Ebola Outbreak Spreads to Uganda's Capital

By Nicholas Bariyo

KAMPALA Uganda—A deadly outbreak of the Ebola virus has spread from rural Uganda into the capital, Kampala, the country's health ministry said on Wednesday, raising further fears of a wider spread of the deadly Sudan strain for which there are no proven vaccines or antiviral treatments.

Nineteen people are confirmed dead from the hemorrhagic fever since Ugandan health authorities announced that a 24-year-old man was killed by the relatively rare Sudan strain of Ebola in September. Nineteen others, including six members of the man's family, also are believed to have died as far back as early August, but were never tested, the health ministry said.

The first Ebola patient in Kampala died at the National Referral Hospital last week, but the death was only confirmed Tuesday, triggering fears that the disease has been silently circulating in the traffic-choked city of more than three million Kampala is a major transit point for regional trade routes to the landlocked economies of Rwanda, Burundi and eastern Democratic Republic of Congo.

Neighboring countries—their healthcare systems battered by the Covid-19 pandemic and economic downturns—have bolstered border controls to stop the virus spreading. Last week, federal officials ordered U.S.bound passengers who have been in Uganda in the past 21 days to arrive at select airports for enhanced Ebola screening.

On Wednesday, health ministers from at least 11 neighbor-



Red Cross workers bury an Ebola victim in the forested farming district of Mubende, Uganda, where the outbreak of the virus began.

ing countries converged in the Ugandan capital for an emergency meeting with the World Health Organization and Africa Centres for Disease Control and Prevention to devise means on

how to respond to the outbreak. "Our primary focus now is to rapidly control and contain this outbreak to protect neighboring districts, as well as neighboring countries," WHO Director-General Tedros Adhanom Ghebreyesus told the meeting. "Although the outbreak is troubling, it is not unexpected."

The death toll of the current outbreak stands at a likely 38 from 73 confirmed and probable cases, the highest in Uganda since the 2000 epidemic that killed 224 people. Although the Sudan strain is considered less lethal than some of the other earlier strains, there is no effective vaccine: Case-fatality rates range from 41% to 100%, according to the WHO.

The outbreak started in the forested farming district of

Mubende, but has spread to six more districts. Deaths of Ebola-like disease were first reported in early August, but were only confirmed as the deadly Ebola in late September, raising fears that there might be more unknown cases.

Most outbreaks in recent years, including the 2014-16 epidemic that killed more than 11,000 people across West Africa, were caused by the Zaire strain of Ebola, which can effectively be contained by anti-

Complicating Uganda's response efforts is the state of the country's health facilities, which are in disarray after more than two years of battling Covid-19. Several frightened patients have fled Ebola treatment centers, while some prefer to seek treatment from traditional herbalists. further spreading the disease.

viral treatments and vaccines.

A team of health specialists led by WHO Executive Director Michael J. Ryan are in Uganda to assist with the response.

### FROM PAGE ONE

## Retirees Move on Campus

Continued from Page One pus, mixing older and younger generations by design. It hasn't gone as well as hoped.

For the kind of money Mirabella's 260 residents are paying, some are asking why they can't get a little peace and quiet.

Some have complained about music that blasts late into the night. The vibration of bass notes has rattled the windows and walls of Sharon Murry's apartment at all hours, the 72-year-old said. "That unrelenting bass thumping sound makes it difficult to concentrate or do anything else," including sleep, she said in a court filing.

Anna Bartholomew, a 25year-old with undergraduate and masters degrees from the university has her own textbook response. "There will be parties. There will be loud noise," she said. "It's ASU."

The university, crowned the

nation's top party school by Playboy magazine in 2002, has since tried to tone down that reputation. Yet students still celebrate Sun Devil football victories—and just anything else-late into the night, whooping it up at local bars and restaurants. One hot spot, Shady Park, is

across the street from Mirabella. Well within earshot, according to a lawsuit from Mirabella and five residents, including Ms. Murry. The seniors are trying to get the popular venue, which plays electronic dance music, to turn down the volume of its outdoor concerts. The suit alleges Shady Park violates nuisance laws, which both the proprietor and city officials

During depositions, the plaintiffs from Mirabella were asked if they liked electronic dance music. They all said no or had never heard of the genre. One said she preferred Christmas music and Broadway show tunes.

One plaintiff, Gail Fisher, said in a deposition that she moved into Mirabella, assuming Shady Park was a small dive that wouldn't disturb her

sleep. "Live music can mean a



trio," she said in deposition. "It doesn't mean boom-boomboom all night."

ASU has sought to share its campus life with lifetime learners. Mirabella residents have taken classes in bioengineering, astrophysics and the history of postwar U.S. conservatism.

Sandy Velotta, 76-year-old Mirabella resident and ASU class of 1968, raved about the professor she had last year for "Great Debates in American Politics & Economics."

At the start of the class, she said she told the professor to treat her like any other student. She did the homework, took quizzes and wrote papers. Even though Mirabella residents don't get grades-or credits—her professor told her at the end of the semester the grade she would have earned. "An A, of course," Ms. Velotta said.

Mirabella, with views of the

city and desert mountains, opened during the pandemic, when most Tempe restaurants and bars, including Shady Park, were closed. Restrictions eased in spring last year, reopening downtown entertainment, including Shady Park, along with its concerts and dancing. Complaints blared from Mirabella. 'We want to be neighbors,

we want to coexist and we just couldn't get them there," Tom Dorough, the executive director of Mirabella, said of talks with Shady Park. "So they really left us no choice but to file a lawsuit.'

Last spring, a judge in a preliminary ruling ordered the venue to lower the volume of its outdoor music and set an 11 p.m. curfew for concerts on Fridays and Saturdays. Shady Park is appealing. Lawyers for the city filed a brief in support of the venue, saying the court's order harms efforts to foster a thriving downtown.

Morgan Olsen, executive vice president at ASU, said he believed a compromise could be reached.

Scott Price, the owner of Shady Park, said he installed a canopy over the outdoor area to shield sounds.

'We have always been open to solutions, but solutions that are based on treating each other with respect," Mr. Price said. "Not simply, 'You're going to do what I say because I'm in a 32-story ivory tower and you're a dive bar.' '

Mirabella residents said they have been unfairly labeled party poopers. Pro-Shady Park protesters

have come with signs saying, "If you don't like it leave" and "Just Buy Earplugs." Edward Kavazanjian, one of

the Mirabella plaintiffs, said in a deposition that earplugs don't help. "It seems like they raise the volume of the music later in the evening, so it often wakes me up," he said. "Yes, I am officially known as either one of the plaintiffs

or one of the grouchy rich old

people across the street." Mr.

Kavazanjian wrote last year to

a friend. "Younger people say, 'What the heck are these people doing in downtown on a college campus?" said 81-year-old David Mills, a Mirabella resident. "I think we have as much to

offer as a young person does." Mr. Mills acknowledged unhappy residents should have expected some noise.

Not everyone is complaining. Leslie Kramer, who lives with her husband, said the camaraderie at Mirabella reminds her of dorm life, when she shared sweaters, dresses and makeup with classmates on her residence floor.

"Now, we're sharing ice machines and walkers," the 74year-old joked.

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THE WALL STREET JOURNAL.

Thursday, October 13, 2022 | **A13** 



## Watching Football Can Cost \$550—in a Las Vegas Casino



**CARRY ON DAWN** GILBERTSON

Las Vegas atching football in a high-end sportsbook here is no penny-ante game. Seats at the massive areas called sportsbooks, where guests can watch and bet on major sporting events, can now cost as much as—and sometimes more than seeing one in person.

Football, a big draw for Las Vegas visitors from fantasy draft parties through the Super Bowl, has fast become a luxury proposition in the gambling and entertainment mecca. Casinos are banking on a souped-up experience to pull in fans who can bet on sports in many parts of the U.S. now.

When I entered the Caesars Palace sportsbook early this past Sunday morning, the host put a bright yellow bracelet on my wrist and ushered me to my reserved seat on a temporary riser more than 30 yards from the early Packers-Giants game airing from London.

I was in the cheap seats, relatively speaking. My spot in the cordoned-off "bleacher" section, nine



Visitors can buy customized poker chips of their favorite college and pro teams.

rows of movie-theater style seats with cupholders, cost \$92, with two tickets for less-than-top-shelf beer. wine or well drinks included. For a lounge chair in the heart of the sportsbook, Caesars was asking \$280 for a seat that also came with a few free drinks. For \$550, fans got unlimited drinks in a VIP section.

Plenty of Las Vegas destinations are asking similar prices, and filling those seats. The Cosmopolitan of Las Vegas required a \$400 minimum spend on food and drinks to reserve a tiny high-top table for four in its sportsbook on college football Saturday and \$600 on NFL Sunday. The spots sold out both days. Mirage was selling VIP seats for \$258 on Saturday and \$323 on Sunday, open bar included.

Top sportsbooks use sophisticated reservation systems to maximize revenue, much as they do with nightclubs and pools. Prices

change based on demand and, in some cases, time of purchase.

A Caesars spokeswoman says the sportsbook started charging for seats several years ago when demand outpaced the supply. The bleacher seats arrived after they proved popular this spring during the NCAA men's basketball tournament, given the sportsbook's "compressed space," she says.

One new downtown Las Vegas hotel, Circa, was designed around the idea that people like watching live sporting events together and will pay a premium to do it.

Circa has a glittering three-story sportsbook, a sports bar it calls the world's longest and Stadium Swim. a sprawling outdoor pool complex with a giant video screen. Chairs with five free drinks started at \$275 last Sunday. Reserved couches required guests to spend a minimum of \$1,000 on food and drink.

"They're not really paying to

watch football," Chief Executive Officer and owner Derek Stevens says. "They're paying for the experience."

Las Vegas sportsbooks were seen as an amenity to get people in the door. Because of the unpredictability of games, casinos viewed sports betting as less of a sure thing than a bank of slot machines, says David Schwartz, a longtime professor and gambling historian at the University of Nevada, Las Vegas. Now, casinos sell football-watching as entertainment to monetize the space. "It's like a nightclub model, where access to the booth or the table is what you're changing for, not so much the music." he says.

Vegas travelers used to free seats for games are having sticker shock. Jeff Shaw, a 40-year-old financial professional from Glendale, Ariz., flew to Las Vegas last weekend to see Notre Dame play Brigham Young at Allegiant Stadium with friends. They paid \$245

■ Sportsbooks such as the one at Circa charge hundreds of dollars for prime seating.

for good seats at the game.

When they looked for places to watch more football during the weekend, Mr. Shaw says Circa charged that much for a seat in its sportsbook that came with a few

free drinks. They passed.
"\$250 just to sit down in a chair, a little crazy," he says. "Before you would just show up and sit down where you like, spend as much as you like or gamble as much as you like, but first come, first served."

Heath Boyd desperately wanted to watch college football at a sportsbook on Saturday but gave up on finding an affordable seat after trying Bellagio, Cosmopolitan and Caesars Palace on a morning walk along the Las Vegas Strip.

The 30-year-old operations manager from Atlanta and his friends were stunned to find prices significantly higher than the \$25 they paid in food and drinks to watch Thursday Night Football at the sportsbook at Resorts World just a couple of days before.

He ended up standing for free at the back of the Caesars sportsbook, but only lasted one game.

A spokeswoman for MGM Resorts, parent of Bellagio, Cosmopolitan and other properties on the Las Vegas Strip, said free seating is available at all its properties in Las Vegas on a first-come-firstserved basis. Reservations are optional for those who want to snag a seat in advance, she said.

Most casinos offer some free seats, but you may have to turn up early. Mr. Stevens says lines start forming at Circa at 4 a.m. on weekends. I found plenty of free seats at the sprawling SuperBook at Westgate Las Vegas just off the Strip on Saturday afternoon, and of course big gamblers get free access to the premium seats at most places.

"What's your time worth?" Mr. Stevens says. "I'm also a guy that doesn't understand Costco. How do you wait in line at Costco for an hour and a half to get [expletive] gas? I don't get that."

Katie Karim, a 30-year-old human-resources manager from Houston, reserved one of Cosmopolitan's high-top tables months ago to watch her Oklahoma Sooners and other college games last Saturday.

She and her husband splurged on a sportsbook table last year to celebrate his 30th birthday and this year invited two couples to join them. They spent the required \$600 on food and drinks between the six of them.

"We're obsessed with college football, so we're going to watch it anyway. You might as well have a reserved spot," she says. "You can leave, you can go to the [gambling] tables, you can take a nap."

The leaving part came in handy during the Oklahoma game. The University of Texas drubbed the Sooners, 49-0. The guys in the group left to play roulette while Ms. Karim and her friend, Robin Rainey Kiehl, ordered lunch for the table. "This is really hard to watch," Ms. Rainey Kiehl said. "They needed to take a break."

## Fewer Fliers to Earn Airline Loyalty Perks

By Jacob Passy

requent fliers grew accustomed to relaxed rules for reaching elite airline status during the pandemic. Now carriers are raising the bar for earning rewards, leaving casual travelers with little recourse

As work and international travel dried up two years ago, airlines made it easier for people to maintain and earn status in a bid to retain their business. That meant the number of customers enrolled in loyalty programs ballooned, making it harder for fliers to attain perks like upgraded seats and lounge access.

"The problem right now is there are too many people with status," says Hal Brierley, chief executive of the Brierley Group, a consulting firm that focuses on customer-loyalty programs.

Last week, Delta became the latest carrier to raise the bar on how much money customers must spend to reach the highest tiers of rewards, following a similar change implemented this year by American Airlines. It is part of an industry shift that travel experts say will lead to fewer travelers qualifying for lovalty programs, adding to the frustrations of air travel for some \argamaand creating a more exclusive expe-Trience for others.

For those with continued elite

status, the changes stand to free up access to first-class upgrades and other perks. Those now at risk of losing status say it might not be worth the hassle to start from scratch building up miles with a new airline. Instead, some fliers say they might be scrambling to spend more on credit cards or buying pricier seats to qualify. "The airlines really want to reward

the people who spend the most with them," says Yi Gao, an associate professor at Purdue University's School of Aviation and Transportation Technology. "That makes their benefits more exclusive." Zac Bowling, who lives in

Alameda, Calif., and works as an en-

far less for work than he did before

gineer for Google, says he travels

Covid and has had status with multiple airlines over the years. Since American changed its frequent-flier program this year to focus on how much people spend rather than how often or how far they fly, Mr. Bowling says he is more inclined to purchase seats in first or business class to reach the spending thresholds to maintain his status. In effect, he's missing out on the perk of free upgrades that

Despite his frustration, Mr. Bowling says he is committed to maintaining his status in hope that he will get to use the perks when he

comes with his status.



Soon travelers will need to spend 33% more on Delta flights to qualify for Gold, Platinum and Diamond Medallion status.

starts traveling again. "It is so much harder to get status from zero that I don't want to lose it," he says.

A spokeswoman for American said the changes were made to simplify how travelers could qualify

Beginning in 2023, Delta travelers will need to spend 33% more on flights to qualify for Gold, Platinum and Diamond Medallion status for 2024. Delta didn't make any changes to its requirements around the number of miles and segments a person must fly.

"We're listening to our customers and constantly looking for opportunities to preserve and elevate the

premium experience that they expect," said Dwight James, Delta's senior vice president of loyalty and CEO of Delta Vacations.

Delta said it would continue to provide a waiver to people with certain co-branded credit cards that frees them from needing to spend a certain amount on flights with the airline. To qualify, cardholders must spend at least \$25,000 during the calendar year if they want to reach Platinum, Gold or Silver Medallion Status. For Diamond Medallion status. they must spend at least \$250,000.

Industry observers say airlines face little risk from updating their

loyalty programs. Business travelers often don't have much say in the flights they choose, Mr. Gao says. Consolidation within the airline industry over the years has reduced competition within many hubs, meaning fliers may not have many other airlines to choose from near where they live. American Chief Executive Robert

Isom said during an earnings call in July that enrollments in the company's AAdvantage loyalty program were occurring at record levels. An airline spokeswoman declined to disclose the precise number.

Delta has more than 100 million SkyMiles members and continues "to see record number of enrollments and participation," Delta's Mr.

James said in an email. The glut of people holding status with the airlines has effectively diluted many of the benefits, frustrated travelers say. The perks of elite status can include early boarding, free seat upgrades, a separate check-in lane, bonus miles. passes to airport lounges and even the right to grant status to a family member or friend.

Chris White, a quality manager for a biopharmaceutical company who lives in Minneapolis, says he regularly encounters Delta flights with as many as 50 people on the upgrade list. "It seems like half the plane gets on whenever they board the Diamond Medallion members," he says.

In anticipation of traveling more this year, Mr. White purchased a Delta Sky Club membership to access Delta's lounges. Often. though, he finds that the lounges are so crowded he would rather sit at the gate.

### **A14** | Thursday, October 13, 2022

## PERSONAL JOURNAL.



IT'S MONDAY, and you're running late. You strap your Meta Quest Pro on your head, you squeeze in around the virtual wood conference table and you smirk at your boss, who isn't pleased with your tardiness. He rolls his eyes, but you don't take him seriously because, well, he looks like a levitating Woody from "Toy Story," except with no cowboy hat...or legs.

When the meeting is over, you're back in your real home office, but three giant virtual computer monitors hover in front of you. On the wall hangs a virtual whiteboard with a motivational quote: TEAMWORK!

Welcome to Mark Zuckerberg's vision of the future of work, where we all convene in the metaverse to collaborate and be productive. Oh yes, to achieve this, we all have to have the company's new \$1,500 face computer.

On Tuesday—nearly a year after renaming Facebook Inc. as Meta Platforms Inc. to signal a focus on virtual worlds—the company announced the Quest Pro. The new virtual-reality headset has substantial imeprovements over the \$400 ≤Ouest 2 headset, which will ≅remain on sale. It's more comfortable. It has better ଞ୍ଜିdisplay quality and new conitrollers. And it tracks your geyes and your face, so your <sup>≒</sup>avatar can now make the gsame funny faces you do!

But this isn't really about fun. Unlike other companies who casually throw around the "Pro" label, **Meta** is reliably aiming this at professionals. The new features are for architects, engineers and designers, along with early adopters who just want to move beyond flat screens. Meta is taking orders starting Tuesday, and esaid the headset will begin reaching customers Oct. 25.

## Meta's VR Headset Shows Different Vision of Work



Meta's new Quest Pro is designed to improve working in the metaverse, especially avatar meetings.

The company will begin direct sales to businesses at a later date.

Meta is even partnering with its metaverse rival on this. Microsoft Chief Executive Satya Nadella joined Mr. Zuckerberg on Tuesday at Meta's Connect event to announce a partnership, which includes bringing Microsoft Teams and Windows 365 to Meta's headsets.

The relationship might seem odd, given that Microsoft has its own mixed-reality HoloLens headset. Yet both companies are eager not to lose out on the next big computing operating system, given what happened with smartphones. Meta, for one, is spending big on this—\$10 billion in 2021.

So, is the Quest Pro the gadget that convinces us all to migrate to the metaverse? Nope. But after spending a few hours trying out the headset, I experienced improvements that suggest this type of computer could be useful in the future.

### What's better

A chief complaint of mine had been the heavy and undistributed weight of the boxy Quest 2 headset. Meta made the Quest Pro a bit smaller, and also distributed its weight better. The curved battery at the back functions as a counterweight.

Plus, this headset doesn't look like you've put a box on your eyes and sealed yourself off from the entire world. Openings allow you some peripheral vision. (You can block the holes if you want—blockers sold separately.)

I won't say these oversize ski goggles made me look any cooler. But everything I saw inside the headset sure looked better.

That's because of "pancake optics," which are reduced in size by 40% while enhancing the visuals. Meta executives rattled off a lot of percentages—75% more contrast, 37% more pixels per inch. All I know is that in demos, things looked less pixelated and more realistic.

Inside the headset, five sensors are pointed at your face so your avatar can now mimic your expressions, including smiling, frowning and blinking. I got to try it out, and it really was like looking in the mirror (my avatar's green skin and pink hair aside). It wouldn't track me sticking out my tongue. That's fortunately something I don't plan on needing in the metavarse.

ing in the metaverse.

And no, during my
demos, the avatars still
didn't have legs. A Meta
spokeswoman had declined
to comment prior to publication. At the event Tuesday, however, Mr. Zuckerberg said legs are coming
soon to Horizon, the com-

pany's VR hangout platform. "Legs are hard, which is

"Legs are hard, which is why other virtual-reality systems don't have them either," he said, explaining that the challenge is that there are no sensors looking at your lower body. The system will use AI to approximate leg position, he added.

\$1,500 Price for Meta's Quest Pro vs.

\$400 for Quest 2 headset

There are certainly privacy concerns—tracking our emotions, constant facial scanning, etc.—with a headset that monitors your eye and face movements. That's why Meta says you'll have to turn this feature on in settings, and then for each app that uses it. If you do, the company says, the images captured during tracking "never leave your device and are deleted after processing."

On the Quest 2, the outward-facing cameras are mostly for safety, and only show black-and-white imagery. On the Quest Pro, these cameras are in color, so it seems more realistic when you look around and even place digital objects. In the demo, I was able to set up a virtual DJ turntable in front of a real window overlooking New York City. You could see how this capabil-

ity may appeal to architects and designers who want to look at 3-D models and renderings in real spaces, rather than on a big computer monitor.

Included with the headset are two new streamlined controllers with rechargeable batteries. They come with a stylus tip that attaches to the bottom. You can flip the controller around and use it as a virtual pen, writing and sketching with more precision.

### What's not better

The Pro's battery only lasts between one and two hours. Yes, an untethered metaverse experience is shorter than the new "Top Gun" movie. It *does* come with a charging cable so you can chain yourself to a wall socket.

I was happy to see the headset also comes with a wireless charging dock, so you can just drop the headset and the controllers down to recharge. But the dock itself takes two hours to charge the headset to maximum capacity. At that rate, you might only squeeze in two decent metaverse meetings a day. OK, maybe that's its best selling point.

The bigger issue is what to do inside the headset. During my meetings, I got to see a few app demos: In "Painting VR," I splattered some virtual paint on a canvas and hung it on the real conference-room wall. In "Tribe XR," a digital DJ platform, I got turntable instruction from a live DJ-fedora, yes, but still no legs. In a game called "Wooorld," I was dropped into a 360degree view of a random street corner and had to figure out my location. (Turns out, Niagara Falls.)

None of those apps would get me back to the metaverse daily. Which raises the same question I have about my corner-sitting, dust-gathering Quest 2: What will I want to do in this headset that I can't on my laptop or my smart-phone?

As I said in my "living in the metaverse" piece, some interactive experiences, especially meetings with other avatars, really show the appeal. The Quest Pro makes it more immersive—you really feel like you're sharing space with another person. But as more colleagues turn up in their offices, and more contacts come to town, it's hard to think about when I'd need a really good virtual alternative.

The Quest Pro reminds me a lot of the early days of laptops and smartphones. Mixed-reality hardware is rapidly improving, and getting into the hands of developers who might soon surprise us with the killer apps.

I just think we're going to need something a little cooler than avatars gathered around three-dimensional Excel sheets for this whole metaverse thing to take off.



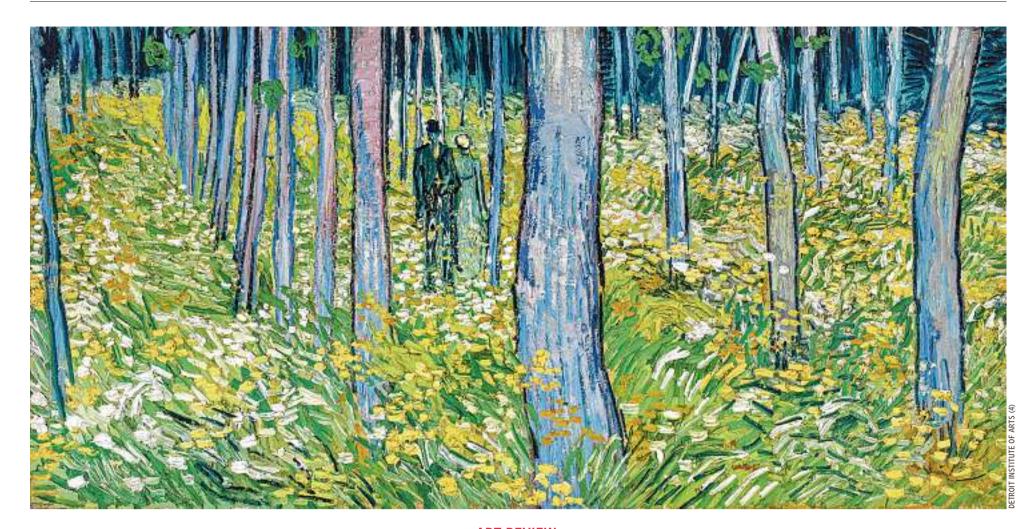


Above, with the Quest Pro, you can see the real world around you in color, and even add virtual stuff to your real space. The device has five sensors pointed at your face so your avatar can mimic your facial expressions, including a jaw drop like this.



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## ARTS IN REVIEW



ART REVIEV

## Tracking an Acquired Taste

By Judith H. Dobrzynski

Detroit incent van Gogh (1853-1890) had been dead for 32 years before any American museum bought a painting by him. While he was famously (if exaggeratedly) unsuccessful in life, by then Europe had long since embraced him. Yet at the landmark 1913 Armory Show in New York—Van Gogh's public debut here, with at least 21 paintings on viewnothing of his sold, and one

critic wrote that Van Gogh had "little if any sense of beauty and spoiled a lot of canvas with crude, quite unimportant pictures." In 1920, when New York's **Montross Gallery** gave him a retrospective, only three of 67 pictures sold, all to one collector. And when in 1921 the Metropolitan Museum of Art presented "A Loan Exhibition of Impressionist and Post-**Impressionist** Paintings," including seven Van Gogh loans, it was condemned by many as degenerate art.

A year later, into this vacuum stepped not an institution in

Featuring 74 artworks by Van Gogh, the show brims with astonishing facts, telling anecdotes and glorious artworks. Visitors, rightly, begin at the Armory Show in a gallery of paintings that appeared there. Nowadays, works like "Undergrowth With Two Figures" (1890), an unusual, verdant forest scene and a prized possession of the Cincinnati Art Museum since 1967, or "Mountains at Saint-Rémy" (1889), with its thick, gnarly, tactile brushstrokes, which was donated to New York's Guggenheim Museum in

Above and below: Van Gogh's 'Self Portrait' (1887) and 'The Dance Hall at Arles' (1888)

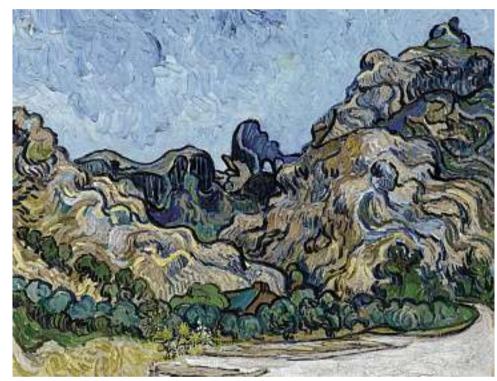
also bought portraits: "Adeline Ravoux" (1890) and "Self-Portrait" (1887). Both, eventually given to museums, are on view.

Retween 1913 and 1920

Between 1913 and 1920, some 85 works by Van Gogh featured in U.S. gallery exhibitions, and slowly more collectors came around—tentatively. Ms. Shaw makes this point in a gallery about the Montross exhibition. Two versions of "The Sower," which capture Van Gogh's spiritual side (both from 1888), hang side-byside. They appealed to Theodore Pitcairn, a wealthy

clergyman. But rather than choosing the now-famous one, which strikingly depicts the sower against a big, bright yellow sun and green sky, with a tree slashing diagonally across the canvas, he selected the more conventional version, which pales in comparison.

So when, in 1922, the DIA bought "Self-Portrait," it was deemed courageous; the museum stood alone for several more years. As the next gallery demonstrates, though, Van Gogh started finding favor at other Mid-



Top and above: Vincent van Gogh's 'Undergrowth with Two Figures' (1890) and 'Mountains at Saint-Rémy' (1889)

bought "Wheat Fields With Reaper, Auvers" (1890) and "Houses at Auvers" (1890).

Van Gogh fever was starting. In 1935, the fledgling Museum of Modern Art in New York presented his first American museum retrospective, with 125 works of art. Irving Stone's sensationalized novel about Van Gogh, "Lust for Life" (1934)-portraying him as a tortured soul—helped attract visitors, and attendance soared. Some 50 museums petitioned MoMA for the exhibition, which traveled, at least in part, to nine additional museums over

the next two years.
Van Gogh had arrived.
Yet only in 1941 did MoMA
buy one of his works—the
masterpiece "The Starry
Night" (1889)—becoming
the first New York museum
to acquire one of his paintings. The Met, should you
be wondering, waited until
1949 to buy something, purchasing both "Cypresses"
(1889) and "Sunflowers"
(1887).

Almost never lent, "The Starry Night" is not in this show, but the Musée d'Orsay has sent "Starry Night Over the Rhône" from 1888, which figures in the movie version of "Lust for Life," starring Kirk Douglas. With that 1956 film, Van Gogh's popularity exploded again, securing his place in America's visual canon—and the end of this story. The final exhibition gallery presents many paintings used in the film or owned by Hollywood figures.

Today, American museums own 125 Van Gogh paintings. Most were donated rather than purchased, including many of the high points on view here: "L'Arlésienne: Madame Joseph-Michel Ginoux" (1888-89); "Lullaby: Madame Augustine Roulin Rocking a Cradle (La Berceuse)" (1889); "The Olive Trees"

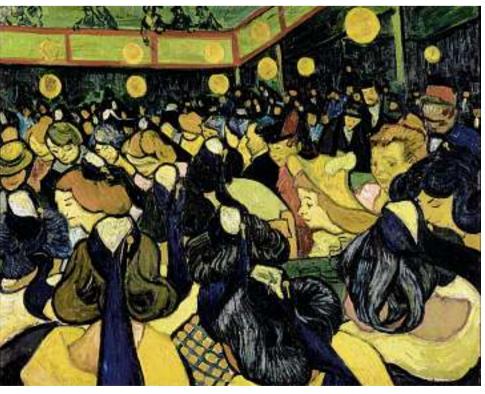
(1889), and "Grapes, Lemons, Pears, and Apples" (1887).

"Van Gogh in America"
plies a strong narrative,
beautifully realized with his
artworks at every step. It
will no doubt be enjoyed for
that dazzling art, but it
should also be appreciated
for showing how museums
and pop culture help shape

artistic taste and for challenging our own willingness to accept the new.

**Van Gogh in America** Detroit Institute of Arts, through Jan. 22, 2023

Ms. Dobrzynski writes about art and culture for the Journal and other publications.



cosmopolitan New York, Philadelphia or Boston, but the Detroit Institute of Arts. With the enlightened purchase of Van Gogh's brushy, brightly hued "Self-Portrait" (1887), it became the first American public museum to own one of his paintings. Now, with "Van Gogh in America," it is detailing, also for the first time, how and when Van Gogh metamorphosed in American eves from a mediocre talent repeatedly lambasted for making "ugly" pictures into a much-loved artistic genius.

1978, are most cherished. At the time, according to exhibition curator Jill Shaw, the most lauded painting was "The Dance Hall at Arles" (1888), a conservative piece resembling a Gauguin. "Mountains" was a curiosity.

"Mountains" was a curiosity.
A few private collectors
were intrigued by Van Gogh.
In 1912, Albert C. Barnes,
who later founded the Barnes
Collection, bought "The Postman (Joseph-Étienne
Roulin)" (1889). Soon, artist
Katherine S. Dreier and lawyer John Quinn, both avid
patrons of avant-garde art,

west museums. In 1926, the Art Institute of Chicago accepted the bequest of four Van Gogh paintings, including his famous "The Bedroom" (1889)—but one of the others turned out to be a fake. Then, in 1932, what is today the Nelson-Atkins Museum in Kansas City, Mo., made the next museum purchase: "Olive Trees" (1889), a vivid picture with twisty strokes and shadows. In 1934, the Saint Louis Art Museum bought "Stairway at Auvers" (1890), while the Toledo Museum of Art



## **SPORTS**

By Tim Brown

he Houston Astros on Tuesday night seemed drawn to the sound of it, gushing from their dugout in twos and threes and then all of them, by the time Yordan Alvarez's walk-off home run landed in the second deck of Minute Maid Park's right field.

For the second time in postseason history, a player had homered with two out in the bottom of the ninth inning to win a game, the first being Kirk Gibson for the Los Angeles Dodgers in the 1988 World Series. For the first time, Alvarez's home run-with two runners on base-had overcome a deficit of more than one run.

"Boy," their 73-year-old manager, Dusty Baker, said afterward, "that was probably one of the most exciting games that I've been a part of. Man, that was unbelievable."

From a four-run deficit only an inning before, against a Seattle Mariners bullpen that for six months routinely banked those sorts of leads, the Astros delivered a reminder that no one else wants to hear—they are still the American League's dominant team.

For five consecutive postseasons, the Astros have played into the World Series or to the verge of it, a powerful half decade for the organization that came with a championship and a dark scandal, neither of which has dulled or damaged their ability to win baseball games. Their AL West title in 2022 was their fifth in six seasons. They won more than 100 games for the fourth time in that span. They became the bad boys of the sport for illegally stealing signs, seemed pretty embarrassed about it for a week or two, and then got back to winning.

On Tuesday, riding Alvarez's 438foot, three-run home run against starter-turned-reliever Robbie Ray,

they began their postseason with an 8-7 win against the Mariners, who are in the playoffs for the first time in 21 years. The Mariners won 90 games in the regular season, swept the Toronto Blue Jays in the wild-card round, scored six runs in four innings against likely Cy Young Award winner Justin Verlander, then spent two hours working toward retiring 27 Astros. Any 27. Against a team that was playing its 74th postseason game since 2017, whose core has seen a lot worse problems than a four-run hole with six outs to go, and that has come to wear the incessant boos on the road with what looks a lot like pride.

The Mariners didn't quite get there.

"Yeah," said Mariners manager Scott Servais, "it's a tough one, no question about it.

He later noted, "They've been in this spot many times before."

That may be part of it. The Astros, like three other division winners, had a five-day layoff



Yordan Alvarez, above, hit a walk-off home run to lead the Houston Astros to an 8-7 victory over the Seattle Mariners in Game 1 of the ALDS on Tuesday.

## The Houston Astros Deliver Reminder of Their Dominance

A walk-off win showed why the AL West champs remain one of baseball's most feared teams



ing on six days' rest. He allowed 10 hits. Then along came an offense in the AL, a bullpen that posted a

that was built into the new 12-team playoff format. Verlander was pitch that was outscored only by the New York Yankees and Toronto Blue Javs 2.27 ERA in September, and a roster-wide vibe that reeks of the sort of confidence that there will be a

pitch in the end that wins it or loses it.

"Well, I mean, the postseason is just an extension of the season, really." Baker said. "[Alvarez] has a very slow pulse rate. I'm sure. He doesn't show excitement too much. He has a high level of concentration, discipline and confidence. You know you got a chance when Yordan comes to the plate, and when he doesn't come through you're almost surprised. I mean, nobody can do it all the time, but he's pretty good at it."

Traded by the Los Angeles Dodgers to Houston six years ago for a 30-year-old relief pitcher, Alvarez, from Cuba, was AL Rookie of the Year in

2019, an All-Star for the first time this summer and finished this season with a career-high 37 home runs in 135 games.

He had a two-run double in the third inning Tuesday, scored on Alex Bregman's home run in the eighth inning and had one strike on him in the ninth when Ray delivered a sinker near the middle of the strike zone.

The city leaned in. Alvarez's parents, Agustin and Mailyn, were in the ballpark. Already four relievers in, Servais had called on Ray, the veteran left-hander with six relief appearances across 229 career games, to face the left-handed hitting Alvarez.

Yeah," Alvarez said, "as soon as I saw him warming up I knew that he was going to come into the game if it came down to me."

Number of

regular-season wins

for the Houston Astros

in 2022.

Then, one of the lovely swings in baseball, the contact and the sound that only just beat that of a crowd turned delirious, bedlam that comes with the baseball this time of year in Houston.

Alvarez called it "one of the special moments that I've had in my career....When

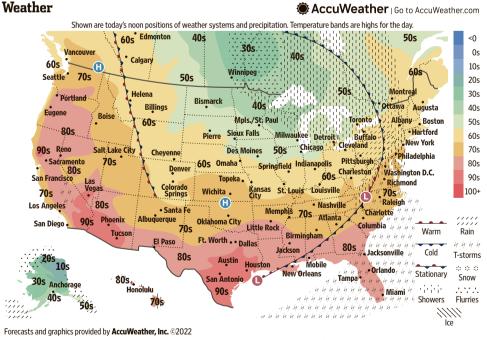
I hit that ball and I saw the ball go obviously I could feel all the fans getting super loud and super excited. And I'm still super excited." Alex Bregman, who

was on deck, was the first to reach Alvarez, who stood at the plate and watched the ball disappear, then flung the bat toward his charging teammates.

"Well," said Bregman, who arrived in Houston before the winning started and bears the wins and the scars, "I just went nuts. I lost my voice, honestly, out there. I was screaming. I wanted to go give him a hug like right after he hit it but he still had to go run the bases."

He added, "We know how important 27 outs are, especially in the postseason."

Game 2 is Thursday.



		Today	,	To	morr	ow
City	Hi	Lo	W	Hi	Lo	W
Anchorage	40	26	S	37	32	S
Atlanta	77	50	t	77	52	S
Austin	93	57	S	93	64	S
Baltimore	70	50	r	68	45	S
Boise	79	45	S	79	45	S
Boston	69	61	sh	68	50	r
Burlington	69	51	r	61	43	p
Charlotte	77	47	t	74	47	S
Chicago	55	34	pc	58	39	po
Cleveland	61	38	sh	60	43	p
Dallas	87	57	S	89	69	S
Denver	68	42	S	74	41	S
Detroit	60	36	sh	57	45	p
Honolulu	87	73	sh	86	72	po
Houston	91	65	S	90	69	S
Indianapolis	63	36	pc	66	46	S
Kansas City	69	40	S	74	48	po
Las Vegas	91	66	S	92	67	S
Little Rock	80	50	S	85	64	S
Los Angeles	79	62	pc	79	65	po
Miami	86	74	t	88	76	t
Milwaukee	54	34	C	53	34	po
Minneapolis	50	33	C	48	34	C
Nashville	72	42	S	81	54	S
New Orleans	84	65	t	84	66	S
New York City	69	57	sh	67	50	po

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St. Louis	68	43	S	72	53	S	London	61	54	r	64	50
Salt Lake City	75	49	S	75	51	S	Madrid	75	53	S	78	55
San Francisco	66	53	рс	69	54	pc	Manila	88	78	t	88	78
Santa Fe	73	41	S	73	40	S	Melbourne	66	52	r	64	47
Seattle	74	52	S	72	52	pc	Mexico City	76	52	pc	76	54
Sioux Falls	54	30	S	56	31	рс	Milan	71	53	рс	70	55
Wash., D.C.	70	52	r	67	49	S	Moscow	48	34	pc	46	35
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		Today			morr		Riyadh	95	67	S	93	67
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Amsterdam	<b>58</b>	52	r	63	51	sh	Rome San Juan	68 88	56 75	r pc	74 88	57 76
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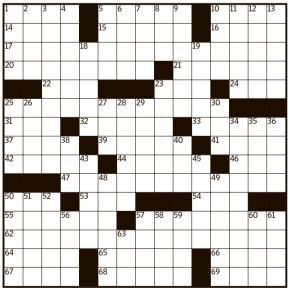
Geneva

Havana

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Hong Kong

### The WSJ Daily Crossword | Edited by Mike Shenk



### N ON THAT? | By Peter A. Collins 25 Pairs in need

of couples

31 Headed for the

32 Choosing rhyme

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37 Off base, in a

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- 14 It's a long story 15 Derisive
- comments 16 Cab, e.g. 17 Starts of Scottish lawsuits?
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- 41 Gainsay 42 Fell off 44 Sporty Chevy 46 Destroyed a
- 24 Pen name?
- 47 Thing heard on Bowie's "Rebel
- Rebel" raga
- ➤ Solve this puzzle online and discuss it at WSJ.com/Puzzles.

### 27 Comic strip scream 1 Queens stadium

2 Nociceptor's detection 29 Seahawk foe briefly 3 Two-by-six

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48 Minute

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50 "Vexations"

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51 Barber work

56 Craft market

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- 18 "Royals" singer
- 19 One of four teams never to make the Super
- Bowl 23 Associated with 25 Warming in
- relations
- 26 "The Music Man setting



63 Bitter brew Previous Puzzle's Solution

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**BOOKSHELF** | By Geoffrey Cain

In America

Making It

The Titanium Economy

(PublicAffairs, 240 pages, \$29)

part. The factory is the hard part."

## **OPINION**

## The Great Migrant Embarrassment



WONDER By Daniel Henninger

drant of federal spending, no issue more the reflects complete collapse of responsible government than the migrant mess. which

now extends from Texas to

Martha's Vineyard. The immigration problem has run in the background of U.S. politics for years as an unsolvable, second-tier issue. Now it has become impossible not to notice. In late summer, an NPR/Ipsos poll asked if there was an "invasion" at the southern U.S. border. A majority of respondents said yes, it's an invasion. If it isn't, "invasion" has no meaning.

### Biden demolished the Democratic Party's moral high ground on immigration.

With the midterms imminent, Democrats are on defense. Arizona Sen. Mark Kelly in a debate with challenger Blake Masters said: "I've spent a lot of time on our southern border, and let me just say it's a mess. It's a chaos. It's crisis after crisis." He called the Biden administration's immigration policies "dumb." Sen. Kelly's polling lead hovers around 4 points.

In the Nevada Senate race, Democratic incumbent Catherine Cortez-Masto has fallen behind GOP challenger Adam Laxalt, who has hit hard on the

Kamala Harris, whom than the open hy-Joe Biden appointed in March 2021 to take on the migrant mess, made a rare trip to Texas last week, appearing in Austin to raise funds and talk about . . . abortion. It's fair to say both the president and vice president have checked out completely on the border.

> The migrant invasion—two million were apprehended southern border in the past year—neared a point of comic relief last

week when two Russian men Vladimir Putin's fleeing Ukraine conscription washed up in a boat on Alaska's St. Lawrence Island, population 1,475, seeking U.S. asylum in the middle of the Bering Sea.

At the edge of the theater district in New York City, a larger fiasco is playing as busloads of migrants arrive from Texas, causing Mayor Eric Adams to declare a state of emergency. The locals in the city of 8.8 million are arguing over where to erect a tent city for the several thousand arrivals. Currently, it's slated for Randall's Island, in the middle of the East River.

Mr. Adams says by year-end the migrants could cost the city \$1 billion (everything costs more in the city former Mayor Mike Bloomberg once called a "luxury product") and he wants Joe Biden to send him money.

Gov. Ron DeSantis had dozens of migrants flown to Martha's Vineyard last month, Democrats and the press said he would face a backlash for "human trafficking." Since then, a Spectrum News/Siena College poll found half of Floridians



Migrants along the Rio Grande in 2021.

support the flights. Consider- abandoned children, illegal miing how Gov. DeSantis survived the media's attempt to tag him for failure on Hurricane Ian, and before that his supposed Covid failure, it may be time to call him Teflon

Those of us who've watched this human torrent, thanks mainly to the steady coverage of Fox News, noticed at some point this year that the migrants had become different. In fact, a new wave has been arriving from Cuba, Nicaragua and Venezuela. In other words, many are now fleeing here from communist dictatorships. Some 200,000 Cubans have come to the U.S. this year, not unlike the people who 60 years ago fled Cuba to help make Florida great.

The current migrant fiasco is a national embarrassment. Those of us who live in the New York City area get to see the Statue of Liberty a lot. It's im-When Florida Republican pressive every time, and nearly all Americans agree on what it represents. With the spectacle occurring daily in the Rio Grande, that core idea of escaping to liberty—altogether unique to America—is getting crushed, maybe irreparably.

Still, it is possible that the

unmovable politics of immigration may have flipped this year.

Republicans been labeled "anti-immigrant," notwithstanding their arguments that it's about the rule of law, not immigrants.

Progressive crats have self-defined as pro-immigrant, but under real-world pressure, that stance turns out to be a fraud. The Biden administration's see-anddo-nothing policy catastrophe-drownings,

grants wandering the nation, a fentanyl-addiction alongside-has emerging shocked most Americans. The sanctuary-city pose has collapsed. Whatever advantage Democrats thought they had on immigration, Team Biden-Harris wrecked it. They claim they inherited the problem. Well, they blew it.

Republicans shouldn't want to be associated any longer with this political gridlock and moral embarrassment. The policies of the Trump years were a thumb in the dike, not a lasting solution. Count me among those who think Mr. Trump knew more was needed.

Democrats in border states may pay politically in November for Mr. Biden's nonfeasance on the migrant surge. But this tragic mess will remain, with most Americans wondering when their political leaders will resolve it in a way that honors the ideas the crisis is dishonoring—the border, the law, liberty and opportunity.

The party in power's failure has handed the next generation of Republican leadership a big opening, if they'll take it.

issues meant that American manufacturers had five days' worth of chips in their inventories—an emergency shortage compared to their 40-day supplies three years earlier. The disaster speaks to the need to rebuild manufacturing

at home, argue co-authors Asutosh Padhi, Gaurav Batra and Nick Santhanam in their fluid, digestible and timely book, "The Titanium Economy: How Industrial Technology Can Create a Better, Faster, Stronger America." The book's premise is that "we are capable of producing a thousand companies akin to Tesla in

By Asutosh Padhi, Gaurav Batra and Nick Santhanam

fter many grueling nights designing and building a

car in "makeshift tents," Elon Musk emerged with a

prescient lesson for Tesla. "The issue is not about coming up with a car design—it's absolutely about the

production system," Mr. Musk said in 2019, during the

unveiling of the car maker's SUV, the Model Y. "You want to

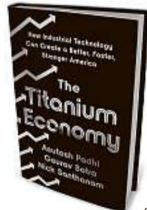
have a good product to build, but that's basically the easy

over the supply chain—to what he's since called "absurd"

heights. His business philosophy was decisive. In February

2022, the federal government announced that supply-chain

Mr. Musk wanted to take vertical integration—or control



every industry." The authors write: "Part of what Musk understood-something that has also been embraced by other industrial leaders—is that the core of the American spirit is about controlling one's destiny.'

Messrs. Padhi, Batra and Santhanam, all current or former McKinsey executives, come from engineering and management backgrounds that give them authority in the field of "industrial technology"—the catchall term for manufacturing,

robotics and hardware production. Despite being whitecollar consultants, they've helped run factory floors, an area not normally associated with McKinsey. Mr. Santhanam, a chemical engineer, came of age as a professional during the dot-com boom, but preferred working with hardware he could touch, later advising semiconductor manufacturers as a McKinsey consultant. Mr. Batra once worked at a consumer-goods plant in India, where a rural town of 20,000 "was supported by the plant." Mr. Padhi worked for industrial companies in Cleveland, where stoic workers innovated without talking about it, unlike in Silicon Valley, which he saw as a land full of talk.

With more companies reshoring their factories from China and elsewhere, the authors argue that American manufacturing is propelling a social and economic force they call the Great Amplification Cycle. Factories set up shop in small American towns, workers learn new skills and take home better paychecks, buying homes and upgrading their lives. Over time, more talented people show up looking for a better quality of life, opening businesses, injecting capital and contributing to local culture.

The authors glide through a succession of breezy out that some industrial-technology firms rival the returns of Facebook and Amazon. Yet the sector attracts less than 1% of venture capital. Trex, a Virginia-based company that uses advanced robotics to recycle plastic bags into construction material, has seen its share price increase by nearly 5,000% in the past decade. With its two factories connected through advanced software, Trex is an example of a successful company replacing the older, static model of the

## anecdotes about 3-D printing, advanced materials and artificial intelligence as applied to manufacturing, and point

central factory.

Supply-chain issues are about more than keeping shelves stocked. 'The American spirit,' the authors remind us, 'is about controlling one's destiny.'

"The Titanium Economy" is best when it brings us outside the superstar cities of Silicon Valley and New York and into prosperous manufacturing hubs in South Carolina, Texas and Indiana. The authors write that "for every Flint, Michigan, that has been infamously devastated by the loss of jobs in the automotive industry, there's a Simpsonville, South Carolina." In the 1970s, Michelin opened a tire plant in Simpsonville, home to 25,000 people, and helped train workers. Since the 1980s, the auto maker BMW, the aerospace firm Collins and numerous other firms have showed up and hired the area's skilled workforce.

Replete with stories of bonanza and fortune, "The Titanium Economy" at times sounds too good to be true, like a McKinsey brochure for clients and investors. Indeed, the authors' McKinsey affiliations sometimes seem to dampen their ability to question the companies they cover. "In terms of governance, diverse board compositions, higher analyst coverage, and changing shares of lowturnover investor profiles all contribute to multiple expansion," the authors write in a cryptic passage. Meanwhile, the ability to explain the market to investors. they add, is "an area where many industrial companies still fall short."

The reluctance to criticize extends to countries where McKinsey has a strong presence. The authors write that the Chinese government is "dedicated to taking the lead" by providing state funds for critical industries. But they never mention that the country, which imports more chips than ever, remains generations behind the American semiconductor industry and is far from its vision of self-

The U.S. government should be more involved with a national industrial strategy, the authors argue. But they gloss over the transformations already under way. They never mention the CHIPS and Science Act, signed into law in August, which includes \$52.7 billion in subsidies to U.S. semiconductor production. Intel CEO Pat Gelsinger called it potentially "the most important piece of industrial policy" since World War II.

This is merely one shift in how American business leaders view homegrown industry. Nevertheless, "The Titanium Economy" is an enjoyable read about an overlooked and underappreciated field and its most successful companies. The timing is right. Americans are waking up to the importance of building resilience at home, rather than outsourcing for an easy price cut.

Mr. Cain is a senior fellow at the Lincoln Network and the author of two books on technology and industry.

### Pelosi Tries to Smile Through November Maybe Mrs. Pelosi is correct poll found 2% of respondents tactical and Democrats will expand said the economy was "excellent" and 15% "good," while their congressional majorities. Maybe Mr. Maloney will easily 34% said it was "only fair" and

he election is less than four weeks away. Now is when the politically desperate typically try to fight despondency with flights of fancy, which might explain House Speaker Nancy Pelosi's optimism on Stephen Colbert's The Late Show" last week.

By Karl Rove

Mrs. Pelosi claimed that beorganization, superior messaghold the House, by winning jority intact." more seats.'

Does one of the nation's toughest, most savvy politicos really think that? Probably not. Since modern political parties emerged between 1818 and 1824, the party in power has gained House seats only twice in a president's first midterm.

It happened in 1934, as President Franklin D. Roosevelt rallied Americans during the Great Depression, and then in 2002, when President George W. Bush's approval ratings were sky-high after the 9/11 attacks.

Mrs. Pelosi isn't her party's only overly upbeat leader. Congressional Democratic Campaign Committee Chairman Sean Patrick Maloney is so confident that last weekend he was fundraising with Democratic expatriates in Paris, Geneva and London. A DCCC chairman would normally make that sort of foreign fundraising trip well before the election, not a month out, especially if, like Mr. Maloney, he personally faced a strong challenger in a newly drawn

win re-election as Democrats strengthen their numbers. And maybe pundits are correct when they suggest "things might be different" this midterm cycle because bad economic news and the presipitiful approval dent's cause Democrats have better numbers don't matter to voters, leaving Democrats with "a ing and more money, "we will real chance" to keep "their ma-

### Any president's party struggles in the first midterms. This year it looks especially grim.

But Democrats face a simple, inconvenient fact: Nothing strategically meaningful is likely to change in their favor before Election Day.

Is inflation likely to decline dramatically this month? If it were, the Federal Reserve would be stopping its interestrate hikes, not raising the target range for the federal-funds rate in anticipation of "ongoing increases." The Energy Information Administration says the price of a gallon of regular gasoline has risen 26 cents nationally in the past four weeks. Because Saudi Arabia ignored U.S. pleas and teamed up with Russia to cut oil production, prices will likely go higher.

Will confidence in the economy rise dramatically before 48% believed it was "poor." Since 2022's first quarter, the percentage saying the economy was good or better hasn't risen over 20%

Will voters suddenly decide they like where President Biden is steering the country? It RealClearPolitics average has Mr. Biden's approval rating at nia and Mandela Barnes in direction at 27%

Will our communities suddenly feel safer? The share of people who told Gallup in March—the month when the firm annually asks about this issue—that they "personally worry" about crime and violence "a great deal" was 53% the highest since 2016.

Will the border crisis suddenly ease? It seems unlikely that Washington will do anything to stem the flow of illegal aliens, given that the borczar, Vice President Kamala Harris, is still insisting that the border is "secure."

The one development that might benefit Democrats is if Vladimir Putin pushes us to a Cuban Missile Crisis moment and Mr. Biden shines despite the dire circumstances. Regardless of party, let's hope such a moment never arrives, in part because I doubt the president would do much shin-

more cash, largely because of their more developed small-November? A Sept. 16 Gallup dollar money machine. But this Schuster, 2015).

advantage enough. Every winning GOP Senate candidate in a competitive race in 2020 was outspent. The question is whether Republicans will have enough funds to reach voters, which depends on donors' generosity in the short time left.

And while pundits are right that Republicans have nominated some knuckleheads. seems improbable when the Democratic Senate hopefuls John Fetterman in Pennsylva-43% and those who think Wisconsin prove that even America is going in the right widely heralded candidates can have very problematic views and records. And debates—relatively rare this year—have provided surprises as Republicans Blake Masters in Arizona and J.D. Vance in Ohio more than held their own in matches this past week.

Abortion won't save Democrats. Not when Gallup finds only 4% of Americans believe it's the most important prob-

My guess is Mrs. Pelosi is wrong. Democrats have more cash but worse messaging. Organization helps her party, but it can't fully offset the electorates' deep-rooted desire for change and a congressional check on a disappointing president's actions. Now would be the time for a Democratic Plan B. though I have no idea what it could be. I doubt Mrs. Pelosi does either.

Mr. Rove helped organize the political-action committee It's true Democrats have American Crossroads and is author of "The Triumph of William McKinley" (Simon &

## Could Virgil Write a Good College Essay?

By Mike Kerrigan

igh-school seniors are furiously feathering final flourishes into their college application essays. Did the prior sentence contain a little alliteration? Yes, it did, but that was easy to spot. As surely as night follows day, the truly great college essays will draw more deeply from the well of literary devices.

"Thanks, professor," says the stressed university applicant. "Alliteration, simile, and metaphor; tell me something I don't already know." I'm happy to, although I can do without (litotes) the sarcasm. You'll appreciate a quick refresher on those arcane techniques you learned in ninthgrade English as the tick-tock

These tips will be more use-

draws onomatopoetically near.

ful to liberal-arts types, those more susceptible to the siren song of excessively florid prose, than their STEM brethren. Looking back on your high-school record, you might

### A refresher course on literary devices for high-school seniors.

be such an applicant if, like me, you're afraid of blood, you consider Punnett square predictions borderline sorcery, and deep down you don't understand why one can multiply but not divide by zero.

Let's start with the obscure of the application deadline techniques that might tempt

you. Unless you're a descenres, or in the middle of things, but at the beginning. Should you try anastrophe, do you think? No, no one but Yoda pulls that off. How about chiasmus; should you try chiasmus? Chiasmus? No, you shouldn't try chiasmus. Or anaphora.

As for better-known devices, eschew irony and satire, not as forcefully as you do clichés—avoid them like the plague—but assiduously. That sort of detached outlook may be the coin of the realm once you're in college, but first you need to get in. And don't resort to hyperbole unless your life depends on it, or to colloquialisms, because—jeez, man, do I have to, like, spell it out?

Flashback and foreshadowdant of Virgil, it's best to be- ing? These techniques are risky gin your essays not in medias unless you're applying to film school and probably aren't worth it even there. If they come across as clunky, you'll have lost your audience in the opening credits. Avoid that other movie cliché, deus ex machina endings. Like vintage late-season episodes of the "The X-Files." they're too clever by half. Don't risk this reaction within college admission offices.

One rule that towers above the rest: None of these devices will work if they aren't part of your natural voice. So relax and simply be authentic, recalling the timeless wisdom of Dr. Seuss: There is no one alive who is youer than you.

Mr. Kerrigan is an attorney in Charlotte, N.C.

**A18** | Thursday, October 13, 2022

## Who Blew Up Britain's Pension Funds?

inevitable after a decade

of too-low interest rates.

ritain's newest parlor game is assigning the hedging strategy now blowing up. This blame for the country's exploding pension funds. Wobbly balance sheets at some of the United Kingdom's A crisis probably was largest defined-benefit pen-

sion managers have triggered a mini financial panic with ripples abroad. The causes of this crisis are worth relating because they may be coming

to a financial instrument near you.

Pensions in particular are blowing up because the funds are highly sensitive to changes in interest rates as they seek to balance assets and liabilities over long time horizons. And the explosion is happening in Britain because defined-benefit pension plans—the most interestsensitive—remain more common in the U.K. than in the U.S. As of 2019 about 35% of Britons enrolled in a private pension were in a definedbenefit scheme, while the U.S. proportion had

As interest rates hit new lows after 2008, Britain's pension funds struggled to keep up. A low discount rate increased the present value of their long-term liabilities while low rates across the economy reduced investment returns. The result was a widening pension-deficit chasm as actuarial calculations warned the funds would never be able to meet their future obligations.

One option was to reduce the growth rate in liabilities, and companies sponsoring pensions have tried to do so. As of 2021, 86% of Britain's defined-benefit plans were either closed to new members or no longer letting members increase future payouts in line with current pay raisesup from 76% of plans in 2012.

Another option was for companies to top-up pension assets with extra cash injections from current operating revenue. Pension contributions of £44.1 billion exceeded normal contributions of £24.3 billion between the third quarter of 2019 and the first quarter of 2022.

But this had substantial economic costs. Some companies couldn't afford it, and the need to fund gaping pension deficits has pushed several into bankruptcy, including venerable department-store chain BHS in 2016. Cash that poured into pension funds also wasn't available for business investment.

All of this explains why pension funds and regulators were so reckless to pursue or allow

strategy—liability-driven investing or LDIwas supposed to offer a way for pension trust-

ees to use derivatives and hedging techniques to better meet liabilities without constant demands for cash from companies.

But LDI strategies are highly sensitive to a rise in in-

terest rates, which reduces the value of some hedges and triggers calls for collateral. Those calls set off the mass selling of gilts that prompted the Bank of England to intervene with bond purchases to stabilize (or rather, manage) long-term interest rates. Fund managers could and should have seen this risk, and many probably did. But they had to cope with ultralow rates, and they heard eminent economists promising that low interest rates and low inflation were here to stay.

What isn't responsible for this panic, by the way, is tax policy. Conventional wisdom now blames Prime Minister Liz Truss's tax-cutting plan, announced on Sept. 23, for the pension blowup. That announcement may have lit a match near the pension bomb's fuse if it momentarily spooked investors, but plenty of other sparks were in the air. A pension crisis was all but inevitable as interest-rate increases created new stresses for hedging strategies.

Blame the Bank of England. The global monetary-policy conceit since 2008 has been that central banks could push interest rates to unprecedented lows and then manage financial fragility via tighter regulation. That's been no protection at all as Britain's highly regulated pension funds struggled to cope with the costs created by the sudden reversal of ultralow rates to fight inflation.

This is a warning as central banks elsewhere belatedly tighten policy. After an extraordinary era of loose money, it's hard to know where the risks will appear. But you can't have incentives to take extraordinary financial risks for so long without casualties. To put it another way, Modern Monetary Theory has been a great financial confidence trick.

Walter Bagehot, the eminent Victorian, warned that the proverbial John Bull can stand many things but he can't stand rates as low as 2%. Neither, it turns out, can John Bull's pension fund.

### LETTERS TO THE EDITOR

### Illinois's Math-and-Reading Embarrassment

Your editorial "Illinois's Shocking Report Card" (Oct. 5) exposes some of the problems with the state's public schools. I was the president of a local surveying and engineering company that employed about 60 people. Many of the jobs required rudimentary math skills. During the interviewing process we would quiz candidates on simple math skills that corresponded to their high-school transcripts. One of the questions was: "2 times x equals 4. What is the value of x?" Some candidates who had completed algebra 1 and algebra 2 could not answer the question correctly.

After this happened several times, I complained to the local high school that it was giving bogus grades and supplying businesses with a bad product. If we in the private sector treated our customers that way, we would no longer be in business. I never received a response from the school. Evidently, nothing has changed in the last 20 years with the education system in Illinois.

TERRENCE P. RUETTIGER New Lenox, Ill.

When I briefly worked as an elementary-school teacher, I got rid of reader groups. The kids always figured out what the names meant: smart, dumb and dumber.

We'd read books together that

would elicit moans when I would close the book and say, "Let's see what happens tomorrow." Someone would always raise a hand and say, "Can we read a little more?" Enthusiasm is the magic bullet.

PEG FISK Lewes, Del.

My wife and I spent most of our careers working for the Chicago Public Schools. There is almost no way a teacher can educate a group of students from poverty-stricken broken homes and have them perform at or above the national average.

The average student in Chicago

Public Schools, and in most schools in Illinois and nationwide, spends a small part of his time in a classroom. Even a faculty composed entirely of awardwinning teachers would have a tough time teaching kids who, once out of school, return to neighborhoods of violence and poverty. Teachers can't go home with their students and ensure they do the homework, get encouragement from parents and older siblings and stay safe.

The focus on woke politics by many teachers unions isn't improving education for poor kids. Nevertheless, socioeconomics, not teachers or unions, is the key variable here.

> THOMAS SHARP Chicago

### Fed Slams the Brakes and Risks Spinning Out

The world has never been as indebted, and credit has seldom been as poorly allocated, as it is today. Yet in his op-ed "Stay the Course, Chairman Powell" (Oct. 6), Jason Furman is surprisingly sanguine that the Federal Reserve isn't inviting a full-blown world financial-market crisis by persisting with its hawkish monetary-policy stance.

The Fed's tightening hasn't yet worked its way through the U.S. and world economies, yet serious strains have already emerged in credit markets, while equity markets have entered bear-market territory.

In China, Evergrande and other Chinese developers have defaulted on their debts. In the U.K., the pension companies have had to be bailed out by a Bank of England intervention in the gilt market. Credit Suisse has run into serious solvency problems.

Emerging-market economies such as those of Russia, Sri Lanka and Zambia have defaulted on their debts and many others are now nearing default.

All of this makes the Fed's persistence with its hawkish policy stance difficult to understand. The Fed is now raising interest rates in 75-basispoint steps when the U.S. economy is showing clear signs of slowing. More troubling, the Fed is now withdrawing market liquidity through quantitative tightening at the unprecedented pace of \$95 billion a month.

With the Federal Reserve belatedly slamming hard on the monetary-policy brakes to regain inflation control, might we be on the eve of another Minsky moment?

High taxes aren't the only thing

driving working people and families

into penury in California. Gasoline

prices are now around \$7 a gallon,

monthly electricity bills exceeding

\$500 are common and water costs

are prohibitive. So are home insur-

ance costs in some areas, due to the

wildfires that our incompetent gov-

ernment allows to turn into destruc-

Our housing costs are some of the

highest in the U.S., driven up by oner-

lest we forget, the cost of food, cloth-

by the high costs of gasoline, electric-

How long will it be before work-

ing families in this state ignore Gov.

Gavin Newsom and his ilk's emphasis

on social issues and handouts and fi-

nally start to focus on the quality of

life being constantly degraded by in-

Mr. Cox was the 2018 Republican

The Green Future of Asphalt

Can't Build Roads Without Oil" (op-ed,

Oct. 6): My company, Oil Mountain En-

ergy, produces asphalt, knowing that

even in the age of electric vehicles we

still will need smooth roads for Teslas

cars will be made from will come from

coke bars, an asphalt byproduct. Even

better, asphalt produces fewer emis-

sions than cement and is recyclable.

to drive on, and the aluminum those

Regarding Jacob Borden's "You

nominee for governor of California.

JOHN H. COX

Founder, Change CA

Rancho Santa Fe, Calif.

competent political leadership?

ous regulations and mandates. And,

ing and services has been driven up

ity, water and housing as well.

tive catastrophes.

DESMOND LACHMAN Senior Fellow American Enterprise Institute Washington

## The FBI's Million-Dollar Dossier

That's what the bureau

offered Steele to prove

his Trump claims. He

couldn't cash in.

he press corps is barely covering special counsel John Durham's latest trial related to his investigation of the FBI's

probe of Donald Trump's 2016 presidential campaign. But the case is underway in Washington, and it has already turned up a million-dollar

Mr. Durham is prosecuting Igor Danchenko, who has ded not guilty to five

counts of lying to the FBI. Mr. Danchenko was the primary source for the infamous dossier compiled by Christopher Steele that alleged collusion between the Trump campaign and Russia. Mr. Steele worked on behalf of the Hillary Clinton campaign and fed his allegations to the FBI in 2016.

Mr. Durham's witness Tuesday was FBI supervisory analyst Brian Auten, who interviewed Mr. Steele in early October 2016 with other agents. Mr. Auten admitted that at that meeting the FBI offered Mr. Steele "up to \$1 million" to prove his explosive claims.

But Mr. Auten says Mr. Steele never received the cash because Mr. Steele couldn't "prove the allegations." Mr. Steele also initially refused to identify his sources. In a September court filing, Mr. Durham disclosed that the FBI was never "able to confirm or corroborate most of [the dossier's] substantive allegations."

The failure of the million-dollar offer should have ended FBI confidence in the dossier. Yet on Oct. 21, 2016, the bureau made the dossier's allegations part of its application for a secret surveillance warrant against former Trump campaign official Carter Page. It did the same in its three subsequent

warrant applications against Mr. Page with the Foreign Intelligence Surveillance Court.

FBI interviews of Mr. Danchenko in January 2017 cast further doubt on the dossier. Yet the FBI stayed mute about its failure to corroborate its claims—even as news about the dossier exploded into public view and disrupted the Trump Presidency. Special Counsel Robert Mueller was also clearly aware of all this, yet he included none of it in his supposedly definitive 2019 report on the Russia tale. He essentially helped cover up the FBI's malfeasance in the collusion probe.

Mr. Durham is using these prosecutions to disclose to the public what really happened. It's a disgraceful episode in FBI history that rivals the worst of the J. Edgar Hoover era. Win or lose in court, the special counsel is doing a public service.

### Why California's Quality of Life Keeps Falling

Regarding your editorial "Gavin Newsom's Stealth Tax Increase' (Oct. 6): Despite the high tax bracket, \$61,214 is hardly upper-middle class in the Golden State. In fact, incomes as much as twice that amount won't get you far in many parts of this too-expensive and mismanaged state.

Poor and lower-middle-class families—one could argue that this encompasses families earning as much as \$150,000 to \$200,000 in much of the state—are paying taxes at rates millionaires and billionaires pay in most other states.

## And the Cuban Missile Crisis

Andrew Michta may need to be reminded of the Monroe Doctrine, the Cuban Missile Crisis and the law of unintended consequences ("Ukraine Needs a Guarantee From NATO," oped, Oct. 6). Bringing Ukraine into the North Atlantic Treaty Organization and guaranteeing its security would be similar to when Soviet Premier Nikita Khrushchev placed missiles in Cuba to secure the Soviet Union's new outpost. America's sphere of influence is the Western Hemisphere, while Russia has a similar sphere.

NATO membership is a bridge too far. There are other measures we can take to punish Vladimir Putin for his invasion of Ukraine short of aggressive military action. Avoiding mutually assured destruction should be top prioritv in our assessment. Arming the Ukrainians and allowing them to defend themselves while employing severe economic measures are as far as the U.S. should go in response to the current situation.

FRED EHRMAN New York

## Ukraine's NATO Membership

### No Anti-Frackers in Foxholes

Regarding Joseph Sternberg's "Germany Finally Says the F-Word: Fracking" (Political Economics, Oct. 7): Just as there are no atheists in foxholes, there will be no climate activists opposing fracking when Germany experiences a cold winter without Russian gas. JOHN BOWLES

Spartanburg, S.C.

Letters intended for publication should be emailed to wsj.ltrs@wsj.com. Please include your city, state and telephone number. All letters are subject to editing, and unpublished letters cannot be acknowledged.

### Pepper ... And Salt

THE WALL STREET JOURNAL

TOM VAN KLEEF

Casper, Wyo.



"It isn't so much inspiration as it is caffeine, anxiety and a deadline."

## How Not to Punish the Saudis

would hurt the U.S.

economy and security.

resident Biden and Democrats in Congress are furious at Saudi Arabia for production, and they're The ideas for revenge

threatening "consequences." The ingenious plan seems to be to tell the Saudis that unless they do what Mr. Biden wants, the U.S. will shoot itself in the head.

The Saudis last week joined OPEC, Russia and other oil producers in cutting their output by two million barrels a day. As the Journal reported this week, Saudi Crown Prince Mohammed bin Salman made the decision despite U.S. entreaties to wait at least until after the November election.

In response, Mr. Biden said Tuesday that it's time to "rethink" the U.S.-Saudi relationship. "I am in the process, when the House and Senate gets back, they're going to have to—there's going to be some consequences for what they've done with Russia," he told CNN.

As far as we can see, this mainly involves hurting the U.S. economy and pushing our erstwhile allies in the Middle East further into the arms of Russia and China. One counterproductive suggestion is for Mr. Biden to throw support behind the so-called NOPEC bill that would let the Justice Department file antitrust suits against the cartel and state-owned oil companies. This wouldn't have much effect on oil prices, but it almost surely would invite retaliation against U.S. companies.

Another dazzling brainstorm, from Rep. Ro Khanna and Sen. Richard Blumenthal, would cut pushing the OPEC cartel to reduce oil off U.S. arms sales to the Saudis for a year. The House defense authorization

bill includes a limit on future arms sales to the Kingdom, and Mr. Biden could urge the Senate to pass it too. But all this would do is deny revenue to U.S. defense contractors

and encourage the Saudis to seek alternative arms suppliers. Saudi Arabia is the largest purchaser of U.S. weapons.

Reps. Susan Wild and Tom Malinowski would go even further and remove all U.S. troops from Saudi Arabia. The U.S. has about 3,000 military personnel in the Kingdom, mainly to assist in maintaining aircraft and Patriot and Thaad missile-defense systems. Genius: Make the Saudis more vulnerable to Iran. We suppose there's a certain insane consis-

tency to these proposals considering how upside-down the Biden energy policy has been for two years. The White House does all it can to discourage U.S. oil production in the name of climate change, but then it begs foreign countries to produce more to reduce soaring gasoline prices. It alienates allies like Saudi Arabia that could produce more, but then courts the dictators who lead Iran and Venezuela so they can sell more oil and have more money to stir anti-American trouble.

Wouldn't it be easier, and better for U.S. interests, to unleash U.S. oil production?

## How the FBI Lets Its Informants Mislead It

By Thomas J. Baker

pecial counsel John Durham's inquiry into the Russia-collusion hoax isn't over. We learned a lot from the trial of Michael Sussmann, despite his May acquittal in the District of Columbia. Mr. Durham's team revealed that Rodney Joffe, a Sussmann associate who was involved in gathering derogatory information about Donald Trump, was also a confidential source for the Federal Bureau of Investigation.

On Tuesday Mr. Durham started making his case against another FBI confidential source, Igor Danchenko, in Alexandria, Va. Whatever the outcome, the trial will reveal more about how the FBI was misled by informants and in turn misused them.

The Russia-collusion hoax resulted from post-9/11 centralization, which upended safeguards.

The use of confidential informants by law enforcement, although a necessary tool, is always fraught with danger. That is why strict oversight is necessary. In the wake of the Abscam cases of the early 1980s, the FBI and Justice Department rigorously re-examined the FBI's use and management of informants and established new guidelines. The informant program was essentially owned by the field office's special agent in charge and administered by a special agent informant coordinator in each office. Levels of review, in the field and then at headquarters, were thus put in place. Occasional missteps still happened; but seldom anything on the scale Mr. Durham is uncovering.

As part of his intelligence-focused centralization, FBI Director Robert Mueller began the "re-engineering" of human sources. By 2007 all previous classifications of human sources—cooperating witness, criminal informant and others—were subsumed into the category of confidential human source, or CHS. A new Directorate of Intelligence at FBI headquarters would manage the program. That made mistakes and abuses harder to catch.

Had the bureau looked more critically at Christopher Steele's information to begin with, there would have been no investigation of the Trump campaign. Had Mr. Mueller, during his turn as special counsel, examined the source of the allegations, his inquiry would have ended there. According to the grand jury's indictment of Mr. Danchenko, the FBI's Crossfire Hurricane team realized early on that he was Mr. Steele's "primary subsource" for the dossier. Although the dossier has long since been discredited, we now know, from a Sept. 13 filing by Mr. Durham, that the FBI made Mr. Danchenko a CHS in March 2017, paid him, and kept him as a CHS until October 2020. Mr. Danchenko is charged with lying to the FBI during an interview about his providing material for Mr. Steele.

As for Mr. Joffe, he turned data from a White House computer server over to a third party, according to a prosecution filing in the Sussmann trial. Mr. Joffe hasn't been charged with a crime, and the Journal reported earlier this week that prosecutors have told his lawyer they don't anticipate doing so.

Still, Mr. Durham is making clear that throughout the Russia-collusion probe and Mueller investigation, the FBI committed misfeasance in its management of informants—let's call them what they are—and malfeasance in the use of the information they provided.

Mr. Baker is a retired FBI special agent and legal attaché and author of "The Fall of the FBI: How a Once Great Agency Became a Threat to Democracy," forthcoming in December.

DAVIE

## Even Science Grants Bow to 'Equity and Inclusion'

By Lawrence Krauss

A merica's largest research funder in physical sciences isn't the National Aeronautics and Space Administration or the National Science Foundation. It's the Energy Department's Office of Science, which gives money to university programs throughout the country and oversees the 10 major national laboratories, from Livermore to Los Alamos.

Its brief includes energy and research into fundamental questions: the structure of matter, the nature of the cosmos, high-energy and nuclear physics with large accelerators, materials physics with X-ray synchrotrons, fusion and advanced scientific computers. And now, social justice.

Starting in fiscal 2023, which began Oct. 1, every proposal responding to a solicitation from the Office of Science is required to include a PIER plan, which stands for Promoting Inclusive and Equitable Research. to "describe the activities and strategies of the applicant to promote equity and inclusion as an intrinsic eleto advancing scientific excellence." In the words of the announcement, "The complexity and detail of a PIER Plan is expected to increase with the size of the research team and the number of personnel to be supported.'

When I read this new requirement, I went back to the last grant proposal from our group—which involved exploring gravitational waves, the early universe, Higgs boson physics, neutrino cosmology, darkmatter detection, supersymmetry and black-hole physics. What does any of this have to do with diversity and inclusion? Nothing.

Scientists will respond to these new demands with boilerplate to the effect that they will make every effort to seek graduate and postdoctoral students from minority communities and encourage new outreach programs. This is lip service at best; it doesn't address true societal issues of inequity. People qualified to work in these esoteric areas have all gone to good graduate

schools and carried out credible research projects. They may be minorities, but they haven't been marginalized. They are thus not appropriate targets for what should be useful societal diversity initiatives.

The extensive DEI bureaucracy at universities has already worked for decades to ensure that no STEM job announcements or hiring can be done without constant supervision to ensure that women and minorities are recruited. But given the strong wording of the new guidelines, existing programs may not be enough. This is worrisome, as university DEI boards have shown a willingness to torpedo job applications whose DEI component is insufficiently extensive or effusive. The new Energy Department review committees probably

won't behave differently.

Are we at a point where the heart of the nation's scientific research enterprise is to be held hostage to ideology? Will the U.S. government refuse to fund major nationallaboratory initiatives to explore forefront fundamental and applied science because scientists show insufficient zeal for fashionable

Besides skewing scientific priorities, this represents an inappropriate skewing of national priorities. There are serious societal inequities, but they run much deeper and include

lack of support for K-12 education, safe housing and child care in inner cities, among other things. Attempting to jerry-rig participation at the highest echelons of science is a waste of time and money.

Scientists, meanwhile, already have precious little time to devote to pure research among the many other demands on their time. Writing grant proposals to support research is an onerous activity, even when they focus on the science.

Forget the Higgs boson and neutrinos. The Energy Department wants to know your diversity plan.

And the new initiative doesn't stop with research. Professional conferences bring scientists together to discuss important science issues. No longer. Now conference organizers will have to spend the bulk of their effort meeting bureaucratic requirements on diversity and "conduct."

"Beginning in FY 2023," the announcement states, "proposals requesting funding to support a conference will require that the host organization of the conference have an established code of conduct or

policy in place that addresses discrimination, harassment, bullying, and other exclusionary practices. . . Applicants will also be required to submit a recruitment and accessibility plan for speakers and attendees. This plan will need to include discussion of the recruitment of individuals from groups historically minoritized in the research community." I've served on numerous nationalconference organizing committees over the years, and attendees at these conferences never raised the issue of discrimination, harassment, bullying or exclusionary practices.

All these new burdens will diminish the integrity and strength of the scientific enterprise in the U.S. In May 2021, when President Biden nominated Asmeret Asefaw Berhe to lead the Office of Science. I wrote in these pages that she didn't seem an appropriate person to lead the office. Her work as a soil biochemist wasn't related to any of the office's major physical-science programs, and she had no experience as a scientific administrator and little experience with the Energy Department itself. She did, however, have extensive experience working on diversity issues.

Mr. Krauss, a theoretical physicist, is president of the Origins Project Foundation and author of "The Physics of Climate Change."

## The Spectacle of Grief Through Media

By Joseph Epstein

f it bleeds, it leads" is an old saying in journalism, meaning that stories about murders, robberies, rapes, hit-and-runs, anything to do with violence, get featured coverage. "If it bleeds, it leads" is still followed in local television news, at least in Chicago, where violence is never in short supply.

A standard opener on the nightly news might involve an innocent child being hit by a stray bullet in the back of his father's car; a policeman, having been fired on first, killing a young black man; or an older Hispanic woman run over by a hijacked car. The stories often feature relatives of the deceased, interviewed through their tears. They usually tell the reporter what a sweet, generous, remarkable person the deceased was. ("She lit up any room she entered.") They affirm that they want "closure," and some plead with the murderer to turn himself in so they can achieve it.

On rare occasions, a reporter will remark that the victim's family is too distressed to be interviewed. But usually they are there, tearing, crying. In some instances I have seen full-out weeping. For the television stations, and for the families of the violently deceased, the once clear distinction between grief and mourning has gone by the board. Under this distinction, mourning was public; grief, which

was deeper and always personal, was exclusively private. One might mourn the death of a great artist, actor, political figure, or athlete. One reserved one's grief for those one knew well and loved.

Grief has now, clearly, gone public. As local television channels have long had reporters specializing in covering the mafia or sports, so they might now have reporters devoted exclusively to grief. With the rise in crime all round the country there is enough of it to go around.

Maybe we shouldn't be watching families weep from the comfort of our couches at home.

That grief has turned public is another victory for the therapeutic culture, whose first commandment reads, "Thou shalt not repress." Today fewer people do. Thus one sees public hugging of a kind once confined to show-biz folk. When athletes lose a game or match, they sometimes break down. Now they also tend to cry when they win. Why hold these emotions back? Release them! The enemy is repression. Let go! Cry!

Closure, a feeling that an emotional or traumatic experience has been re-

solved, isn't all that easily achieved. ("Come to closure"—the phrase suggests nothing so much as the advertising tag line for an expensive spa.) Often, as in the death of a husband or wife, son or daughter, brother or sister, closure isn't readily available. The hope for a satisfying sense of finality to one's loss may never arrive. One has to live out one's days trusting, hoping, that the emotional pain will recede. And if it doesn't, is this really so bad? Isn't it, in fact, natural? Why after all should one wish to forget one's loss?

One doesn't envy the job of television reporters on the grief beat. What questions can you possibly ask? What were you thinking when you learned that your mother was run over on her bicycle? Did you ever think you would lose your son just before he was about to begin college? What, by the way, was your daughter doing out alone at 3:45 a.m.?

Meanwhile, watching someone weep from the comfort of the couch feels intrusive, embarrassing, wrong. Perhaps grief shouldn't be televised. Perhaps we aid these sad spectacles by watching them. Perhaps we should pick up a newspaper, magazine or book and turn off the television set. Perhaps that's all the closure we'll ever get.

Mr. Epstein is author, most recently, of "Gallimaufry: A Collection of Essays, Reviews, Bits."

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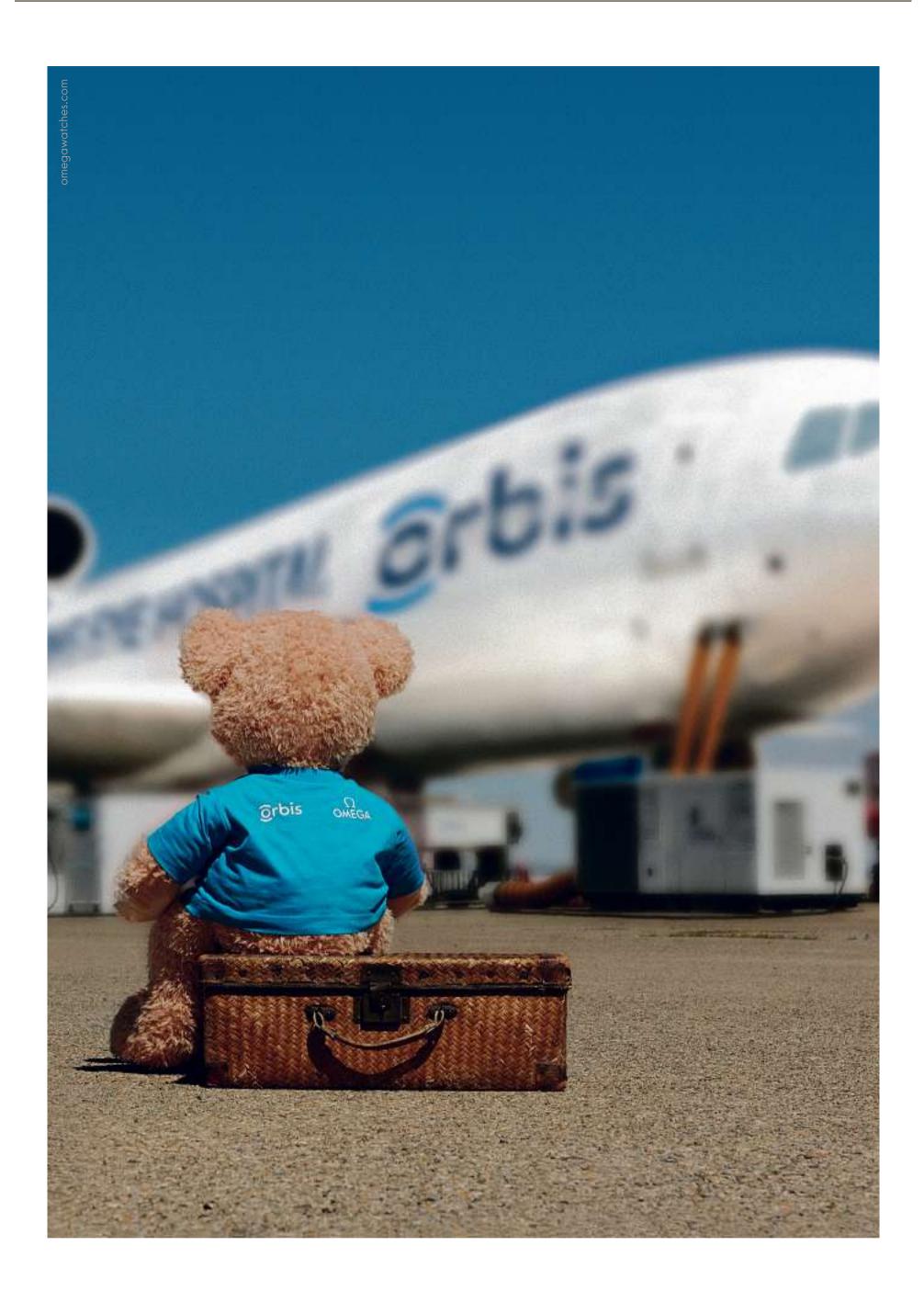
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THE WALL STREET JOURNAL.

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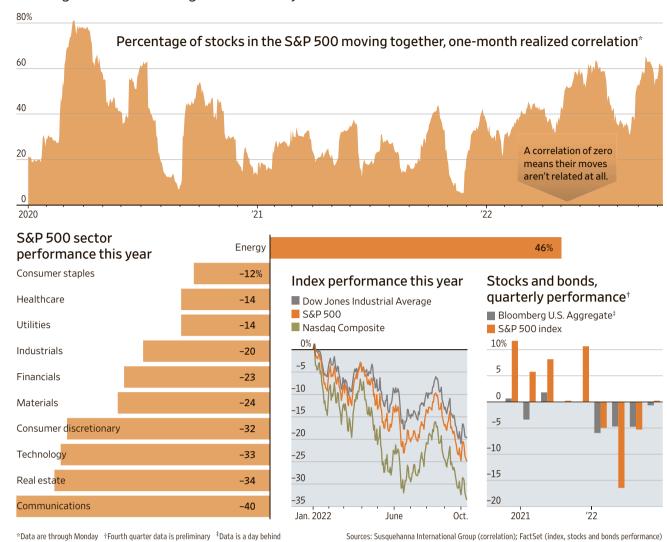
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The lockstep moves between stocks in the S&P 500 are making it harder to navigate an already turbulent market.



## S&P 500 Stocks Move in Lockstep

By Hardika Singh

Shares of everything from technology giants to household-goods companies and utility providers have been trading in lockstep over the past month, a potentially worrying sign to investors trying to navigate a turbulent market.

The S&P 500's one-month realized correlation-a measure of how stocks in the benchmark index have moved in relation to one another over the past 30 daysclimbed to 65.3% on Sept. 13, according to Susquehanna International Group.

across sectors fell in unison at the onset of the Covid-19 pandemic. A correlation of 100% means stocks are all moving together, while a correlation of zero means their moves aren't related at all.

The Federal Reserve's bid to raise interest rates to tame red-hot inflation has shown no mercy in the stock market. The S&P 500 is down 25% in 2022 and off 17% from its summer peak on Aug. 16. All 11 sectors of the index are down over the past month. For the year, only the energy group is in the green.

Stocks have been trading together because investors since hovered are largely focused on macro-consumer-price report for around 60%, levels last seen economic news—and conflict- any signs the cost pressures in March 2020 when stocks ing economic data have led are easing, data that will in-

them to flip-flop their bets on fluence the Fed's path forwhether the Fed will maintain its pace of rate increases.

Markets are being chased all together, which is rare," said Chris Murphy, co-head of derivatives strategy Susquehanna.

Businesses and consumers continue to grapple with rising costs, the U.S. dollar has soared to a 20-year high and oil prices surged above \$100 a barrel after Russia invaded Ukraine. Those factors have sparked declines in everything from stocks to bonds and gold this year.

Next up, investors are looking ahead to Thursday's

ward on rates.

At the start of last week, some investors shifted their bets that the Fed was nearing a pivot after the release of cooler manufacturing and job-openings data. Markets notched their best two-day stretch since 2020. About 90% of the stocks trading on the New York Stock Exchange recorded two consecutive days of gains for the first time since early 2013, according to analysts at Bank of America Corp.

"When you basically shift up your interest rates, that's Please turn to page B10

◆ Stocks slip after Fed

## PepsiCo Price **Hikes Test** Consumers

By Sabela Ojea

PepsiCo Inc. raised prices on its snacks and drinks by 17% on average from last year. Makers of consumer goods are watching to see whether they can do the same without people slamming the brakes on purchases.

Food and beverage companies have been under pressure to raise prices to pass off higher costs for everything from raw materials to labor. In the U.S., food inflation is at the highest level in 40 years, with grocery prices up 13.5% in August from a year earlier. according to the latest data from the Labor Department.

PepsiCo, the company behind brands including Doritos chips, Quaker Oats oatmeal and its Mountain Dew and namesake sodas, said the higher prices are helping it offset cost increases.

On Wednesday, the company said for the quarter ended Sept. 3, organic sales, which strip out currency effects, acquisitions and divestitures, rose 16% from a year

PepsiCo's quarterly revenue, change from previous year



Notes: Excludes currency effects, acquisitions and divestitures; fiscal quarter ended Sept. 3

earlier. All of the gains came from the 17% average price increase. In the June quarter, PepsiCo's prices were up 12% on average from a year earlier.

Chief Executive Ramon Laguarta told analysts on a conference call that PepsiCo is reducing promotions focusing on formats where consumers are less sensitive to price to help boost revenue. Please turn to page B2

## **Investor Steps Up** Pressure on Kohl's

By Lauren Thomas

An activist investor that has long targeted **Kohl's** Corp. is increasing the pressure, calling on the departmentstore chain to make changes to its board or face another proxy fight.

Macellum Advisors GP LLC, which has a roughly 5% stake in Kohl's, is urging the company to replace three or about \$3 billion. more long-tenured directors, minutes, inflation data...... B10 | including its chairman, after

sale talks collapsed this year and as the share price sags, people familiar with the matter said.

Kohl's shares are down by nearly half this year as consumers tighten their wallets, denting sales at retailers such as Kohl's that sell apparel and other discretionary items. The Menomonee Falls, Wis., company has a market value of

The New York hedge fund Please turn to page B2

## U.K. Pension Funds Rush to Raise Cash

By Julie Steinberg

LIVERPOOL, England-Pension funds, used to thinking in decades, have been thrown into real-time firefighting mode by the crisis roiling British mar-

Many U.K. pensions are rushing to raise cash to satisfy collateral calls triggered by rapid moves in usually staid government bonds. Adding to the urgency: The Bank of England's plans to end its emergency bond buying Friday, after which many fear volatility could surge again.

Andrew Bailey, the central bank's governor, reiterated to pension funds on Tuesday that they had just days left to act, warning: "You've got to get this

Pension funds appeared to take him up on the offer. The BOE said Wednesday it bought more than £4 billion, or more than \$4.4 billion, of long-dated bonds, still below the £10 bil-

lion daily maximum but more than in previous days. Yields on 30-year U.K. government bonds, which surged above 5% earlier Wednesday, ended almost flat for the day at 4.8%, a sign that selling pressure had momentarily eased.

Moving so fast is a challenge for pension funds and the ecosystem around them, including trustees, asset managers, investment advisers and banks. The Pensions and Lifetime Savings Association has said many funds want the short-lived program extended at least through month-end.

At the center of all this are a handful of big financial firms that have helped pension funds push into liability-driven investments. The largest players are a unit of Britain's Legal & General Group PLC, Bank of New York Mellon Corp.'s In-Please turn to page B9

◆ Bank of England warning presses markets.

## Peabody, Coronado in Merger Talks

By Rhiannon Hoyle

ADELAIDE, Australia-Peabody Energy Corp. is in talks to combine with an Australian rival that could result in a new global giant worth some \$6 billion, illustrating how the coal-price surge that followed Russia's invasion of Ukraine is transforming the sector's fortunes.

Peabody, the largest U.S. coal producer, is discussing a deal with Coronado Global Resources Inc., which has operations in the U.S. and Australia. In a regulatory filing with the Australian Securities Exchange on Wednesday, Coronado said negotiations were occurring.

As recently as two years ago, Peabody was warning that it might enter bankruptcy protection for a second time, given weakness in coal markets after the Covid-19 pandemic led to a sharp drop in power demand as factories closed or reduced output. Thermal coal is used to generate electricity, but is considered among the dirtiest fossil fuels because it produces higher quantities of carbon dioxide when it is burned.

However, the war in Ukraine



Prospects have turned brighter for Peabody and other coal miners. A Peabody mine in Indiana.

has stoked concerns about energy security and led countries in Europe to try to wean themselves off Russian coal while also seeking alternative supplies of fuel including natural gas. Global coal prices have risen to records in response, with European coal buyers looking as far afield as Austra-

Elevated coal prices resulted in Peabody reporting its highest quarterly pretax earnings in more than a decade in the three months through June and have helped to lift its market value to around \$3.8 billion.

"For the first time as a public company, cash exceeds our debt balance," Chief Executive

Jim Grech said in July.

Shares of Coronado rose 8% to give it a market value of around \$2.19 billion after it confirmed the Peabody talks. It didn't disclose possible deal terms. In May, Coronado said it had held talks with another U.S. coal mining company, Arch Resources Inc., but it wasn't able

Please turn to page B2

### **INSIDE**



**ENTERTAINMENT** Brad Pitt's production company explores options including possible sale. **B3** 



**HEARD ON** THE STREET

U.S. electric-vehicle subsidies both give and take away. **B11** 

## By Meghan Bobrowsky Lawyers for Adam Rosend-

orff, the former Theranos Inc. lab director who testified founder Elizabeth against Holmes in her criminal-fraud trial, asked a judge Wednesday to reject a subpoena from Ms. Holmes as she seeks a new trial.

Dr. Rosendorff emerged as a central witness for the prosecution in a monthslong trial of Ms. Holmes, who was convicted in January on four counts of wire fraud and conspiracy for misleading investors about the blood-testing startup's technology.

Last month, Ms. Holmes

asked a federal judge for a new trial, citing a visit to her California home by Dr. Rosendorff, in which he allegedly expressed regret for his role in her prosecution, according to a court filing.

Witness Disputes Holmes on New Trial Bid

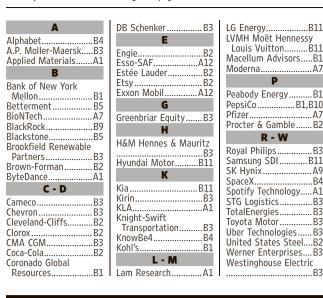
Dr. Rosendorff's lawyers dispute that account, saying in the filing Wednesday that he doesn't recall making those

statements and that they don't accurately reflect how he felt then or now.

"He wanted to be able to forgive her for the pain and suffering her actions have caused in his life," his lawyers wrote in the filing. "He wanted to be able to express his condo-Please turn to page B2 P2JW286000-4-B00200-1-----XA

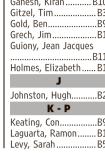
## INDEX TO BUSINESSES

in today's edition. Articles on regional page inserts aren't cited in these indexes



### INDEX TO PEOPLE





.0 3 9 1	McInally, Keith McKinnell, Andy Mulberry, Brian Murphy, Chris Patel, Viraj	B9 B10 B1
1	R	
1	Reece, Nicholas Reyna, Brando Rosenberg, Kerrin	.B10
2	S-W	
9	Shah, Seema Svindland, Paul Teskey, Connor	B3

## Peabody, Coronado In Talks

Continued from page B1 to reach an agreement.

The company considers business opportunities from time to time and we do not intend to comment," a Peabody spokeswoman said.

Peabody, which has Elliott Management Corp. as its biggest shareholder, runs thermal-coal mines in Wyoming, Indiana and several other U.S. states. It also has mines in Australia that export metallurgical and thermal coal. Metallurgical coal is used to produce steel.

declared bank-Peabody ruptcy in 2016 as tumbling prices crushed the American coal industry, sparking similar filings by rivals and widespread layoffs. It exited chapter 11 a year later with a restructuring plan that cut billions of dollars in debt from its balance sheet.

Still, the company continued to face challenges amid a downturn in global coal markets and two years ago, Peabody again warned of a possible default and had to scramble to reach a deal with

A tie-up with Coronado would boost Peabody's production of metallurgical coal. Metallurgical coal accounted for almost four in every five tons of coal that Coronado sold in the first half of this

Coronado owns the Buchanan mine in Virginia and the Logan mine in West Virginia, as well as the idled Greenbrier operation, which is also in West Virginia. In central Appalachia, thermal-coal prices have topped \$200 a short ton for the first time on record. The company also owns the Curragh mine in Australia's Queensland state.

Coronado has similarly recorded a recovery in earnings. In August, the company said it swung to a first-half net profit of \$561.9 million from a year earlier loss of \$96.1 million.

The company said it has taken advantage of trade restrictions on Russian coal to sell its products into Europeinstead of China-for a higher

Higher coal prices masked weaker production and higher operating costs. Coronado said it was paid an average \$292.80 a metric ton for its metallurgical coal, versus

show signs of strains from el-

evated costs, blows to de-

mand and strength in the dol-

4.2% to \$169.39. The com-

pany's shares are down 2%

this year, compared with a

25% decline in the S&P 500.

Inc., wine and spirits maker

Brown-Forman Corp. and

makeup company Estée Lau-

der Cos. are among compa-

nies where executives in re-

cent months have touted

their products being able to

withstand shifts in consumer

spending. "We use the term

affordable luxury a lot, and I

do think spirits is an afford-

able luxury where consumers,

they prioritize that bottle of Jack Daniel's," said Brown-

Forman Chief Executive Law-

son Whiting on an earnings

conference call with analysts

back on spending as a result

of persistent inflation.

Consumers have pulled

Scan this code

for a video on

why CEOs are

Digital marketplace Etsy

Shares in PepsiCo gained

## PepsiCo Tests Consumers

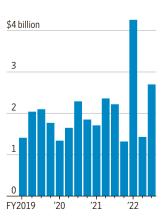
Continued from page B1

"The consumer has very much stuck with our products," said Hugh Johnston, PepsiCo's finance chief. "In a world where there are many struggles and stresses, we are kind of an affordable luxury."

The higher prices, and what Mr. Johnston said has been a better-than-expected consumer reaction to them. are a key reason why PepsiCo again lifted its outlook for sales growth for the year. It now expects organic sales to rise 12% this year, double the original forecast at the outset of the year. The company raised its profit forecast, too.

The results and raised outlook helped lift the share prices of consumer-products companies such as Coca-Cola Co., Clorox Co. and Procter & Gamble Co. on Wednesday. Some investors have been bracing for earnings reports from large companies to

### PepsiCo's quarterly profit

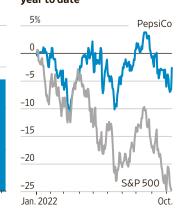


talking about price elasticity. vear to date

Watch a Video

in August.

Share and index performance,



Notes: Fiscal guarter ended Sept. 3; PepsiCo sold Tropicana and other juice brands in 2022 Sources: the company (profit); FactSet (performance)

## **BUSINESS & FINANCE**

## Cleveland-Cliffs, Union Reach Pact

The United Steelworkers union ratified a four-year contract with steelmaking company Cleveland-Cliffs Inc., while rival **United States Steel** Corp. and the union remain divided over wages and other major issues, the union said.

The United Steelworkers, which represents more than 20.000 hourly workers at the two companies, said the contract with Cleveland Cliffs delivers improved wages, insurance and pension benefits, issues that workers are also pushing for in talks with U.S. Steel at a time profits for steelmakers have boomed.

U.S. Steel has offered unionrepresented workers raises that are less than Cliffs's workers will receive, but U.S. Steel has said its workers will be able to earn more than Cliffs's employees from a

profit-sharing program. "We have continued to negotiate in good faith and be-

lieve we will reach an agreement that is best for all," U.S. Steel said Wednesday. Steel prices in the U.S. reached record levels last year as supply-chain disruptions

and depleted steel inventories after the pandemic-related production outages drove strong demand. Cleveland-Cliffs and U.S. Steel are the largest domestic suppliers of sheet steel to the automotive and appliance industries. U.S. Steel's net income in 2021 was \$4.2 billion, swing-

ing from a loss of \$1.2 billion in 2020 caused by the Covidrelated production disruptions. Cleveland-Cliffs earned \$3 billion last year after losing \$122million in 2020.

Union negotiators said they are wary of the good times lasting in the steel industry.

The spot-market price for the hot-rolled coiled steel is \$760 a ton, down 60% from a year ago, according to S&P Global Markets. U.S. Steel this fall idled two blast furnaces at Mon Valley Works and Gary Works in Indiana.

Cleveland Cliffs and the United Steelworkers agreed to a 20% increase in hourly wages over the life of the newly ratified contract, but the union and Pittsburghbased U.S. Steel remain at odds over a similar wage increase that the union is seeking. The companies' old contracts with the United Steelworkers expired Sept. 1.

The union described the latest bargaining sessions with U.S. Steel as making "some progress," but agreements on wages, healthcare coverage costs, retirement benefits and other issues haven't been reached, the union said in a

message to members Tuesday. U.S. Steel said it is offering wage increases of about 14%, with two years of 3% raises and two years of 4% increases, though it expects workers to receive additional compensation from profit-sharing bonuses. U.S. Steel said it expects to pay steelworkers about \$20 an hour in profit-sharing for the time they worked during

"When we do well, you do well," U.S. Steel Chief Executive Dave Burritt said in a message to union members distributed in late September

the quarter ended Sept. 30.

Union negotiators said profit-sharing payments are unreliable. The United Steelworkers said the amounts have varied significantly over the years with long stretches of low or zero payments in 2009, 2010 and from 2014 through 2016 when U.S. Steel lost money in weak steel markets.

## Utilities Tap Data to Improve Renewables

By DIETER HOLGER

Unpredictable weather has long complicated wind and solar-power generation. Now companies are turning to sophisticated computer models to cut costs and produce energy more efficiently despite fluctuations.

Compared with a coal, gas or nuclear plant, wind and solar facilities produce a dizzying amount of data that utilities are struggling to put into use. Each solar panel and each wind turbine sends out data on electricity output, unlike with a traditional power plant.

Utilities can easily say how much electricity they can provide from a coal, gas or nuclear-power plant because they can adjust output. This is far more difficult for wind and solar farms because they rely on sunlight and wind that changes daily, if not hourly. The industry calls this problem intermittency: the uncertainty of how much power renewables will produce throughout the day.

When electricity providers in regions including the U.S. and the European Union deliver too little or too much energy compared with their predictions,



French utility Engie teamed up with Google on a pilot project to predict wind-farm output in Germany, sifting through troves of historical performance data. Engie wind turbines in France.

they often have to pay fees for the inaccuracy, known as imbalance prices in the EU. These fees—which can run into the millions of dollars annually for a large renewables portfolio—are commonplace for wind and solar power. Companies are trying to narrow these costs with better predictions, which are in large part based on weather forecasts and machine learning.

"Having humans that manage all the complexity in real time is becoming impossible. It was possible a couple of years ago when we had less renewables," said Alexandre Cosquer, an executive at French utility **Engie** SA. "With the growth of renewables, it is becoming virtually impossible."

To help sift through the data, utilities are turning to predictive analytics to forecast the output of these vast numbers of solar and wind farms.

Machine-learning computer models examine their previous performance under various types of weather and market condi-

Then they estimate their electricity generation based on the weather forecasts for the coming hours, or even minutes.

## Witness DisputesHolmes

Continued from page B1

lences that her child may grow up without a mother" if Ms. Holmes receives a lengthy prison sentence, they wrote. "And he wanted to be able to draw a line under the nine-year saga of his employment at Theranos, the harassment and intimidation directed at him after he left, his participation in

and his high-profile testimony in the trials in this case."

he showed up at Ms. Holmes's house on Aug. 8 after spending the afternoon in Palo Alto, Calif., and visiting the site where Theranos's building once stood. It had been torn down and a residential complex was built in its place.

Dr. Rosendorff wanted to move on and felt like he needed to have a conversation with Ms. Holmes to gain closure, the filing shows. That led to a phone call to her lawyer and then an unannounced visit to her home.

During the August visit, Dr. Rosendorff didn't speak di-

the subsequent investigation, rectly to Ms. Holmes but to her partner, Billy Evans, who answered the door, according to Dr. Rosendorff's lawyers said Mr. Evans's account of the exchange, which was filed into court record.

> After the visit, Ms. Holmes asked a federal judge for a new trial, saying the former lab director told her partner that he "feels guilty," "that the government made things sound worse than they were" and that "he felt like he had done something wrong," according to court filings. In a subsequent subpoena. Ms. Holmes's lawyers sought emails and communications from the former lab director regarding trial testimony and the prosecution team.

Judge Edward Davila, who oversaw the trial of Ms. Holmes, granted an evidentiary hearing set for Oct. 17 to ask Dr. Rosendorff if his testimony during the trial was truthful and if he felt manipulated by the government.

Dr. Rosendorff's lawyers say the subpoena is oppressive and unreasonable given the scope of the hearing next week.

Ms. Holmes was acquitted of several counts of defrauding patients, the part of the trial for which Dr. Rosendorff's testimony was most relevant.

Her sentencing date, which was previously scheduled for Oct. 17, has been moved to Nov.

## InvestorPressures Kohl's

Continued from page B1 held unsuccessful talks with Kohl's over the past few months to try to come to an agreement to make board changes, the people said. The fund didn't press for other commitments.

Macellum has told the company it will run another proxy fight next year if no settlement is reached, the people said. "We believe there is an urgent need for change now, rather than waiting another eight months for another contested election at the 2023 annual meeting," Macellum Chief Executive Jonathan Duskin wrote in a draft of an open letter to be sent to Kohl's shareholders that was viewed by The Wall Street Journal.

Mr. Duskin wrote in the letter that Kohl's Chairman Peter Boneparth, who took on the role this year after having served on the board since 2008, appears to be "a root cause of the board's poor oversight and insular thinking." He also criticized other long-serving members of the board for having no retail experience.

Kohl's said it was disappointed by Macellum's latest move. "Kohl's board and management have regularly engaged with Macellum during the last two years, including numerous occasions since the annual shareholders meeting and several times this quarter, to hear their perspective," the company said. "These engagements have been unproductive and a distraction from running the business during a challenging retail environment."

The window to nominate board members at Kohl's is open from mid-January to mid-February. Should Macellum move forward with a proxy fight, it would be the third year in a row the fund has targeted the retailer.

Macellum, which has a focus on retail, nominated nine directors early last year-including Mr. Duskin-along with three other activists. In a settlement in April 2021, Kohl's agreed to add two directors from the activists' slate, along with an independent director who received the blessing of the investor group.

Macellum then attempted to take full control of the Kohl's board early this year, nominating 10 directors, and pushed for other changes such as selling some of its real estate and leasing it back. The hedge fund also pushed for a sale of the company outright.

The company launched a strategic review and had attracted suitors, including Sycamore Partners and Canada's Hudson's Bay Co. when shareholders voted on the competing board slates in May. Shareholders re-elected all of the company's 13 directors.

It later entered exclusive talks to be sold to Vitamin Shoppe parent Franchise Group Inc. but called them off in July amid rising interest rates and a choppy economic backdrop. Kohl's said its management team would stay focused on its plan to boost sales by adding Sephora makeup shops to its sites and beefing up its loyalty program.

Franchise Group and Kohl's had been discussing a deal at roughly \$60 a share. Kohl's stock closed Wednesday at \$26.41.

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## **BUSINESS NEWS**

## Philips Recall Leads to \$1.3 Billion Writedown

By Denise Roland

Royal Philips NV said it would write down the value of its sleep and respiratory care business by €1.3 billion, equivalent to \$1.26 billion, as it grapples with the fallout from a huge recall of devices used to treat sleep apnea.

The update came Wednesday as the Dutch healthcare conglomerate warned that worse-than-expected supplychain disruptions would hurt third-quarter sales and profit. Philips said it expected thirdquarter sales to decline 5% to €4.3 billion and for adjusted earnings before interest, taxes and amortization of around €210 million, down sharply from €512 million a year earlier. The company is set to report full earnings later this month.

Shares of Philips fell 12% in New York trading.

Global supply-chain issues stemming from the Covid-19 pandemic, and more recently Russia's war in Ukraine, are affecting industries spanning auto makers to fashion. For Philips, they are hitting when the company is already under

Philips is in the midst of replacing or repairing some 5.5 million breathing-aid machines following concerns that an internal sound-damping foam could degrade and possibly release harmful gases or particles into users' airways, causing irritation or long-term health problems, including cancer. The recall, which began in June 2021, mainly affects so-called CPAP and BiPaP machines, which are used to treat sleep apnea, although it also concerns some ventilators.

That recall has caused considerable anxiety among users, and prompted questions from the U.S. Department of Justice. Philips said Wednesday that the sleep business writedown included its latest assumptions relating to the size of a potential settlement currently being discussed with the Justice Department. Chief Financial Officer Abhijit Bhattacharya said Philips couldn't speculate on the outcome, content or timing of any agreement.

Before Wednesday's writedown, Philips had set aside €890 million to deal with the issue. That provision didn't include any potential legal costs.

The scale of the recall means that more than a year on, many users are still waiting for their new machines. Mr. Bhattacharva said that Philips had so far produced 3.8 million new or repaired devices and expected to ship around 90% of all requested replacements by the end of the

Meanwhile, sleep apnea sufferers have been forced to choose between using a device that could cause them harm or forgoing a treatment that has been shown to reduce their risk of long-term health issues such as high blood pressure, stroke, diabetes and heart

problems. Those worries were exacerbated when the Food and Drug Administration raised concerns that the replacement foam, made from silicone, also could release harmful gases. Philips says that additional tests on that foam, as requested by the agency, are un-

The company said in June that subsequent tests by independent laboratories on the DreamStation One, a CPAP machine that accounts for around two-thirds of all recalled devices, found that it didn't emit harmful levels of gas or small

particles into the airways. Philips says visible foam degradation occurred in a small minority of machines, with a higher rate in machines that have been cleaned with ozone, a practice that Philips doesn't recommend. It is yet to be known, though, whether larger pieces of foam could get into airways and harm users in such cases, says Philips. Tests on this, and on other devices, are continuing, the company says.

## Brad Pitt's Company Weighs Sale

By Jessica Toonkel

Brad Pitt's Plan B Entertainment is exploring strategic options including a possible sale of all or part of the company, according to people familiar with the situation, following a wave of similar deals involving independent production firms.

The company, whose credits include Oscar-winning films such as "12 Years a Slave" and "Moonlight," has retained boutique investment bank Moelis & Co. to explore a deal, the people said. There is no guarantee that the discussions will result in a transaction.

Plan B is the latest in a string of production companies looking to capitalize on the robust appetite for fresh content in Hollywood, sparked partly by a boom in streaming services over the past few years. There has been a flurry of deals, especially involving production companies affiliated with big stars. Candle Media, the private-

equity-backed entertainment company run by former Walt



Plan B Entertainment, whose credits include '12 Years a Slave', has retained Moelis & Co. to seek a deal.

Disney Co. executives Kevin Mayer and Tom Staggs, last year said it was acquiring actress Reese Witherspoon's Hello Sunshine, the production company behind "The Morning Show" on Apple TV+. That

deal was valued at around \$900 million.

Candle Media's other deals include purchasing a minority stake in Will Smith's and Jada Pinkett Smith's entertainment

RedBird Capital Partners. an investment firm specializing in sports media, last year led a consortium that took a minority stake in NBA superstar LeBron James's entertainment firm, SpringHill Co. In

July, veteran entertainment executive Peter launched North Road, a new entertainment company, with the goal of acquiring more content companies.

The streaming industry's momentum has slowed somewhat this year, especially in the mature U.S. market, with No. 1 player Netflix Inc. posting subscriber losses in the past two quarters. At the same time, mergers and economic pressures are propelling costcutting efforts at several big entertainment companies. Though spending on content is expected to remain robust, the various headwinds in Hollywood could damp valuations for production companies.

Plan B, which is run by Mr. Pitt and film producers Dede Gardner and Jeremy Kleiner, has been involved in a number of critically acclaimed movies. Some of its recent projects include "Women Talking," a religious drama scheduled for theatrical release later this year, and the Marilyn Monroe biopic "Blonde" on Netflix.

## Toyota Opens Plant in Myanmar

By RIVER DAVIS

TOKYO—**Toyota** Motor Corp. said it has begun producing cars at a new plant in Myanmar that had been on hold after the country's military seized power in a coup

Toyota began assembling one or two Hilux pickup trucks a day at its plant in Yangon last month, a spokeswoman for the Japanese auto maker said Wednesday. She said Toyota wanted to contribute to the industrial development of Myanmar and the livelihood of local employees and their families.

The car maker's decision to begin production in Myanmar highlights a divide among foreign companies over whether to withdraw from the country, whose elected government

was ousted in February 2021. As of the beginning of this year, close to two dozen major foreign companies had decided to suspend business operations in Myanmar, including energy giants Chevron Corp. and **TotalEnergies** SE and Japanese beer maker Ki-

rin Holdings Co., according to

the World Bank. Toyota had

previously been included on

that list. Companies suspending operations have cited shareholder pressure and a worsening human-rights situation, among other reasons. Some activists have pushed companies to pull out of Myanmar to

tarv junta. Human-rights groups say more than 2,300 people have been killed since the coup, and more than 12,000 people are

isolate or bankrupt the mili-

in detention. Military authorities executed four male prisoners, including two wellknown democracy advocates, earlier this year.

Other companies including clothing retailer **H&M Hennes** & Mauritz AB have said they intend to keep doing business in Myanmar. H&M has said it is mindful that many people in Myanmar rely on international companies for their livelihood.

Human Rights Watch, one of the groups monitoring the situation in Myanmar, doesn't believe all companies must exit the country but thinks they should make sure they aren't doing business with junta-owned conglomerates, said program officer Teppei

"If they want to contribute to the development of Myanmar, respect for human rights needs to be at play as well," Mr. Kasai said. Toyota spokeswoman Shino

Yamada said the car maker's business in Myanmar-including parts imports, manufacturing and sales—isn't directly related to state-owned and military-affiliated companies.

Toyota first announced plans to build a \$53 million factory in the Thilawa Special Economic Zone in Myanmar's biggest city, Yangon, in 2019. At the time, it said it planned to produce around 2,500 Hilux pickup trucks each year.

Toyota's plant was originally scheduled to begin operation in February 2021, the month of the coup. It said it delayed the opening because of the political changes and Covid-19 but now believes the situation in Myanmar is more stable.

## Matchup Highlights Nuclear Revival

By JENNIFER HILLER

A deal by Brookfield Renewable Partners and Cameco Corp. to buy nuclear-services firm Westinghouse Electric Co. is the latest sign of revival in the nuclear-power industry after years of decline.

The matchup would create something of a Western nuclear powerhouse, pairing a key nuclear-power service provider with the largest publicly traded uranium company and one of the world's biggest owners of wind and solar projects. The transaction is a bet that nuclear will play an important role in the energy transition away from fossil fuels. Brookfield and Cameco announced the deal Tuesday. saying the total enterprise value for Westinghouse is roughly \$7.88 billion.

Nuclear power has been in retreat globally, with more projects closing than opening But a push for carbon-free electric power along with nuclear's ability to produce around the clock have prompted a broad rethinking of the technology. Russia's invasion of Ukraine has also exposed the fragility of the nuclear-fuel supply chain, in which Russia is a major player.

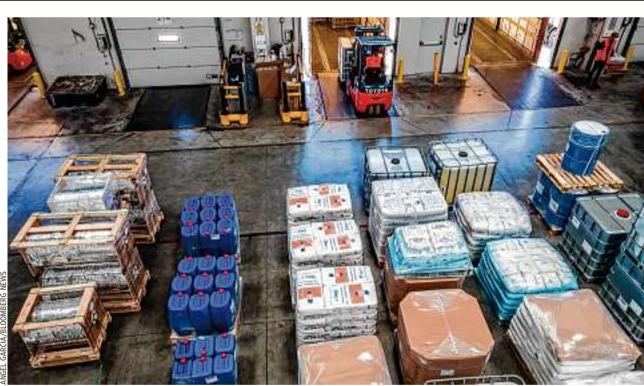
Connor Teskey, chief executive officer of Brookfield Renewable Partners, said the same themes that have been driving rapid wind and solar development-decarbonization, electrification and energy security—apply to nuclear power.

He said nuclear power will be needed to bolster intermittent renewable-power sources and there is no way to hit carbon-reduction targets in the coming decades without keeping existing nuclear plants online and adding new nuclear generation.

We have a lot of conviction," said Mr. Teskey. "As more wind and solar get built out around the world, the demand for clean baseload and dispatchable power is growing exponentially." About 10% of global com-

mercial electricity production came from nuclear power in 2020, well below the high point in the mid-1990s of 17.5%, according to the World Nuclear Industry Status Report, an annual update compiled by researchers around the globe. Tim Gitzel, CEO of Cameco,

said that Canada-based Cameco and Westinghouse together can provide "front-toend service" for nuclear power producers looking to lock down long-term fuel supplies and plant services. Canada is one of the world's largest producers of uranium. "We think there's a big North American solution here if you wrap your arms around Canada and the U.S. working together," Mr. Gitzel said.Shares of Cameco tumbled 14% on Wednesday following the announcement.



STG Logistics acquired the intermodal operations of XPO Logistics this year for \$710 million. An XPO distribution hub in Barcelona.

## ogistics Deals Slow With Freight Demand

By Paul Berger

A once-bustling logistics mergers-and-acquisitions market is quieting down as slipping freight demand and higher borrowing costs dampen deal making in the sector.

Company valuations are moderating in a softening freight market and rising borrowing costs are making deals tougher to complete. Executives and deal experts say that is leaving some companies struggling to find buyers as they seek to capitalize on strong growth during the Covid-19 pandemic.

Paul Svindland, chief executive of Bensenville, Ill.-based logistics provider STG Logistics, said more potential deals have crossed his desk in the past month or so than during all of the previous year. He said many companies shopping themselves are forecasting earnings that seem unrealistic in the current

freight downturn. "The mind-set is let me go try to defend the [earnings] even though I know there's a Covid-related impact," said Mr. Svindland, whose business acquired the intermodal operations of XPO Logistics Inc. this year for \$710 million. John Anderson, an operating

partner at private-equity firm Greenbriar Equity Group, said sellers are coming off banner earnings periods and have high expectations but buyers are having difficulty raising debt to support deals as they weigh uncertainty in freight markets. "There's a tough time meeting in the middle," he said.

The market for freight and logistics companies surged during the pandemic as retailers sought to rush goods to consumers, fueling strong growth in shipping demand, higher freight rates and record profits for companies from regional truck operators to international freight forwarders.

Chris Wofford, the managing partner at West Palm Beach, Fla.-based Wofford Advisors, strategic advisers in global supply chains, said the past two years have been exceptional for big deals as domestic and foreign firms expanded their reach.

Truckload carrier Werner Enterprises Inc. and Knight-Swift Transportation Holdings Inc. expanded their fleets and operations through acquisitions and Uber Technologies Inc.'s Freight unit bought tech-

nology-focused transportation billion. management provider Transplace, a strategic expansion of the Uber freight brokerage operation, in a cash and stock deal worth about \$2.25 billion.

Foreign-based ocean carriers and freight forwarders have shown great interest in the U.S. logistics market as they seek to expand their end-to-end supply-chain services.

Germany-based freight forwarder DB Schenker bought

Number of third-party logistics deals in the first half of the year

Van Buren, Ark.-based truckload carrier USA Truck for about \$285 million in Septem-Denmark-based Moller-Maersk AS bought Glen Mills, Pa.-based Pilot Freight Services LLC in a deal valued at \$1.68 billion. French container shipping line CMA CGM SA bought U.S.-based Ingram Micro's Commerce & Lifecycle Services in a deal valued at \$3

Evan Armstrong, president of research group Armstrong & Associates, said there have been hundreds of deals in the less-than-\$10 million range in the third-party logistics sector during the past 18 months, while last year saw 25 deals of over \$100 million apiece, the highest number since Armstrong & Associates started tracking such deals in 1999.

Mr. Armstrong said the first half of this year saw 14 such deals, putting 2022 on track to be another strong year. But the market has cooled since then, just as shipping volumes have declined and warnings about a broader global economic downturn have spread.

The slowdown comes amid a worldwide drop in venture-capital investments and a pullback in acquisitions deals as global economic uncertainty and rising interest rates damp investor confidence.

Mr. Armstrong said rising interest rates may be putting off first-time private-equity investors. But logistics companies looking to expand their reach and private-equity firms looking to expand existing logistics portfolios are hunting deals.

## **TECHNOLOGY**

## Cybersecurity Firm Sells for \$4.6 Billion Google

By Laura Cooper

The private-equity firm Vista Equity Partners has struck a deal to purchase cybersecurity provider KnowBe4 Inc. KnowBe4 Inc. for \$4.6 billion, in an increasingly rare leveraged buyout as financing for such deals has become harder to secure.

Under the terms of the deal announced Wednesday, Know-Be4 shareholders are to receive \$24.90 in cash.

In September, KnowBe4 said it had received a nonbinding proposal from Vista to acquire the company for \$24 a share in cash, a nearly 40%premium to the closing price on the last day of trading be-



KnowBe4, a platform for security awareness, will be acquired by Vista Equity Partners in an increasingly rare leveraged buyout.

fore the announcement. KnowBe4 stock soared 12.7% on Wednesday, closing

Clearwater, Fla.-based KnowBe4 is a platform for setomers, which number more than 50,000, include a concentration in the banking and credit-union sectors, according to the company's website.

Leveraged buyouts of public companies have become increasingly rare this year as stocks and bonds swoon and bank debt becomes more expensive. Private-equity firms had completed roughly \$175 billion of LBOs as of Oct. 7, compared with about \$262 billion during the same period of 2021, according to Dealogic.

To get deals done, privateequity firms are increasingly turning to private-credit providers, as Vista is expected to

curity-awareness training and simulated phishing. Its cus-

of three Vista has struck so far this year. In August, the technology-focused firm agreed to acquire the tax-software company Avalara Inc. for some \$8.4 billion, including debt. In January, Vista said it would acquire Citrix Systems Inc., a cloud-computing company, for \$16.5 billion including debt, alongside Elliott Management Corp.'s private-equity arm, in one of the biggest buyouts of the year.

Vista, based in Austin, Texas, is a player in buyouts of business-software companies. Founded in 2000, the firm manages more than \$94 billion, according to its website.

stages: a towering booster

called Super Heavy that would

blast the Starship spacecraft

sitting on top of it toward or-

bit, where it could be fueled

ahead of us. Human space-

flight safety is really impor-

tant here at SpaceX and we're

going to do what it takes to

make sure when we fly this

mission when we're ready to

fly," she said during a briefing.

two other future Starship mis-

sions for private astronauts:

one to Mr. Isaacman and the

other to Japanese entrepre-

neur Yusaku Maezawa. Mr. and

Mrs. Tito are the first custom-

ers to purchase individual

seats on a proposed Starship

flight, as opposed to booking

full missions as Mr. Isaacman

and Mr. Maezawa did, accord-

flights, the National Aeronau-

tics and Space Administration

hired SpaceX's Starship to

handle an operation taking

two astronauts to the surface

of the moon from lunar orbit

as part of its Artemis pro-

In addition to commercial

ing to Ms. Matthews.

SpaceX has said it has sold

"We have a lot of work

for longer flights.

## Approves Platform Backed By Trump

By MILES KRUPPA

Google approved Truth Social on Wednesday for distribution through its mobile-app store after the Trump-backed social-media platform agreed to follow the tech company's content-moderation guidelines.

Google, a unit of Alphabet Inc., said Truth Social had recently improved the enforcement of its policies for usergenerated content and agreed to police them going forward. Google in August declined Truth Social's application to be listed in the Play Store, notifying the app of several policy violations.

The approval means Trump Media & Technology Group, the company set up by Donald Trump following his presidency, can now distribute its platform through Google's app store, the largest for mobile devices using Google's Android operating system.

"It's been a pleasure to work with Google, and we're glad they helped us to finally bring Truth Social to all Americans, regardless of what device they use," said Trump Media & Technology Group Chief Executive Devin Nunes in a statement. "Today marks a significant milestone in our mission to restore free speech online."

The approval removes a stumbling block for Truth Social, which bills itself as America's "Big Tent" social-media platform, as its parent company attempts to complete a deal with a special-purpose acquisition company and become publicly listed.

The SPAC, Digital World Acquisition Corp., on Monday delayed a vote on extending the deadline for shareholders to approve the merger.

## First Space Tourist to Return to Orbit With SpaceX

By MICAH MAIDENBERG

The first commercial traveler to space plans to go back to orbit with **SpaceX** on a trip around the moon

Dennis Tito, who traveled to the International Space Station more than two decades ago on a paid flight on a Russian ship, and his wife, Akiko, purchased two seats on a planned around-the-moon flight on the Starship vehicle SpaceX is developing, the couple said on Wednesday.

The flight may be a while off, with Mr. Tito saying he doesn't expect it to happen in the near term. SpaceX hasn't attempted to fly Starship to orbit Earth yet, let alone around the moon. The company received regulatory permission to start orbital flight tests of Starship this past

"I want to continue to inspire people about the possibility of space and help make human spaceflight more accessible," Mr. Tito said Wednes-

Mr. Tito, a veteran investor who is now 82 years old, said he first discussed the mission



Dennis Tito and his wife, Akiko, have purchased two seats on a planned around-the-moon flight.

with SpaceX about a year ago when he and his wife were touring a SpaceX facility. He declined to discuss the price for the seats.

In recent years, several private space companies in the U.S. have worked to develop businesses around spaceflights for private individuals, an arena of space travel historically dominated by governments such as the U.S. and Russia. Ticket buyers have been wealthier people, and missions for the nascent sector still relatively few.

billionaire Technology Jared Isaacman funded a three-day mission last year that took him and three other nonprofessional astronauts on

a SpaceX vehicle to an orbit around Earth and back.

Aarti Matthews, director of Starship crew and cargo programs at Space Exploration Technologies Corp., the formal name for SpaceX, said the company would launch its own Starlink satellites using Starship before human missions.

The vehicle consists of two

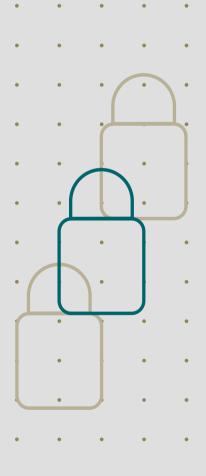


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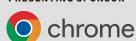


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## **BUSINESS NEWS**

## Blackstone Forms Alliance With Insurer

By MIRIAM GOTTFRIED

Blackstone Inc. is joining with insurance company Resolution Life in a move that is ultimately expected to give the investment firm more than \$60 billion in new assets to manage, executives at both companies said.

Blackstone will invest \$500 million in privately held Resolution Life and help it raise roughly \$2.5 billion more, giving the insurance company more firepower to acquire new blocks of policies in the reinsurance and life-and-annuities

Blackstone will manage Resolution Life's illiquid investments in areas such as private credit, private real estate and asset-based finance. The arrangement will add as much as \$25 billion to the private-eq-

uity firm's assets under management in the first year and is expected to contribute a total of more than \$60 billion over the next six years.

It is the latest example of a private-equity firm linking up with an insurer to secure more assets to manage and an insurer handing over management of its assets in search of higher returns. It will be the fourth such deal for Blackstone, which has already struck similar partnerships with F&G, part of Fidelity National Financial Inc.: a former life-insurance unit of Allstate Corp.; and Corebridge Financial, the lifeinsurance and retirement-services unit spun out of American International Group Inc.

Under the AIG deal, which the two companies announced in July 2021, Blackstone entered into a long-term agreement to

manage an initial \$50 billion in assets, with the amount increasing to nearly \$100 billion over the subsequent six years. The private-equity firm also agreed to pay \$2.2 billion for a nearly 10% stake in what is now Corebridge.

Unlike rivals such as Apollo Global Management Inc. and KKR & Co., which have bought all—or a substantial portion of-a single insurance company, Blackstone has opted to take small stakes in a variety of insurers in exchange for agreements to manage their assets. The firm, which will have a roughly 6% stake in Resolution Life after the new capital has been raised, believes the strategy helps it achieve greater scale, according to Gilles Dellaert, global head of Blackstone Insurance Solutions.

"In the credit and lending

markets, by virtue of the fact that we manage money for more than one company, we get access to bigger deals on better terms," he said.

Thanks to its various partnerships. Mr. Dellaert said Blackstone now has a path to managing more than \$250 billion in insurance assets over the next five years or so, up from over \$150 billion today.

Blackstone, which is slated to report third-quarter earnings next week, managed \$941 billion in total as of the end of the second quarter. The firm in 2018 set a goal of reaching \$1 trillion in assets by 2026 and has said it now expects to get there this year, thanks in part to growth initiatives like the insurance business.

Apollo, a pioneer in the business of managing insurance money, has charted a different course. It closed a deal earlier this year to buy the 65% of its insurance affiliate Athene Holding Ltd. it didn't already own.

Firms such as Brookfield Asset Management Inc. and Carlyle Group Inc. have also developed insurance strategies of their own in recent years.

Unlike Blackstone's other insurance partners, which originate new policies, Resolution Life has a strategy of reinsuring or buying portfolios of preexisting life-insurance policies from companies that no longer want to be in that line of busi-

Founded in 2018, it is the fourth insurance company set up by Resolution Group, whose founder, Clive Cowdery, began buying up these so-called closed blocks of insurance policies two decades ago.

Resolution Life has invested \$5 billion of equity in such deals so far.

The arrangement with Blackstone is the first time one of Mr. Cowdery's companies has signed such a wide-ranging asset-management agreement with a single firm. He said Resolution Life opted to do so because it liked the structure of the AIG deal and wanted a manager with a deeper understanding of its liabilities.

The private-credit market has also developed significantly over the past several years, creating more opportunities to generate returns that go beyond what publicly traded corporate and government bonds can deliver.

"As an insurance company, I want access for my investors and my policyholders to that spread," Mr. Cowdery said.

## Betterment Launches Cryptocurrency Portfolios

By Vicky Ge Huang

Betterment LLC, the largest independent online financial adviser, is launching four thematic crypto investing portfolios for its retail and adviser customers.

The product launch on Wednesday is the latest sign of mainstream acceptance of cryptocurrencies despite a \$2 trillion wipeout in the cryptocurrency market since last November. Bank of New York Mellon Corp., the country's oldest bank, said Tuesday that it would begin safeguarding clients' cryptocurrencies.

"I think the asset class is here to stay," Sarah Levy, chief executive of Betterment, said in an interview. "Crypto represents technological advancement and the technology will continue to improve, but just like stocks there will be winners and losers."

Last year, the Securities and Exchange Commission started allowing companies to

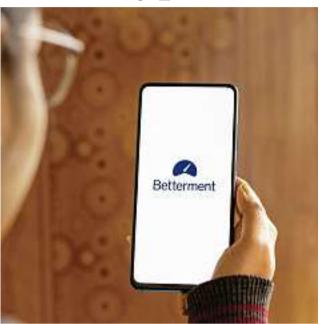
offer futures-based exchangetraded funds that track bitcoin. But the SEC so far hasn't allowed any ETFs that hold bitcoin or other cryptocurrencies directly, which means some financial advisers are finding creative ways to give clients direct access to baskets of cryptocurrencies.

Betterment, with \$33 billion in assets under management, is teaming up with crypto exchange Gemini to offer four portfolios populated with tokens listed on Gemini.

Each portfolio will track a basket of cryptocurrencies corresponding to a specific theme, including the metaverse and decentralized finance. Gemini also will serve as custodian for the digital

The portfolios will hold cryptocurrencies directly in managed investment accounts. Those are vehicles that will allow investors to buy into an account overseen by a Betterment algorithm.

ETFs, on the other hand,



Betterment is teaming up with crypto exchange Gemini.

trade on exchanges just as any other stock.

Money managers Franklin Templeton and ARK Investment Management recently

teamed up with Eaglebrook Advisors to offer separately

managed crypto accounts for

financial advisers who wish to

offer clients direct exposure

to digital tokens.

Betterment will charge a 1% annual fee for cryptocurrency assets. For traditional portfolios, the company charges 0.25% for its digital investing plan and 0.4% for customers who want access to human financial advisers. The cryptocurrency portfolios are an optional add-on for Betterment's retail and financial adviser customers. They are inaccessible to the company's 401(k) clients.

Betterment said it works with over 2,000 financial advisers from more than 600 wealth-management firms.

In February, Betterment made its foray into cryptocurrencies by acquiring digital asset robo adviser Makara, which had about \$13 million in assets under management at the end of 2021, according to a regulatory filing.

Since then, a steep decline in token prices and the failures of several once-highflying cryptocurrency startups have damped retail enthusiasm for the asset class.

Institutional adoption of major digital assets, often viewed as the fuel to supercharge crypto's rise, also slowed.

Betterment's cryptocurrency offering will draw from its diversified, long-term and automated approach to investing in traditional assets, Ms. Levy said.

The company will recommend that customers invest no more than 5% of their total investible assets in cryptocurrencies and it will offer educamaterials cryptocurrencies, according to Ms. Levy. She said the company is "thrilled about the timing" of the launch in part because it harks back to Betterment being founded in the depths of the 2008 global financial crisis.

Betterment, which has over 730,000 customers across all of its business lines, was valued at \$1.3 billion at its last funding round in September



The iPhone Baby: How 15 Years Shaped A Generation

WSJ presents a new documentary reported by Emmy Award-winning Personal Tech columnist Joanna Stern-The iPhone Baby: How 15 Years Shaped a Generation. By following Noah Schmick, a 15-year-old boy born on the same day the first iPhone went on sale, Stern dissects the impact of technology on the youngest generation. Through interviews with current and former Apple executives, the documentary traces the evolution of the smartphone alongside how the invention has shaped us all.

**WATCH NOW** on WSJ or YouTube



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**B6** | Thursday, October 13, 2022

## **MARKETS DIGEST**

**EQUITIES** 

### **Dow Jones Industrial Average 29210.85 28.34**, or 0.10% Trailing P/E ratio 17.21 23.35 P/E estimate \* 15.91 18.88 High, low, open and close for each Dividend vield 2.43 1.86 trading day of the past three months. All-time high 36799.65, 01/04/22 Current divisor 0.15172752595384 33900 33000 65-day moving average 32100 Session high 31200 DOWN UP 30300 Session low 29400

S&P 500 Index

**3577.03** ▼11.81, or 0.33% High, low, open and close for each trading day of the past three months.

65-day

moving average

\_\_\_\_\_

Aug.

Trailing P/E ratio 18.05 30.72 P/E estimate 16.30 21.52 Dividend vield \* 1.79 1.36 All-time high 4796.56, 01/03/22

**Nasdaq Composite Index** 

**10417.10 9**.09, or 0.09% High, low, open and close for each trading day of the past three months.

Trailing P/E ratio \*† 23.99 34.47 P/E estimate \*† 27.98 20.79 Dividend vield \*† 0.99 0.71 All-time high: 16057.44, 11/19/21



### Major U.S. Stock-Market Indexes

Aug.

\*Weekly P/E data based on as-reported earnings from Birinyi Associates Inc.; †Based on Nasdag-100 Index

Sept.

Bars measure the point change from session's open

			Latest					52-Week —		%	chq —
	High	Low	Close	Net chg	% ch	g	High	Low	% chg		3-yr. ann
Dow Jones											
Industrial Average	29455.12	29136.03	29210.85	-28.34	-0.10		36799.65	28725.51	-15.0	-19.6	2.9
Transportation Avg	12715.83	12483.78	12618.53	78.74	- 1	0.63	17039.38	11999.40	-14.2	-23.4	7.0
Utility Average	864.80	838.80	838.99	-27.67	-3.19		1071.75	838.99	-5.7	-14.5	-1.1
Total Stock Market	36340.21	36001.38	36064.81	-111.05	-0.31		48929.18	36064.81	-20.5	-25.8	5.9
Barron's 400	871.09	859.56	864.98	-0.96	-0.11		1127.20	825.73	-15.4	-21.8	8.6
Nasdaq Stock Mark	et										
Nasdaq Composite	10494.53	10372.21	10417.10	-9.09	-0.09		16057.44	10417.10	-28.5	-33.4	8.9
Nasdaq-100	10886.49	10754.85	10785.62	-5.73	-0.05		16573.34	10785.62	-27.0	-33.9	11.2
S&P											
500 Index	3608.34	3573.86	3577.03	-11.81	-0.33		4796.56	3577.03	-18.0	-24.9	6.4
MidCap 400	2268.05	2244.43	2252.85	-12.76	-0.56		2910.70	2200.75	-16.6	-20.7	5.5
SmallCap 600	1096.65	1083.54	1089.14	-7.24	-0.66		1466.02	1064.45	-19.5	-22.3	5.2
Other Indexes											
Russell 2000	1696.79	1671.88	1687.76	-5.15	-0.30		2442.74	1649.84	-24.7	-24.8	3.7
NYSE Composite	13647.42	13536.30	13546.80	-61.29	-0.45		17353.76	13472.18	-18.0	-21.1	1.6
Value Line	500.76	495.79	497.76	-2.16	-0.43		696.40	491.56	-24.4	-25.9	-1.0
NYSE Arca Biotech	4588.03	4539.59	4566.17	18.91		0.42	5815.27	4208.43	-18.0	-17.3	2.7
NYSE Arca Pharma	758.40	748.23	748.27	-4.33	-0.58		887.27	737.50	1.4	-9.5	8.7
KBW Bank	95.98	94.03	94.66	-0.13	-0.14		147.56	94.66	-29.1	-28.4	-1.3
$PHLX^{\S}Gold/Silver$	102.40	100.05	101.83	0.75	- 1	0.74	167.76	91.40	-21.5	-23.1	4.6
PHLX <sup>§</sup> Oil Service	66.95	65.14	66.59	-0.29	-0.43		88.37	49.14	5.9	26.3	0.6
PHLX§ Semiconductor	2224.79	2190.11	2198.60	-19.89	-0.90		4039.51	2198.60	-31.1	-44.3	11.4
Cboe Volatility	34.53	33.11	33.57	-0.06	-0.18		36.45	15.01	80.1	94.9	29.2

28500

July

Oct.

### Sources: FactSet; Dow Jones Market Data

## **Late Trading**

Sept.

Most-active and biggest movers among NYSE, NYSE Arca, NYSE Amer. and Nasdaq issues from 4 p.m. to 6 p.m. ET as reported by electronic trading services, securities dealers and regional exchanges. Minimum share price of \$2 and minimum after-hours volume of 50,000 shares.

### Most-active issues in late trading

LMND

158.2

21.08

		Volume			After Hour	c	
Company	Symbol	(000)	Last	Net chg	% chg	High	Low
SPDR S&P 500	SPY	7,167.2	357.11	0.55	0.15	359.81	340.65
Rentokil Initial ADR	RTO	4,807.8	26.51	-0.44	-1.63	28.29	26.51
iSh 20+ Year Treasury Bd	TLT	4,550.5	100.40	0.05	0.05	100.48	99.87
iShares TIPS Bond ETF	TIP	3,820.3	105.83	0.11	0.10	106.18	105.71
iSh MSCI Emerging Mkts	EEM	2,955.4	34.74	0.11	0.32	34.74	34.61
Invesco QQQ Trust I	QQQ	2,672.8	263.00	0.34	0.13	279.37	246.85
Krane CSI China Internet	KWEB	2,009.1	22.59	0.06	0.27	22.59	22.45
Apple	AAPL	1,940.6	138.48	0.14	0.10	145.93	138.31
Percentage gair	ners						
TE Connectivity	TEL	72.9	117.71	9.57	8.85	117.71	108.14
<b>Duck Creek Technologies</b>	DCT	153.0	11.56	0.77	7.14	12.20	10.05
Digital World Acqn Cl A	DWAC	232.3	16.85	0.89	5.58	18.40	15.88
Elanco Animal Health	ELAN	51.9	12.39	0.63	5.36	12.39	11.34
GDS Holdings ADR	GDS	75.8	15.78	0.75	4.99	15.78	14.80
And losers							
AMTD Digital ADR	HKD	51.5	36.65	-2.14	-5.52	39.00	35.94
1-800-FLOWERS.COM CI A	FLWS	175.2	6.13	-0.29	-4.52	6.42	6.13
Marqeta	MQ	82.5	6.77	-0.30	-4.24	7.17	6.77
MINISO Group Holding ADR	MNSO	737.9	4.95	-0.21	-4.07	5.16	4.95

### **Trading Diary**

Volume, Advancers, Decliners **Total volume**\* 890,426,485 8,806,139 Adv. volume\* 391.905.121 5.231.868 **Decl. volume**\* 486,916,955 3,363,719 **Issues traded** 3,351 294

1,224	144
1,973	139
154	11
8	0
464	32
0.73	0.75
4,871	97
Nasdaq	NYSE Arca
1,033,543	280,375,247
6,472,372	99,841,173
0,906,168	173,781,191
4,879	1,710
2,142	561
2,415	1,119
322	30
31	5
602	299
0.75	0.76
20,992	1,270
	1,973 154 8 464 0.73 4,871 Nasdaq 1,033,543 6,472,372 0,906,168 4,879 2,142 2,415 322 31 602 0.75

Primary market NYSE, NYSE American NYSE Arca only.  $^{\dagger}$  (TRIN) A comparison of the number of advancing and declining issues with the volume of shares rising and falling. An Arms of less than 1 indicates buying demand; above 1 indicates selling pressure.

### **International Stock Indexes**

§<sub>Nasdaq</sub> PHLX

Region/Country	y Index	Close	Net chg	— Latest ——— % chg	- YTD % chg
World	MSCIACWI	550.37	-1.73	-0.31	-27.1
	MSCI ACWI ex-USA	244.58	-0.82	-0.33	-29.0
	MSCI World	2367.69	-8.60	-0.36	-26.7
	MSCI Emerging Markets	865.34	0.68	80.0	-29.8
Americas	MSCI AC Americas	1363.49	-3.99	-0.29	-25.4
Canada	S&P/TSX Comp	18206.28	-10.40	-0.06	-14.2
Latin Amer.	MSCI EM Latin America	2155.41	-27.12	-1.24	1.2
Brazil	BOVESPA	114827.12		Closed	9.5
Chile	S&P IPSA	3021.53	-31.97	-1.05	7.7
Mexico	S&P/BMV IPC	45679.84	-113.15	-0.25	-14.3
EMEA	STOXX Europe 600	385.88	-2.07	-0.53	-20.9
Eurozone	Euro STOXX	363.51	-2.18	-0.59	-24.1
Belgium	Bel-20	3313.82	-31.49	-0.94	-23.1
Denmark	OMX Copenhagen 20	1575.50	13.98	0.90	-15.5
France	CAC 40	5818.47	-14.73	-0.25	-18.7
Germany	DAX	12172.26	-47.99	-0.39	-23.4
Israel	Tel Aviv	1862.69	14.51	0.79	-5.8
Italy	FTSE MIB	20466.77	-263.73	-1.27	-25.2
Netherlands	AEX	631.18	-5.13	-0.81	-20.9
Russia	RTS Index	954.53	-10.14	-1.05	-40.2
South Africa	FTSE/JSE All-Share	64528.23	-59.86	-0.09	-12.5
Spain	IBEX 35	7261.10	-94.80	-1.29	-16.7
Sweden	OMX Stockholm	697.83	-2.57	-0.37	-32.7
Switzerland	Swiss Market	10199.32	-8.51	-0.08	-20.8
Turkey	BIST 100	3517.75	-53.80	-1.51	89.4
U.K.	FTSE 100	6826.15	-59.08	-0.86	-7.6
U.K.	FTSE 250	16611.16	-292.90	-1.73	-29.3
Asia-Pacific	MSCI AC Asia Pacific	137.50	-0.23	-0.17	-28.8
Australia	S&P/ASX 200	6647.50	2.51	0.04	-10.7
China	Shanghai Composite	3025.51	45.71	1.53	-16.9
Hong Kong	Hang Seng	16701.03	-131.33	-0.78	-28.6
India	S&P BSE Sensex	57625.91	478.59	0.84	-1.1
Japan	NIKKEI 225	26396.83	-4.42	-0.02	-8.3
Singapore	Straits Times	3083.19	-21.80	<b>-0.70</b> ■	-1.3
South Korea	KOSPI	2202.47	10.40	■0.47	-26.0
Taiwan	TAIEX	13081.24	-24.79	-0.19	-28.2
Thailand	SET	1560.78	-1.90	-0.12	-5.8
Sources: FactSe	et; Dow Jones Market Data				

### Percentage Gainers...

		— Lä	itest Sess	ion —		- 52-VVe	2K ——
Company	Symbol	Close	Net chg	% chg	High	Low	% chg
Happiness Development	HAPP	3.85	1.43	59.09	22.80	2.40	-78.1
Hempacco	HPCO	3.14	0.95	43.38	41.80	2.07	
Vigil Neuroscience	VIGL	13.92	3.76	37.01	18.27	2.18	
Applied DNA Sciences	APDN	2.73	0.73	36.50	7.35	0.62	-51.2
Pineapple Energy	PEGY	6.70	1.70	34.00	34.20	0.76	-80.3
Gatos Silver	GATO	3.33	0.75	29.07	14.63	2.20	-72.3
BeiGene ADR	BGNE	151.30	25.79	20.55	392.30	118.18	-57.5
Avalo Therapeutics	AVTX	4.96	0.84	20.39	29.40	2.42	-81.7
Idaho Strategic Resources	IDR	5.45	0.85	18.48	13.72	4.34	23.2
El Pollo Loco Holdings	LOCO	10.53	1.43	15.71	16.90	8.15	-36.2
FingerMotion	FNGR	8.95	1.04	13.15	9.80	0.62	52.0
Pacific Biosciences CA	PACB	6.41	0.74	13.05	31.10	3.85	-73.4
Byrna Technologies	BYRN	6.18	0.70	12.77	20.25	4.50	-67.2
KnowBe4	KNBE	24.33	2.74	12.69	29.50	13.78	9.0
TOP Ships	TOPS	5.54	0.62	12.60	33.00	2.10	-82.7

### **Most Active Stocks**

Company	Symbol	Volume (000)	%chg from <b>-</b> 65-day avg	Latest S Close	ession % chg	52-W High	eek Low
ProShares UltraPro QQQ	TQQQ	198,886	15.5	18.10	-0.22	91.68	17.74
ProSh UltraPro Shrt QQQ	SQQQ	127,818	-1.8	63.35	0.24	67.69	28.15
Direxion Dly SCOND 3 BL	SOXL	109,179	32.6	7.34	-3.04	74.21	7.20
Carnival	CCL	97,298	63.0	7.31	10.09	25.29	6.11
Advanced Micro Devices	AMD	89,102	8.5	57.85	0.38	164.46	56.05
SPDR S&P 500	SPY	76,522	-2.4	356.56	-0.33	479.98	355.71
Apple	AAPL	69,854	-13.0	138.34	-0.46	182.94	129.04
Tesla	TSLA	66,509	-10.3	217.24	0.34	414.50	206.86
Agrify	AGFY	62,126	4785.0	0.95	88.02	23.55	0.37
Ford Motor	F	59,501	-14.0	11.54	-0.17	25.87	10.61
* Volumes of 100,000 shares or m	nore are ro	unded to t	he nearest t	housand			

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## **Percentage Losers**

-0.89 **-4.05** 

22.97 20.95

		— La	itest Sess	sion —		- 52-Wee	ek
Company	Symbol	Close	Net chg	% chg	High	Low	% chg
Owens Minor	OMI	15.10	-8.12	-34.97	49.11	14.10	-52.6
Dragonfly Energy	DFLI	10.02	-4.21	-29.59	27.95	8.98	0.8
Kinnate Biopharma	KNTE	8.12	-2.95	-26.65	26.05	5.75	-62.9
Nemaura Medical	NMRD	2.29	-0.77	-25.16	6.55	1.50	-60.5
Heartbeam	BEAT	4.15	-1.04	-20.04	6.74	1.12	
Tarena International ADR	TEDU	4.55	-1.11	-19.61	8.25	1.46	-11.7
PepGen	PEPG	11.96	-2.67	-18.25	16.99	4.32	
Semantix	STIX	1.86	-0.35	-15.84	11.34	1.77	-80.9
authID	AUID	1.72	-0.32	<b>-15.4</b> 8	18.64	1.45	-86.0
Innovative Eyewear	LUCY	2.23	-0.37	-14.23	7.00	1.26	
Glatfelter	GLT	2.33	-0.38	-14.02	18.74	2.28	-84.8
Cameco	CCJ	22.30	-3.52	-13.63	32.49	18.03	-13.0
Rumble	RUM	10.21	-1.55	-13.18	18.52	9.72	4.9
Enviva	EVA	51.23	-7.74	-13.13	91.06	45.88	-8.4
Hywin Holdings ADR	HYW	5.00	-0.75	-13.04	7.90	5.00	-19.6

### **Volume Movers** Ranked by change from 65-day average\*

Company	Symbol	Volume (000)	%chg from = 65-day avg	Latest S Close	Session % chg	52-W High	eek		
Rentokil Initial ADR	RTO	5,825	6392	26.95	5.36	42.61	25.35		
Crixus BH3 Acqn CI A	BHAC	496	4490	9.93	-0.10	10.40	9.71		
Freedom Acqn I CI A	FACT	2,037	3398	9.94	0.10	9.97	9.68		
Andretti Acquisition A	WNNR	1,002	2727	10.11	0.00	10.31	9.84		
KnowBe4	KNBE	26,031	2485	24.33	12.69	29.50	13.78		
G Squared Ascend II CI A	GSQB	764	2415	9.94	-0.30	9.97	9.70		
Pine Island Acqn CI A	PIPP	1,860	2146	9.98	-0.20	11.01	9.72		
Kinnate Biopharma	KNTE	2,897	2085	8.12	-26.65	26.05	5.75		
Enviva	EVA	7,336	2032	51.23	-13.13	91.06	45.88		
Avantis US SC Equity	AVSC	150	1826	40.64	-0.25	50.03	39.33		
* Common stocks priced at \$2 a share or more with an average volume over 65 trading days of at least 5,000 shares † Has traded fewer than 65 days									

### **CURRENCIES & COMMODITIES**

### **Currencies**

 $U.S.-dollar\,foreign-exchange\,rates\,in\,late\,New\,York\,trading$ 

		Ved —	YTD chg
ountry/currency	in US\$	per US\$	(%)
Americas			
<b>Argentina</b> peso	.0066	151.0361	47.1
<b>Brazil</b> real	.1889	5.2932	-5.0
<b>anada</b> dollar		1.3818	
<b>:hile</b> peso		944.51	
<b>colombia</b> peso	.000217	4607.91	13.3
<b>cuador</b> US dollar	1	1	
<b>Nexico</b> peso		19.9874	
<b>Iruguay</b> peso	.02433	41.1050	-8.1
\sia-Pacific			
<b>Australian</b> dollar	.6278	1.5929	15.7
<b>:hina</b> yuan	.1394	7.1751	12.9
long Kong dollar	.1274	7.8501	0.7
<b>ndia</b> rupee	.01217	82.179	10.3
<b>ndonesia</b> rupiah	.0000651		7.8
<b>apan</b> yen		146.89	
<b>(azakhstan</b> tenge		478.65	10.0
<b>/lacau</b> pataca	.1236		0.7
<b>//alaysia</b> ringgit	.2136		12.4
<b>lew Zealand</b> dollar			
<b>Pakistan</b> rupee		217.850	23.6
<b>Philippines</b> peso	.0170		15.5
ingapore dollar	.6968		6.4
outh Korea won	.0007018		
<b>iri Lanka</b> rupee	.0027285		80.6
aiwan dollar		31.823	14.8
<b>'hailand</b> baht	.02639	37.900	14.1

			D23 A2
		Ved —	YTD chg
Country/currency	in US\$	per US\$	(%)
Vietnam dong	.00004174	23958	4.8
Europe			
Czech Rep. koruna	.03951	25.309	15.7
Denmark krone	.1304	7.6661	17.2
Euro area euro	0.9703	1.0307	17.2
<b>Hungary</b> forint	.002247	444.98	37.1
Iceland krona	.006926	144.39	11.2
Norway krone	.0928	10.7773	22.4
Poland zloty	.2002	4.9946	24.0
Russia ruble	.01569	63.725	-14.8
Sweden krona	.0882	11.3382	25.2
Switzerland franc	1.0024	.9976	9.3
Turkey lira	.0539	18.5675	39.4
<b>Ukraine</b> hryvnia	.0271	36.9500	35.1
<b>UK</b> pound	1.1102	.9007	21.9
Middle East/Afri	ca		
Bahrain dinar	2.6518	.3771	0.04
Egypt pound	.0508	19.6775	25.2
Israel shekel	2803	3 5671	1/17

<b>(uwait</b> dinar	3.2202	.3105	2.6
<b>Oman</b> sul rial	2.5974	.3850	unch
<b>Qatar</b> rial	.2746	3.642	-0.01
Saudi Arabia riyal	.2661	3.7582	0.1
South Africa rand	.0547	18.2941	14.8
	Close Net Cl	ha % Cha	VTD « Cha
	Close Net Cl	ng // Crig	TTD /// Clig

WSJ Dollar Index 104.80 -0.037-0.035 17.03

### maturity

Corporate Borrowing Rates and Yields										
Bond total return index	Close		d (%) — Week ago	— 52-V High	/eek <del></del> Low	Total Return (%) 52-wk 3-yr				
U.S. Treasury, Bloomberg	2063.370	4.210	4.070	4.270	1.060	<b>-13.103</b> -3.135				
U.S. Treasury Long, Bloombe	rg 3119.430	4.110	3.980	4.140	1.720	<b>-27.728</b> -8.537				
Aggregate, Bloomberg	1900.040	4.860	4.670	4.880	1.580	<b>-14.819</b> -3.346				
Fixed-Rate MBS, Bloomber	g 1878.920	4.960	4.720	5.030	1.810	<b>-14.346</b> -3.888				
High Yield 100, ICE BofA	2995.521	8.694	8.318	8.694	3.669	<b>-12.818</b> -1.147				
Muni Master, ICE BofA	542.298	3.608	3.658	3.787	0.895	<b>-9.255</b> -1.281				
EMBI Global, J.P. Morgan	710.355	8.790	8.480	8.790	4.744	<b>-22.309</b> -6.338				

### $Sources: Tullett\, Prebon, Dow\, Jones\, Market\, Data$

**Commodities** 

	Close	Wedne Net chg	esday — % Chg	High	52-Week Low	% Chg	YTD % chg
DJ Commodity	1037.13	-6.77	-0.65	1264.48	893.10	9.62	9.61
Refinitiv/CC CRB Index	279.25	-2.71	-0.96	329.59	218.39	18.48	20.17
Crude oil, \$ per barrel	87.27	-2.08	-2.33	123.70	65.57	8.49	16.04
Natural gas, \$/MMBtu	6.435	-0.161	-2.44	9.680	3.561	15.12	72.52
Gold, \$ per troy oz.	1670.30	-8.40	-0.50	2040.10	1623.30	<b>-6.</b> 88	-8.60

Kuwait dinar

Oman sul rial

### **CREDIT MARKETS**

2.13%

2.27%

2.84% 800-355-3063

2.85%

3.66%

3.75%

877-707-1995

800-799-1424

888-873-3424

### **Consumer Rates and Returns to Investor Selected rates U.S.** consumer rates

5-year CDs

Bankrate.com avg†:

Los Angeles, CA

**TAB Bank** 

State Bank of India California

### A consumer rate against its benchmark over the past year

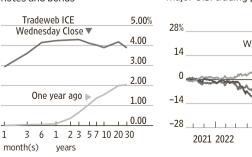
Five-year CD yields 1.00 Federal-funds<sub>0.25</sub> target rate NDJFMAMJJASO

### Oaden, UT Presidential Bank, FSB Bethesda, MD First Internet Bank of Indiana Indianapolis, IN **CFG Community Bank** Baltimore, MD 2021 2022

888-205-8388 52-Week Range (%) — 3-yr chg Low 0 2 4 6 8 High (pct pts) —Yield/Rate (%)— Last (●) Week ago Interest rate **3.00-3.25** 3.00-3.25 Federal-funds rate target 0.00 3.25 1.25 Prime rate\* 6.25 6.25 3.25 6.25 1.25 3.78 0.12 4.01 2.01 Libor, 3-month 4.01 0.07 0.23 Money market, annual yield 0.23 0.20 -0.492.02 0.41 2.13 Five-year CD, annual yield 2.13 0.61 30-year mortgage, fixed<sup>†</sup> 7.12 6.86 3.09 7.12 3.18 15-year mortgage, fixed<sup>†</sup> 6.33 6.00 2.42 6.33 2.98 Jumbo mortgages, \$647,200-plus<sup>†</sup> 7.15 6.85 3.09 7.15 2.75 Five-year adj mortgage (ARM)† 5.36 5.33 2.82 5.36 0.83 New-car loan, 48-month 5.77 3.41 5.99 Bankrate.com rates based on survey of over 4,800 online banks. \*Base rate posted by 70% of the nation' banks. †Excludes closing costs. Sources: FactSet; Dow Jones Market Data; Bankrate.com

## Treasury yield curve

**Forex Race** Yield to maturity of current bills, Yen, euro vs. dollar; dollar vs. major U.S. trading partners notes and bonds



Sources: Tradeweb ICE U.S. Treasury Close; Tullett Prebon; Dow Jones Market Data

Sources: J.P. Morgan; Bloomberg Fixed Income Indices; ICE Data Services

### **Futures Contracts**

THE WALL STREET JOURNAL.

	N.	otal C F	) otwo louws	Cuturo	_	
	IV		Petroleum	Future	S	
	Open		ntract hi lo Low	Settle	Chg	Open interest
Connor			10 Low 10 lbs.; \$ per lb.	Settle	Crig	interest
Oct	3,4145	3,4590	3.4145	2 4445	-0.0335	1 570
Dec	3,4245	3.4650	3.3980		-0.0370	1,570 106,397
		ا0,4050 s.4050 roy oz.;\$ pe		3.4250	-0.0370	100,397
Oct	1668.00	1669.90	1668.00	1670.30	-8.40	651
Nov	1668.30	1674.90	1663.00	1672.30	-8.60	3,131
Dec	1673.40	1682.00	1668.00	1677.50	-8.50	363,678
Feb'23	1686.30	1695.10	1682.10	1691.10	-8.40	42,102
April	1699.20	1707.60	1697.10	1705.30	-8.50	12,007
June	1712.90	1722.40	1711.80	1719.40	-8.50	6,101
			oz.; \$ per troy o:		-0.50	0,101
Oct		, , , , , ,	ο <u>ε</u> , φ ρει ει ο γ οι	2126.60	-14.00	1
Dec	2133.00	2186.50	2106.50	2136.40	-14.00	6,423
			;\$ per troy oz.	2130.40	14.00	0,423
Oct		,	,,,,,	891.40	-18.10	278
Jan'23	889.90	897.80	878.30	881.00	-18.10	49,791
			\$ per troy oz.	002.00	10.10	17,7,71
Oct	19.085	19.110	18.785	18.878	-0.549	87
Dec	19.175	19.310	18.840	18,938	-0.549	103,385
Crude (	Oil, Light	Sweet (	<b>NYM)</b> -1,000 bl	ols.;\$perb	bl.	,
Nov	88.67	90.07	86.28	87.27	-2.08	153,454
Dec	87.25	88.66	85.05	86.06	-1.91	254,620
Jan'23	85.81	87.24	83.75	84.74	-1.82	122,906
March	83.23	84.16	81.09	82.04	-1.64	91,135
June	79.80	80.70	77.97	78.90	-1.39	118,608
Dec	75.69	76.52	74.14	74.89	-1.27	158,350
<b>NY</b> Har	bor ULS	D (NYM)-	42,000 gal.; \$ p	er gal.		
Nov	3.9032	4.0707	3.8601	3.9328	.0020	56,687
Dec	3.6091	3.6867	3.5500	3.6216	0014	48,396
Gasolir	ie-NY RE	BOB (NYN	<b>1)</b> -42,000 gal.;	\$ per gal.		
Nov	2.5937	2.6687	2.5735	2.6303	.0030	80,280
Dec	2.4500	2.5104	2.4187	2.4713	0092	63,984
Natura	l Gas (NY	<b>M)</b> -10,000	) MMBtu.;\$ per	MMBtu.		
Nov	6.601	6.803	6.399	6.435	161	119,903
Dec	6.945	7.127	6.728	6.766	162	74,009
Jan'23	7.134	7.312	6.917	6.953	161	105,313
March	6.257	6.348	6.083	6.110	129	82,549
April	5.126	5.187	5.072	5.096	040	77,159
May	5.016	5.087	4.982	5.004	036	83,071
		Acus	ultuma East		_	
		Agric	ulture Fut	ures		
Corn (C	<b>BT)</b> -5,000	bu.; cents p	oer bu.			

March	6.257	6.348	6.083	6.110	129	82,549
April	5.126	5.187	5.072	5.096	040	77,159
May	5.016	5.087	4.982	5.004	036	83,071
		A				
		Agric	ulture Fut	ures		
Corn (CE	<b>3T)</b> -5,000	bu.; cents ¡	oer bu.			
Dec	693.25	700.00	680.00	693.00		664,579
March'23	700.00	706.75	687.25	700.00	25	306,467
Oats (C	<b>3T)</b> -5,000	bu.; cents	per bu.			
Dec	393.75	404.50	393.75	402.50	10.25	3,148
March'23	397.75	407.50	397.75	406.00	10.25	622
	ns (CBT)		cents per bu.			
Nov	1373.00	1414.00	1367.50	1396.00	19.75	254,818
Jan'23	1385.00	1423.25	1379.50	1405.00	17.00	176,241
Soybea	n Meal (	( <b>CBT)</b> -100	tons; \$ per ton.			
Oct	410.40	424.30	410.40	421.80	11.40	174
Dec	405.50	418.80	403.40	414.30	8.30	158,087
Soybea	n Oil (CB	<b>ST)</b> -60,000	lbs.; cents per l	b.		
Oct	68.44	68.44	68.34	69.17	.19	137
Dec	65.28	65.90	64.50	65.59	.12	132,239
Rough	Rice (CB	<b>T)</b> -2,000 cv	wt.;\$percwt.			
Nov	16.73	16.88	16.70	16.81	.09	5,781
Jan'23	17.07	17.23	17.06	17.16	.08	1,970
Wheat	<b>(CBT)</b> -5,0	00 bu.; cen	ts per bu.			
Dec	902.00	903.75	876.25	882.25	-18.75	140,784
March'23	917.00	919.75	893.00	899.00	-18.00	69,051
Wheat	<b>(KC)</b> -5,00	0 bu.; cents	s per bu.			
Dec	992.25	993.75	967.00	970.00	-20.75	77,218
March'23	991.00	991.00	964.75	968.00	-20.25	39,896
Cattle-I	Feeder (	<b>CME)</b> -50,0	000 lbs.; cents p	erlb.		
Oct	175.600	176.625	175.000	175.500	.425	3,663
Jan'23	176.875	177.675	175.950	176.900	.175	18,222
Cattle-l	_ive (cm	<b>E)</b> -40,000	lbs.; cents per ll	Э.		
Oct	145.825	146.250	145.500	146.175	.375	10,628
Dec	148.600	149.075	147.950	148.450	125	112,792
Hogs-L	ean (cM	<b>E)</b> -40,000	lbs.; cents per lt	).		
Oct	93.200	93.250	92.775	93.100	.075	9,388
Dec	80.000	80.825	79.200	80.700	1.175	86,720
Lumber	(CME)-1	10,000 bd.	ft., \$ per 1,000 b	od. ft.		
Nov	479.80	497.00	473.50	488.90	10.20	1,963
Jan'23	475.90	490.80	472.30	481.00	8.00	761
Milk (CN	<b>1E)</b> -200,0	000 lbs., cer	nts per lb.			
Oct	21.79	21.94	21.79	21.85	.06	4,816
Nov	21.02	21.38	20.80	21.26	.13	5,660
			ns;\$ per ton.			
Dec	2,349	2,362	2,312	2,318	-29	119,252
March'23	2,339	2,352	2,305	2,310	-28	78,568
Coffee	(ICE-US)	37,500 lbs.	cents per lb.			
Dec	217.40	218.85	209.20	209.75	-8.10	78,757
DOFF	OWIE	a Da	nchma	vlc I		

	Open	Contr High hilo	act Low	Settle	Chg	Ope interes
Marsh/22	207.35	208.75	201.05	201.40	-6.55	58,588
March'23		208.75 <b>E-US)</b> -112,00			-0.55	20,200
Sugar-v March	18.74	18.94	18.57	18.68	06	225 210
Mav	17.82	17.96	17.70	17.80	00	325,219
,		17.90 C (ICE-US)-11				133,919
Jan	Juliesu	C (ICE-US)-11	12,000 105.,1	34.76		2,125
March				34.76		2,755
	(ICE-IIS).	50,000 lbs.; ce	ints nor lh	34.70		2,700
Dec	88.49	88.76	84.86	84.92	-3.94	107,618
March'23	86.70	87.17	83.31	83.47	-3.84	60,328
		E-US)-15,000			5.04	00,520
Nov	191.00	199.70	189.55	197.80	7.40	6,167
Jan'23	184.95	193.80	184.50	191.70	6.75	3,653
Jun 25	101.75	175.00	101150	171.70	0.75	2,022
		Interest	Rate Fu	tures		
Ultra Tr	easurv	Bonds (CBT	<b>)</b> - \$100.00	0: nts 32nd	ls of 100°	%
Dec	133-070		132-150	134-060		1,429,37
		S (CBT)-\$100				1,727,37
Dec	124-120		123-280			1,211,033
March'23			123-260		16.0	194
Treasu	v Notes	(CBT)-\$100,				
Dec	111-020		110-300			3,873,207
March'23	111-200	111-280	111-070	111-240	11.0	77!
5 Yr. Tro	easury N	lotes (CBT)	-\$100,000;	pts 32nds	of 100%	
Dec	106-302	107-085	106-260	107-055	8.0	4,040,578
March'23	107-100	107-140	107-030	107-125	8.7	
2 Yr. Tro	easury N	lotes (CBT)	-\$200,000;	pts 32nds	of 100%	
Dec	102-166	102-197	102-156	102-181	2.0	2,045,872
March'23	102-226	102-237	102-216	102-226	2.5	53
30 Day	Federal	Funds (CB1	<b>r)</b> -\$5,000,0	00; 100 - d	aily avg.	
Oct	96.9175	96.9200	96.9175	96.9175		398,927
Nov	96.2400	96.2500	96.2300	96.2350		367,243
10 Yr. D	el. Int. R	ate Swaps	(CBT)-\$10	00,000; pts	32nds of	f100%
Dec	89-295	90-140	89-250	90-105	6.5	15,218
Three-M	Month S	OFR (CME)	\$1,000,000	);100 - dail	y avg.	
Sept	96.5350	96.5400	96.5300	96.5350		626,995
March'23	95.3650	95.4100	95.3350	95.3750	.0100	1,127,175
Eurodo	llar (CME	<b>)</b> -\$1,000,000	; pts of 100	%		
Oct	95.9300	95.9475	95.8875	95.9025	0350	149,228
Dec	95.1350	95.1650	95.0750	95.1100	0350	1,434,629
March'23	95.0750	95.1250	95.0400	95.0850		956,216

Japane	36 I CIII	CIVIE)-#12,	200,0	υυ, φ μει	100±		
Oct	.6864	.6869		.6808	.6813	0049	1,885
Dec	.6909	.6918	$\overline{\mathbf{w}}$	.6854	.6860	0049	239,939
Canadi	an Dolla	r (CME)-C	AD 10	0,000;\$	per CAD		
Oct	.7253	.7267		.7231	.7234	0008	172
Dec	.7251	.7268		.7232	.7235	0008	139,538
British	Pound (	CME)-£62,	500;\$	per £			
Oct		1.1135		1.0926	1.1095	.0071	364
Dec		1.1148			1.1107	.0071	251,302
Swiss F	Franc (CI	ME)-CHF 12	25,000	);	HF		
Dec	1.0102	1.0138		1.0064	1.0089	0007	43,354
		1.0238			1.0192		368
Austra	lian Dol	lar (CME)	AUD :	.00,000;	\$ per AUD		
Oct		.6299			.6277		
Dec		.6310			.6287	.0010	137,317
Mexica	ın Peso (	(CME)-MXN	N 500	,000;\$p			
Oct						.00026	_
Dec		.04948		.04911	.04938	.00025	206,13
Euro (C		,000; \$ per <del>(</del>					
Oct		.9738		.9672		0011	
Dec	.9750	.9784		.9716	.9746	0011	619,565
		les e	1				
		inc	ıex I	Future	es		
Mini D.	J Indust	rial Avera	age (	<b>CBT)</b> -\$5	x index		
Dec		29526				-5	65,329
March'23		29702					593
		CME)-\$50			_,,,,,		
Dec		3635.25			3588 50	-10.75	2 234 479
		3663.00					
		ap 400 (c				10.50	50,57
Dec		2294.10				11.00	55,997
Dec March'23		2294.10		2247.90	2261.10		,
		)O (CME) (	t20	and a co	2201.10	-10.70	-
		00 (CME)-				4.50	
Dec		10976.75			10840.50		
		11077.00			10947.50	-5.25	3,994
		)00 (CME)					
Dec	1700.90	1717.60		1673.90	1692.70	-4.20	563,922

1688.90

112.57

1973.50 **1975.90** 

112.91 **113.22** 

112.86

9,242

703

.10 53,909

-4.30

.08

October 12, 2022

3.19814 3.34557 0.08038

3.78400 4.01086 0.12225 4.28371 4.49000 0.15675

4.82500 5.09843 0.26575

3.04 3.05 0.03

Mini Russell 1000 (CME)-\$50 x index 1987.90 1991.60

 Dec
 113.23
 113.50

 March'23
 113.03
 113.17

 $\textbf{U.S. Dollar Index (ICE-US)} \hbox{-}\$1,\!000\,x\,index$ 

95.3650 95.4400

95.3600 **95.4200** .0550 934,526

### Borrowing Benchmarks | wsj.com/market-data/bonds/benchmarks **Money Rates**

Fannie Mae

Key annual interest rates paid to borrow or lend money in U.S. and international markets. Rates below are a guide to general levels but don't always represent actual transactions.

	Inflatio	n	
	Aug. index	Chg Fro	m (%)
	level	July '22	Aug. '21
U.S. consu	ımer price in	dex	
∆ll items	296.171	-0.04	8.3

U.S. consu	mer pri	ce inde	X	
Allitems	296	5.171	-0.04	8.3
Core	297	<b>7.17</b> 8	0.52	6.3
In	ternati	ional ra	ates	
		Week		Week-
	Latest	ago	High	Low
Prime rate	s			
U.S.	6.25	6.25	6.25	3.25
Canada	5.45	5.45	5.45	2.45
Japan	1.475	1.475	1.475	1.475
Policy Rate	es			
Euro zone	1.25	1.25	1.25	0.00
Switzerland	1.00	1.00	1.00	0.00
Britain	2.25	2.25	2.25	0.10
Australia	2.60	2.60	2.60	0.10

Overnight repurchase											
U.S.	3.03	3.06	3.08	0.01							
U	S. govern	ment	rates								

U.S.	govern	ment	rates		-
Discount	3.25	3 25	3 25	0.25	9
	,,,,	رے.د <u>ر</u>	رے.د <u>ر</u>	0.27	

	Lat	Week est ago	: —52 Higl	-WEEK— h Low		Latest	Week ago	—52-1 High	WEEK Lo
ederal fu	nds				Libor				
ffective rate	3.0800	3.0800	3.0900	0.0800	One month	3.33871	3.19814	3.34557	0.080
High	3.2500	3.2500	3.2500	0.0900	Three month	4.01086	3.78400	4.01086	0.122
-ow	3.0500	3.0600	3.0600	0.0200	Six month	4.49000	4.28371	4.49000	0.156
Bid	3.0800	3.0800	3.0800	0.0600	One year	5.06771	4.82500	5.09843	0.265
Offer	3.1000	3.1000	3.1200	0.0800	Secured C	vernight	Financ	ing Ra	ite
Treasury b	ill auct	ion				3.05	3.04	3.05	0.0

Treasury bill auction												
4 weeks	2.920	2.660	2.920	0.020								
13 weeks	3.510	3.340	3.510	0.045								
26 weeks	4.030	3.850	4.030	0.055								

Other short-term rates											
60 days	6.589	6.180	6.625	2.477							
30 days	6.468	6.109	6.485	2.452							
30-year mortgage yields											

	۱	Veek	– 52-V	Veek
	Latest	ago	high	lov
Call money				

	7.00	2.00	2.00	2.00
Commercial	paper (/	AA fina	ancial)	)
90 days	3.67	3.65	3.67	0.10

	Latest	Value Traded		Week — Low									
DTCC G	CF Repo In	dex											
Treasury	3.053	37.750	3.065	0.015									
MBS	3.118	29.900	3.175	0.018									
Notes on d	Notes on data:												
loans poste U.S. banks, <b>Other prin</b>	Notes on data:  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 22, 2022.  Other prime rates aren't directly comparable; landing practices vary widely by logation:												

lending practices vary widely by location;
Discount rate is effective September 22, 2022.
Secured Overnight Financing Rate is as of
October 11, 2022. 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 530 p.m. ET. of 5:30 p.m.ET.

Sources: Federal Reserve; Bureau of Labor Statistics; DTCC; FactSet;
Tullett Prebon Information, Ltd.

### **Exchange-Traded Portfolios** | wsJ.com/ETFresearch

	Lar	gest 100	) exch	ange-tr	aded funds, latest ses	sion				ETF	Symbo	Closing I Price		(%)
Wednesda	v. Octobe	er 12, 20	22		I		Closing	Chg	YTD	SPDR S&P 500		356.56		-24.9
		Closin	a Cha	YTD	ETF	Symbol	Price	(%)	(%)	SPDR S&P Div		112.65		-12.8
ETF	Symbo	I Price			iShMSCIEAFEValue	EFV	38.50	-0.44	-23.6	TechSelectSector		116.56		-33.0
CnsmrDiscSelSector	XLY	139.00	0.26	-32.0	iShNatlMuniBd	MUB	103.55	0.03	-10.9	UtilitiesSelSector	XLU	61.52		-14.1
CnsStapleSelSector	XLP	67.65		-12.3	iSh1-5YIGCorpBd	IGSB	49.04	-0.04	-9.0	VangdInfoTech		301.03		-34.3
DimenUSCoreEq2	DFAC	22.49		-22.4	iShPfd&Incm	PFF	30.74	-0.77	-22.0	VangdSC Val		147.25		-17.7
EnSelSectorSPDR	XLE	80.12	0.81		iShRussell1000Gwth	IWF			-31.8	VangdExtMkt		128.08		-30.0
FinSelSectorSPDR	XLF	30.29		-22.4	iShRussell1000Val	IWD	136.78	-0.47	-18.5	VangdDivApp	VIG	135.32		-21.2
HealthCareSelSect	XLV	121.90		-13.5	iShRussell2000	IWM	167.26	-0.27	-24.8	VangdFTSEDevMk	VEA	36.19		-29.1
InvscQQQI	QQQ	262.66		-34.0	iShRussellMid-Cap	IWR	62.45	-0.62	-24.8	VangdFTSE EM	vwo	36.05		-27.1
InvscS&P500EW	RSP	128.02		-21.3	iShRussellMCValue	IWS	96.79	-0.72	-20.9	VangdFTSE Europe	VGK	45.80		-32.9
iSh3-7YTreaBd	IEI	113.91		-11.5	iShRussell1000	IWB	196.94	-0.27	-25.5	VangdFTSEAWxUS	VEU	44.03		-28.1
iSh0-5YTIPSBd	STIP	96.88	0.03		iShS&P500Growth	IVW	57.01	-0.18	-31.9	VangdGrowth		210.53		-34.4
iShCoreDivGrowth	DGRO	44.53	-0.27	-19.9	iShS&P500Value	IVE	129.68	-0.46	-17.2	VangdHlthCr		224.20		-15.8
iShCoreMSCIEAFE	IEFA	52.35		-29.9	iShShortTreaBd	SHV	109.91	0.01	-0.5	VangdHiDiv	VYM	96.14		-14.2
iShCoreMSCIEM	IEMG	42.71		-28.7	iShTIPSBondETF	TIP	105.72	0.20	-18.2	VangdIntermBd	BIV	72.93		-16.8
iShCoreMSCITotInt	IXUS	50.56	-0.30	-28.7	iSh1-3YTreasuryBd	SHY	81.12	0.10	-5.2	VangdIntrCorpBd	VCIT	74.84		-19.3
iShCoreS&P500	IVV	357.98	-0.32	-25.0	iSh7-10YTreaBd	IEF	95.21	0.33	-17.2	VangdLC	vv	162.98		-26.3
iShCoreS&P MC	IJH	224.36	-0.56	-20.7	iSh20+YTreaBd	TLT	100.35	0.49	-32.3	VangdMC	vo	188.02		-26.2
iShCoreS&P SC	IJR	89.09	-0.66	-22.2	iShUSTreasuryBd	GOVT	22.64	0.29	-15.1	VangdMC Val		122.51		-18.5
iShCoreS&PTotUS	ITOT	79.44	-0.24	-25.7	JPMEquityPrem	JEPI	50.88	-0.49	-19.5	VangdMBS	VMBS	44.58		-15.6
iShCoreTotalUSDBd	IUSB	44.09	0.07	-16.7	JPM UltShIncm	JPST	50.09	0.04	-0.8	VangdRealEst	VNQ	76.68		-33.9
iShCoreUSAggBd	AGG	95.48	0.08	-16.3	SPDRBlm1-3MTB	BIL	91.48		0.1	VangdS&P500ETF	VOO	327.64		-25.0
iShSelectDividend	DVY	107.39	-0.90	-12.4	SPDR Gold	GLD	155.99	0.53	-8.8	VangdST Bond	BSV	74.63	0.08	
iShESGAwareUSA	ESGU	79.22	-0.23	-26.6	SPDRPtfS&P500	SPLG	41.93	-0.31	-24.9	VangdSTCpBd	VCSH	73.90	-0.11	
iShEdgeMSCIMinUS/	USMV	65.75	-0.71	-18.7	SPDRS&P500Growth	SPYG	49.42	-0.10	-31.8	VangdShtTmInfltn	VTIP	47.55		
iShEdgeMSCIUSAQua	d QUAL	104.30	-0.39	-28.3	SchwabIntEquity	SCHF	28.00	-0.25	-28.0	VangdShortTrea	VGSH	57.73	0.12	
iShGoldTr	IAU	31.81	0.60	-8.6	SchwabUS BrdMkt	SCHB	41.94	-0.33	-25.8	VangdSC	VB	173.59		-23.2
iShiBoxx\$HYCpBd	HYG	71.58	0.17	-17.7	SchwabUS Div	SCHD	67.16	-0.09	-16.9	VangdTaxExemptBd		48.56		-11.6
iShiBoxx\$InvGrCpBd	LQD	101.17	-0.12	-23.7	SchwabUS LC	SCHX	42.25	-0.24	-25.8	VangdTotalBd	BND	70.71		-16.6
iShJPMUSDEmgBd	EMB	78.62	-0.35	-27.9	SchwabUS LC Grw	SCHG	54.93	-0.11	-32.9	VangdTotIntlBd	BNDX	47.13		-14.6
iShMBSETF	MBB	90.88	-0.09	-15.4	SchwabUS SC	SCHA	38.37	-0.36	-25.1	VangdTotIntlStk	VXUS	45.45	-0.15	-28.5
iShMSCIACWI	ACWI	77.52	-0.27	-26.7	Schwab US TIPs	SCHP	52.01	0.21	-17.3	VangdTotalStk	VTI	179.30		-25.7
iShMSCI EAFE	EFA	55.71		-29.2	SPDR DJIA Tr				-19.6	VangdTotWrldStk	VT	78.67		-26.8
iSh MSCI EM	EEM	34.63	0.12	-29.1	SPDR S&PMdCpTr	MDY	410.85	-0.51	-20.6	VangdValue	VTV	124.69	-0.40	-15.2

### **Cash Prices**

Wednesday, October 12, 2022

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

	Wednesday	\	Wednesday	\	Wednesday
Energy		Iron Ore, 62% Fe CFR China-s Shredded Scrap, US Midwest-s,m	96.5 n.a.	Wheat,Spring14%-pro Mnpls-u Wheat,No.2 soft red,St.Louis-u	11.3175 7.9725
Coal, C. Aplc., 12500 Btu, 1.2 SO2-r, w	204.950	Steel, HRC USA, FOB Midwest Mill-s	760	Wheat - Hard - KC (USDA) \$ per bu-u	10.3500
Coal,PwdrRvrBsn,8800Btu,0.8S02-r,	w <b>16.250</b>	Battery/EV metals		Wheat,No.1soft white,PortId,OR-u	9.2000
Metals		BMI Lithium Carbonate, EXW China, =99.2%-v,w BMI Lithium Hydroxide. EXW China. =56.5%-v.w	72875 71900	Food	
Gold, per troy oz		BMI Cobalt sulphate, EXW China, >20.5% -v,m	8601	Beef,carcass equiv. index	
Engelhard industrial	1670.00	BMI Nickel Sulphate, EXW China, >22%-v,m	5464	choice 1-3,600-900 lbsu	224.78
Handy & Harman base	1670.65	BMI Flake Graphite, FOB China, -100 Mesh, 94-95% -v,m	770	select 1-3,600-900 lbsu	195.43
Handy & Harman fabricated	1854.42	Fibora and Toytiloa		Broilers, National comp wtd. avgu,w	1.2199
LBMA Gold Price AM	*1664.15	Fibers and Textiles	1	Butter,AA Chicago-d	3.1850
LBMA Gold Price PM	*1664.70	Burlap,10-oz,40-inch NY yd-n,w	0.7550	Cheddar cheese,bbl,Chicago-d	220.00
Krugerrand,wholesale-e	1746.25	Cotton,11/16 std lw-mdMphs-u	0.8792	Cheddar cheese,blk,Chicago-d Milk.Nonfat drv.Chicago lbd	205.25 152.50
Maple Leaf-e	1788.02	Cotlook 'A' Index-t	*106.15	Coffee.Brazilian.Comp-v	2.0806
American Eagle-e	1788.02	Hides, hvy native steers piece fob-u	n.a.	Coffee, Colombian, NY-v	2.7993
Mexican peso-e	2155.82	Wool,64s,staple,Terr del-u,w	n.a.	Eggs,large white,Chicago-u	3.5150
Austria crown-e	1640.96	Grains and Feeds		Flour.hard winter KC-p	23.75
Austria phil-e	1754.60	Grains and Feeds		Hams.17-20 lbs.Mid-US fob-u	1.17
Silver, troy oz.		Barley,top-quality Mnpls-u	n.a.	Hogs,lowa-So. Minnesota-u	91.52
Engelhard industrial	19.1500	Bran,wheat middlings, KC-u,w	233	Pork bellies.12-14 lb MidUS-u	1.6094
Handy & Harman base	18.9870	Corn,No. 2 yellow,Cent IL-bp,u	6.6800	Pork loins.13-19 lb MidUS-u	1.2299
Handy & Harman fabricated	23.7340	Corn gluten feed, Midwest-u, w	222.5	Steers.TexOkla. Choice-u	n.a.
LBMA spot price	*£17.5200	Corn gluten meal, Midwest-u, w	658.8	Steers,feeder,Okla. City-u,w	175.00
(U.S.\$ equivalent)	*19.3950	Cottonseed meal-u,w	450	Fats and Oils	
Coins,wholesale \$1,000 face-a	19463	Hominy feed,Cent IL-u,w	202	Fats and Olis	
Other metals		Meat-bonemeal,50% pro Mnpls-u,w	368	Degummed corn oil, crude wtd. avgu,w	64.5000
LBMA Platinum Price PM	*895.0	Oats,No.2 milling,Mnpls-u	4.3250	Grease,choice white,Chicago-h	0.7350
Platinum,Engelhard industrial	895.0	Rice, Long Grain Milled, No. 2 AR-u,w	34.25	Lard,Chicago-u	n.a.
Palladium,Engelhard industrial	2145.0	Sorghum,(Milo) No.2 Gulf-u	n.a.	Soybean oil,crude;Centl IL-u,w	0.6985
Aluminum, LME, \$ per metric ton	*2218.5	SoybeanMeal,Cent IL,rail,ton48%-u,w	466.90	Tallow,bleach;Chicago-h	0.7400
Copper,Comex spot	3.4445	Soybeans,No.1 yllw IL-bp,u	13.5400	Tallow,edible,Chicago-u	n.a.

KEY TO CODES: A=ask; B=bid; BP=country elevator bids to producers; (=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 10/11

Source: Dow Jones Market Data

### **Bonds** | wsj.com/market-data/bonds/benchmarks

### **Tracking Bond Benchmarks**

Return on investment and spreads over Treasurys and/or yields paid to investors compared with 52-week and one of the comhighs and lows for different types of bonds

Total					Total					
return close	YTD total return (%)	Index	— Yield ( Latest Lov		return close	YTD total return (%)	Index		Yield (%	
				v rigii			omberg Fixed Income In			nigii
Broad N	larket Bloombe	rg Fixed Income Indice	es		Wortga			uices		
1900.04	-15.1	U.S. Aggregate	<b>4.860</b> 1.580	4.880	1878.92	-14.2	Mortgage-Backed	4.960	1.810	5.030
U.S. Cor	porate Indexes	Bloomberg Fixed Inco	me Indices		1855.07	-12.9	Ginnie Mae (GNMA)	4.980	1.840	5.110
2744.99	-19.3	U.S. Corporate	<b>5.820</b> 2.130	5.820	1103.13	-14.4	Fannie mae (FNMA)	4.960	1.800	5.020
2696.54	-12.1	Intermediate	<b>5.710</b> 1.560	5.710	1691.11	-14.8	Freddie Mac (FHLMC)	4.940	1.800	5.000
3545.53	-30.3	Long term	6.030 2.940	6.030	542.30	-9.9	Muni Master	3.608	0.895	3.787
532.03	-20.2	Double-A-rated	<b>5.030</b> 1.840	5.040	385.31	-9.4	7-12 year	3.457	0.918	3.641
719.82	-19.7	Triple-B-rated	<b>6.140</b> 2.340	6.140	429.44	-12.7	12-22 year	4.086	1.180	4.271
High Yie	eld Bonds ICE Bo	ofA			399.47	-17.7	22-plus year	4.731	1.673	4.878
447.65	-14.2	High Yield Constraine	d <b>9.568</b> 4.086	9.590	Global G	Government J.F	P. Morgan <sup>†</sup>			
415.98	-17.4	Triple-C-rated	<b>16.665</b> 7.258	3 16.697	518.67	-13.5	Global Government	3.110	0.840	3.110
2995.52	-13.8	High Yield 100	<b>8.694</b> 3.669	8.694	753.07	-10.2	Canada	3.520	1.430	3.530
386.87	-15.9	Global High Yield Constraine	ed <b>9.879</b> 4.549	9.879	334.28	-17.6	EMU§	3.158	0.271	3.158
293.58	-15.9	Europe High Yield Constraine	ed <b>8.462</b> 2.731	8.462	625.18	-17.8	France	2.900	0.150	2.900
U.S Age	<b>ncy</b> Bloomberg	Fixed Income Indices			448.49	-16.5	Germany	2.310	-0.370	2.310
1672.34	-8.7	U.S Agency	<b>4.500</b> 0.900	4.540	282.59	-4.1	Japan	0.790	0.310	0.800
1480.96	-7.4	10-20 years	<b>4.470</b> 0.780	4.520	482.54	-19.0	Netherlands	2.640	-0.200	2.640
3142.83	-24.8	20-plus years	<b>4.850</b> 2.010	4.880	717.43	-30.9	U.K.	4.680	0.720	4.690
2439.24	-15.2	Yankee	<b>5.510</b> 1.780	5.520	710.36	-22.8	Emerging Markets **	8.790	4.744	8.790
*Constrair	ned indexes limit in	dividual issuer concentrat	ions to 2%; th	e High Yi	eld 100 are th	ne 100 largest bon	ds † In local curren	cv § E	uro-zor	ne bond:
** EMBIGI						-	ices; Bloomberg Fixed Incon	,		
							-			_

### **Global Government Bonds: Mapping Yields**

 $Yields \ and \ spreads \ over \ or \ under \ U.S. \ Treasurys \ on \ benchmark \ two-year \ and \ 10-year \ government \ bonds \ in$ selected other countries; arrows indicate whether the yield rose(▲) or fell (▼) in the latest session

	Country/					— \	/ield	(%)			Spread Under/Over U.S. Tre	asurvs. in basis	points
Coupon (%)	Maturity, in years	Latest(●)-	1 0	1	2			Previous	Month ago	Year ago	Latest	Prev	Year ago
4.250	<b>U.S.</b> 2	4.287 ▼					•	4.314	3.571	0.348			
2.750	10	3.901 ▼				•		3.938	3.361	1.579			
0.250	<b>Australia</b> 2	3.310 ▼				•		3.383	3.014	0.099	-98.6	-91.3	-24.3
1.750	10	3.960 ▼				•	)	4.047	3.637	1.735	<b>5.4</b>	10.2	15.9
0.000	France 2	1.866 🛦		(	•			1.859	1.184	-0.663	-243.0	-243.6	-100.5
2.000	10	2.946 🛦			•			2.898	2.210	0.240	-96.0	-104.7	-133.6
0.400	Germany 2	1.823 ▼		(				1.838	1.310	-0.652	-247.2	-245.7	-99.4
1.700	10	2.311 🛦			•			2.303	1.654	-0.082	-159	-164.2	-165.7
0.000	Italy 2	2.947 🛦			•			2.894	2.367	-0.463	-134.8	-140.2	-80.5
2.500	10	4.794 🛦					•	4.696	3.940	0.921	88.8	75.2	-65.4
0.005	<b>Japan</b> 2	-0.057 ▼	•					-0.053	-0.076	-0.114	-435.2	-434.8	-45.6
0.200	10	0.254 ▼	•					0.255	0.251	0.096	-365.1	-369.0	-147.9
0.000	<b>Spain</b> 2	2.175 🛦			•			2.133	1.499	-0.576	-212.0	-216.2	-91.8
2.550	10	3.540 🛦				•		3.475	2.788	0.526	-36.5	-47.0	-105.0
0.125	<b>U.K.</b> 2	3.923 ▼				•	)	4.224	3.025	0.554	-37.3	-7.2	21.2
4.250	10	4.417 ▼					•	4.439	3.083	1.154	51.2	49.4	-42.1

Source: Tullett Prebon, Tradeweb ICE U.S. Treasury Close

### **Corporate Debt**

 $Prices\ of\ firms'\ bonds\ reflect\ factors\ including\ investors'\ economic,\ sectoral\ and\ company-specific$ 

Investment-grade spreads that tightened the most...

Issuer	Symbol	Coupon (%)	Yield (%)	Maturity	Current	ad*, in basis poi One-day change	nts ——— Last week					
Athene Clohal Funding			5.55									
Athene Global Funding		1.716		Jan. 7, '25	121		n.a.					
Svenska Handelsbanken	SHBASS	3.950	5.14	June 10, '27	101	-25	n.a.					
Wells Fargo	WFC	3.000	5.46	April 22, '26	135	-21	145					
PG&E	PCG	3.150	6.65	Jan. 1, '26	252	-12	251					
Credit Suisse	cs	4.875	7.76	May 15, '45	355	-11	389					
Shell International Finance	RDSALN	4.000	5.58	May 10, '46	165	-11	161					
Coca-Cola	ко	2.500	5.13	June 1, '40	95	-10	87					
Eaton	ETN	4.000	5.25	Nov. 2, '32	132	-9	n.a.					
And spreads that widened the most												
Volkswagen Group of America Finance	vw	3.350	6.12	May 13, '25	179	50	128					
Paramount Global	PARA	4.375	7.91	March 15, '43	372	41	316					
Wells Fargo	WFC	4.300	6.10	July 22, '27	195	29	160					
International Business Machines	IBM	4.250	5.85	May 15, '49	194	21	181					
Morgan Stanley	MS	3.625	5.71	Jan. 20, '27	157	21	139					
Banco Santander	SANTAN	4.379	7.12	April 12, '28	300	21	259					
Citigroup	c	3.700	5.69	Jan. 12, '26	154	20	136					
Credit Suisse	cs	3.750	8.64	March 26, '25	430	18	491					

riigii yicia iooaco witii tiic biggest pi iec iiiti casesiii												
Issuer	Symbol	Coupon (%)	Yield (%)	Maturity	Bond Pric	e as % of face v One-day change	/alue <del></del> Last week					
American Airlines	AAL	11.750	9.12	July 15, '25	106.250	0.80	106.500					
Ford Motor Credit		4.389	7.62	Jan. 8, '26	90.875	0.75	93.126					
Transocean	RIG	6.800	13.68	March 15, '38	56.250	0.75	53.250					
OneMain Finance	OMF	7.125	10.12	March 15, '26	91.500	0.67	92.310					
Nokia Oyj	NOKIA	4.375	6.45	June 12, '27	91.750	0.62	90.750					
CSC Holdings	CSCHLD	5.250	9.12	June 1, '24	94.250	0.53	92.500					
Venture Global Calcasieu Pass	VENTGL	4.125	6.88	Aug. 15, '31	82.000	0.38	85.000					
And with the biggest price decreases												
WeWork	WEWORK	7.875	26.86	May 1, '25	66.500	-2.00	69.750					
Qwest	CTL	7.250	6.72	Sept. 15, '25	101.375	-1.16	n.a.					
American Airlines	AAL	3.750	12.75	March 1, '25	82.000	-1.01	82.827					
Teva Pharmaceutical Finance Netherla	nds	4.100	7.75	Oct. 1, '46	60.500	-1.00	62.700					
Intesa Sanpaolo	ISPIM	5.017	9.77	June 26, '24	92.697	-0.92	93.849					
Lumen Technologies	LUMN	7.650	12.38	March 15, '42	65.500	-0.88	69.800					
Bath & Body Works	BBWI	6.875	8.97	Nov. 1, '35	84.050	-0.70	86.750					
Occidental Petroleum	OXY	6.200	6.53	March 15, '40	96.603	-0.65	98.274					

"Estimated spread over 2-year, 3-year, 5-year, 10-year or 30-year hot-run Treasury; 100 basis points = one percentage pt; change in spread shown is for Z-spread.Note: Data are for the most active issue of bonds with maturities of two years or more

Source: MarketAxess

**B8** | Thursday, October 13, 2022

## BIGGEST 1,000 STOCKS

How to Read the Stock		Ne Stock Sym Close Ch		Net Stock Sym Close Chg		Net Stock Sym Close Chg	Net Stock Sym Close Chg
The following explanations apply to Arca, NYSE American and Nasdaq S listed securities. Prices are composit that include primary market trades trades reported by Nasdaq BX (forr	Stock Market te quotations as well as merly Boston),  FD-First day of trading.	DigitalRealty   DLR   89.22   -0.8	7 GileadSciences <b>GILD</b> 65.39 -0.28 1 GitLab <b>GTLB</b> 47.52 -0.95 6 GlobalPayments <b>GPN</b> 107.18 -0.63	LPL Financial LPLA 240.59 0.75 L3HarrisTech LHX 224.17 -7.33 LabCorpofAmerica LH 204.83 0.53 LamResearch LRCX 323.98 -3.07	Nordson NDSN 210.83 -3.68 NorfolkSouthern NSC 211.32 -1.47 NorthernTrust NTRS 83.74 -0.34	RioTinto         RIO         55.45         -0.71           RitchieBros         RBA         60.17         -0.24           Rivian         RIVN         32.35         0.02           RobertHalf         RHI         80.30         0.81	TexasInstruments TXN       151.55       -1.90         TexasPacLand TPL       2055.37       -1.38         TexasRoadhouse TXRH       94.09       2.71         Textron       TXT       60.46       -0.95
Chicago Stock Exchange, Cboe, NYS Nasdaq ISE. The list comprises the 1,000 largest based on market capitalization. <b>Underlined quotations</b> are those st	standards t companies <b>If</b> -Late filing <b>q</b> -Temporary exemption from Nasdaq	DocuSign   DOCU   45.35   0.8   DolbyLab   DLB   63.46   0.0   DollarGeneral   DG   237.68   -1.9   DollarGeneral   DLR   13.71   -2.9   DollarGeneral   DLR   -2.9   DollarGeneral   DLR   DLR	2 Globant <b>GLOB</b> 166.82 -3.32 5 GlobeLife <b>GL</b> 106.84 0.15 8 GlobusMedical <b>GMED</b> 59.20 -0.39	LamarAdv LAMR 83.33 -0.92 LambWeston LW 82.88 1.53 LasVegasSands LVS 36.50 0.14 LatticeSemi LSCC 47.41 -0.72 Lear LEA 120.63 -1.41	NortonLifeLock <b>NLOK</b> 20.84 -0.08 Novartis <b>NVS</b> 75.31 -0.55 NovoNordisk <b>NVO</b> 103.98 -0.41	Robinhood         HOOD         10.66         0.22           Roblox         RBLX         37.19         2.63           RocketCos.         RKT         6.73            Rockwell         ROK         225.34         -0.59           ROK         225.34         -0.59         -0.44	ThermoFisherSci TMO 500.67 -0.14 ThomsonReuters TRI 99.69 -1.11 3M MMM 108.95 0.11 Toast TOST 17.92 0.70
large changes in volume compared issue's average trading volume.  Boldfaced quotations highlight tho whose price changed by 5% or more previous closing price was \$2 or high	v-Trading halted on primary market. se issues e if their vj-In bankruptcy or receivership or being reorganized under the Bankruptcy Code,	DominionEner D   62.66 -2.1   Domino's   DPZ   301.76 -1.7   Donaldson   DCI   50.20 -0.5   DoorDash   DASH   46.72   1.8   Dover   DOV   117.37 -2.2	4 GoldFields <b>GFI</b> 8.21 -0.10 3 GoldmanSachs <b>GS</b> 295.31 1.10 7 Grab <b>GRAB</b> 2.48 -0.09	Lear LEA 120.63 -1.41 LegendBiotech LEGN 38.50 -0.30 Leidos LDOS 89.46 -1.81 Lennar B LENB 61.47 -0.88 Lennar A LEN 76.51 -1.27	NuHoldings NU 4.11 0.01 Nucor NUE 119.31 0.45 Nutrien NTR 82.75 0.24	I RogersComm B RCI         37.05         -0.41           I Roku         ROKU         53.06         1.36           Rollins         ROL         36.20         -0.16           RoperTech         ROP         365.95         1.82           RossStores         ROST         84.51         -1.63	Toro         TTC         94.12         -1.46           TorontoDomBkTD         58.53         -0.06           TotalEnergies         TTE         48.32         -0.48           ToyotaMotor         TM         135.00         -0.06           TractorSupply         TSCO         203.61         2.85
Wall Street Journal stock tab	bles reflect composite regular trading as of 4 p.m. and losing prices from 4 p.m. the previous day.	Dow         DOW         43.81         -0.1           DrReddy'sLab RDY         51.12         -0.6           DraftKings         DKNG         13.49         -0.1           Dropbox         DBX         20.03         -0.0	4 Grainger <b>GWW</b> 506.24 -7.85 7 GraphicPkg <b>GPK</b> 20.08 -0.15 9 GpoAeroportuar <b>PAC</b> 137.20 -0.94	Lennoxinti Lii 221.38 -2.98 LiAuto Li 20.39 0.71 I LibertyBroadbandA LBRDA 74.43 -1.19 I LibertyBroadbandC LBRDK 73.45 -0.85	O P Q OGE Energy OGE 33.98 -0.75	RoyalBkCanada RY	TradeDesk         TTD         52.62         0.12           Tradeweb         TW         53.14         0.93           TraneTech         TT         144.99         -2.32           TransDigm         TDG         509.83 -12.76
Stock Sym Close Chg	Stock         Sym Close Chg         Stock         Sym Close Chg         Net Stock         Sym Close Chg         Net Sym Close Chg           utoZone         AZO 2245,99-21.52         CarrierGlobal CARR 34.88 -0.27         -0.27	DukeEnergy         DUK         85.97         -3.5           DuPont         DD         51.58         -0.2           Dynatrace         DT         34.25         .           EMCOR         EME         121.40         -1.5	2 HDFC Bank <b>HDB</b> 56.87 0.40 HF Sinclair <b>DINO</b> 55.56 1.16	LibertyGlobal C LBTYK 16.54 -0.27 LibertyGlobal A LBTYA 15.62 -0.23 LibertyFormOne A FWONA 54.17 -0.52 LibertyFormOne C FWONK 60.19 -0.55	OccidentalPetrol <b>OXY</b> 65.11 1.08	RyanSpecialty <b>RYAN</b> 41.13 -0.01   Ryanair	TransUnion Travelers         TRU         56.61         0.86           Travelers         TRV         159.16         -0.30           Trimble Trip.com         TCOM         23.86         0.23
ABB ABB 24.86 0.09 ADT ADT 8.21 0.04 AV	Alaria AVR 92.68 0.33 CaseysGenStores CASY 202.52 -1.79 AVB 171.67 -3.04 Catalent CTLT 73.20 0.02 AVR 19.42 -0.45 Caterpilla CAT 179.50 -0.25 AVTR 19.42 -0.45 Celanese CE 89.92 -1.09 ervDennison AVY 163.46 -2.91 CelsiusHIdd CELH 90.34 4.03	ENI E 21.95 -0.2 EOG Rscs EOG 123.46 0.7 EPAM Systems EPAM 314.87 -5.1 EQT EQT 43.55 .	6 H World <b>HTHT</b> 31.04 -0.01 8 Haleon <b>HLN</b> 5.97 -0.07 Halliburton <b>HAL</b> 29.80 0.24	LibertyBraves A BATRA 28.86 -0.02 LibertyBraves C BATRK 28.26 -0.13 LibertySirius C LSXMK 38.53 -0.54 LibertySirius A LSXMA 38.81 -0.61	OldRepublic	! SBA Comm         SBAC 244.58 -10.65           ! SEI Investments         SEIC         47.54 -0.64           ! SK Telecom         SKM         18.77 -0.02           ! SS&C Tech         SSNC         46.46 -0.49	TruistFinl         TFC         42.07         -0.36           Twilio         TWL0         67.23         -0.60           Twitter         TWT         49.94         -0.13           TylerTech         TYL         328.15         -1.61
AES AES 24.13 -0.55 AV Aflac AFL 57.41 -0.69 AX AGCO AGCO 106.36 -1.57 BC	risBudget <b>CAR</b> 182.50 -0.32 CenovusEnergy <b>CVE</b> 17.16 0.04 conEnterprise <b>AXON</b> 120.58 -0.77 Centene <b>CNC</b> 74.32 -1.00	EastWestBncp EWBC 68.93 -0.9 EastGroup EGP 142.08 -1.3 EastmanChem EMN 71.62 -0.5 Eaton ETN 132.45 -0.9	0 Hasbro <b>HAS</b> 67.72 -0.04 5 HealthcareRealty <b>HR</b> 19.19 -0.26 7 HealthpeakProp <b>PEAK</b> 22.16 -0.04	LifeStorage LSI 103.91 -1.80 EliLilly LLY 324.57 -3.03 LincolnElectric LECO 122.44 -0.93 LincolnNational LNC 45.62 0.13	ON Semi ON 58.95 -0.52 OpenText OTEX 25.74 0.24 OptionCare OPCH 34.02 0.35 Oracle OPCH 63.78 1.37	StoreCapital         STOR         31.31         -0.04           SVB Fin         SIVB         335.25         -0.54           Salesforce         CRM         142.29         -0.28           Samsara         IOT         11.67         -0.30	TysonFoods TSN 63.78 -0.17 UBS Group UBS 13.99 -0.16 UDR UDR 38.16 -0.40 UGI 31.76 -1.04
Ansys ANSS 201.95 1.62 BJ' APA APA 40.75 0.27 BO ASETech ASX 4.65 0.04 BP	'sWholesale <b>BJ</b> 71.60 -0.72 CeridianHCM <b>CDAY</b> 55.68 -0.35 OK Fin <b>BOKF</b> 92.74 0.79 CharlesRiverLabs <b>CRL</b> 197.37 0.26	eBay EBAY 37.13 0.1 Ecolab ECL 140.53 -2.1 Ecopetrol EC 9.36 -0.1 EdisonInt EIX 55.56 -1.9 EdwardsLife EW 82.65 0.5	7 Heico A <b>HEI.A</b> 113.70 -1.82 4 HenrySchein <b>HSIC</b> 65.74 -2.26 Hershey <b>HSY</b> 224.53 -0.93	Linde LIN 271.59 0.59 LiveNationEnt LYV 77.33 -0.42 'I LloydsBanking LYG 1.71 -0.08 LockheedMartin LMT 397.42 -13.64 Loews L 51.48 -0.44	Orange	Sanofi         SNY         39.24         -0.45           SareptaTherap SRPT         112.13         3.15           Sasol         SSL         16.93         0.02           Schlumberger         SLB         42.02         0.26           SchwabC         SCHW         71.89         0.18	US Foods USFD 26.41 -0.26 Uber UBER 25.98 1.32 Ubiquiti UI 297.34 -0.97 UlTaBeauty ULTA 398.02 1.22
' AT&T         T         14.63         -0.18         Bal           AbbottLabs         ABT         100.08         -1.67         Bal           AbbVie         ABBV         139.98         -1.53         Bar	skerHughes <b>BKR</b> 22.64 0.39 CheckPoint <b>CHKP</b> 110.00 0.68	Elastic	0 HessMidstream <b>HESM</b> 26.37 -0.39 3 HewlettPackard <b>HPE</b> 12.35 0.14 7 Hilton <b>HLT</b> 121.00 3.12	Loews L 51.48 -0.44  LogitechIntl LOGI 43.49 -0.08  Lowe's LOW 193.87 -2.56  Lucid LCID 13.09 0.44  Iululemon LULU 295.50 -0.18	OwensCorning <b>OC</b> 85.73 -0.75 PDC Energy <b>PDCE</b> 66.39 0.24 PG&E <b>PCG</b> 14.07 -0.15	SchwabC         SCHW         71.89         0.18           Sea         SE         57.36         -0.13           Seagate         STX         51.82         -0.15           Seagen         SGEN 133.29         0.11           SealedAir         SEE         44.98         -0.18	Unilever UL 43.52 0.20 UnionPacific UNP 192.12 -0.52 UnitedAirlines UAL 34.23 0.30 UnitedMicro UMC 5.59 0.23
AcadiaHealthcare ACHC 80.42 0.16 Bai Accenture ACN 250.07 -1.79 Bai ActivisionBliz ATVI 73.50 -0.05 Bcc	IncodeChile         BCH         18.26         0.14         ChesapeakeEner CHK         99.51         2.91           IncSanBrasil BSBR         5.70         -0.10         Chevron         CVX         157.64         0.47           SoantChile         BSAC         14.32         0.16         ChewyA         CHW         34.88         0.85           ncoSantander SAN         2.34         -0.03         ChinaEastrnAir CEA         16.95         -0.22	EmersonElec   EMR   77.50 -0.5   Enbridge   ENB   35.62 -0.4   Endeavor   EDR   21.06   0.0   EnergyTransfer   ET   11.50 -0.0	0 HomeDepot <b>HD</b> 280.52 -2.37 1 HondaMotor <b>HMC</b> 21.76 -0.16 6 Honeywell <b>HON</b> 172.79 -0.83	LumenTech LUMN 6.63 -0.04 LyondellBasell LYB 77.23 -0.49	POSCO PKX 41.39 1.69 PPG Ind PPG 109.69 -1.07 PPL 23.98 -0.76	Sempra         SRE         140.70         6.26           SensataTechs         ST         37.99         -0.19           SentinelOne         S         22.45         -0.65           ServiceCorp         SCI         61.17         0.25	UPS B UPS 159.48 0.07 UnitedRentals URI 276.58 -1.18 US Bancorp USB 39.11 0.32 UnitedTherap UTHR 211.25 -0.23
AdvOrainageSys WMS 126.68 -2.14   Bar AdvMicroDevices AMD 57.85 0.22   Bar 1 Aegon AEG 3.77 -0.05   Bar	inColombia CIB         24,95         0.15         ChinaSoAirlines ZNH         26.88         0.65           knofAmerica BAC         29,86         0.09         Chipatle         CMG         1252.54         31.48           nkofMontreal BMO         84,07         0.81         ChioeHotels         CHH         119.01         2.38           nkNY Mellon BK         37.29         -1.19         Chubb         CB         185.00         -0.70	EnphaseEnergy ENPH 248.13 -7.6   Entegris   ENTG 76.20 -1.5   Entergy   ETR 96.58 -4.5   EnterpriseProd EPD 24.64 -0.1	3 DR Horton <b>DHI</b> 71.25 -1.45 7 HostHotels <b>HST</b> 16.62 0.09 8 HowmetAerospace <b>HWM</b> 32.11 -0.89	M&T Bank MTB 178.82 -0.27 MGM Resorts MGM 30.89 0.33 MPLX MPLX 30.98 -0.48 MSCI MSCI 401.65 2.30	PalantirTech PLTR 8.07 0.03	! ServiceNow         NOW 369.13         -2.17           ! ShawComm B SJR         23.99         -0.35           Shell         SHEL         50.32         0.14           SherwinWilliams SHW         201.51         -3.00	UnitedHealth       UNH       499.96       0.15         UnitySoftware       J       30.77       -0.34         UniversalHealthB       UHS       90.50       -1.56         UnumGroup       UNM       40.66       -0.43
AgilentTechs A 125.69 0.05 l Bar agilon health AGL 22.46 -0.16 Bar AgnicoEagle AEM 41.95 0.46 Bat	NovaScotia   BNS   46.29   -0.13   ChunghwaTel   CHT   34.06   0.22   ChurchkDwight   CHD   71.88   -0.03   ChurchkDwight   CHD   71.88   -0.03   ChurchkDwight   CHD   71.89   -0.93   ChurchkDwight   CHD   192.95   -0.93   ChurchkDwight   192.95   -0.93	! Equifax         EFX         164.70         0.8           ! Equinix         EQIX         511.86 -12.4           Equinor         EQNR         34.41         -0.2           Equitable         EQH         27.17         -0.3	4 'HubSpot <b>HUBS</b> 265.71 4.55 1 Humana <b>HUM</b> 494.19 -4.30 5 JBHunt <b>JBHT</b> 165.51 1.86	MagellanMid MMP 48.09 0.21  MagnaIntl MGA 47.30 0.11  ManhattanAssoc MANH 127.64 -1.68  ManulifeFin MFC 15.36 -0.05	ParamountA PARAA 21.39 0.38 ParamountB PARA 18.54 0.30 ParkerHannifin PH 253.17 -1.83	ShinhanFin         SHG         24.26         0.15           ShockwaveMed SWAV         269.71         0.51           Shopify         SHOP         25.99         0.32           Sibanye-Stillwater SBSW         9.33         -0.07	VF         VFC         29.05         0.09           VICI Prop         VICI         30.59         -0.13           VailResorts         MTN         221.06         4.66           Vale         VALE         13.66         -0.19
Airbnb         ABNB         112.35         5.53         Ber           AkamaiTech         AKAM         78.41         0.35         Ber           Albemarle         ALB         251.45 - 21.54         Ber	kterint         BAX         55.00         -0.81 clinitantifier         Clincinatifier         Clint         97.10         0.54 clints           lefidene         BGNE         151.30         25.79 left         1 CiscoSystems         CSCO         39.27 clint         -0.31 clint           ntleySystems         BSY         32.02 clint         0.27 clittigroup         C         40.84 clint         -0.13 clittigroup           vrkley         WRB         68.12 clint         0.06 clittigroup         CFG         34.17 clint         -0.13 clittigroup	EquityLife ELS 60.35 -0.8 EquityResdntl EQR 61.99 -1.0 Erielndemnity A ERIE 231.01 -3.5 I EssentialUtil WTRG 39.41 -1.3 EssexProp ESS 224.02 -2.8	6 HuntingIngalls <b>HII</b> 226.70 -8.00 6 HyattHotels <b>H</b> 82.21 1.57 1 ICICI Bank <b>IBN</b> 20.87 -0.13	MarathonOil         MRO         27.44         0.40           MarathonPetrol MPC         104.96         1.53           Markel         MKL         1126.47 - 19.94           MarketAxess         MKTX         237.15         5.55	PaycomSoftware <b>PAYC</b> 311.37 -8.05 Paylocity <b>PCTY</b> 225.21 -3.90 PayPal <b>PYPL</b> 83.81 0.72 Pearson <b>PSO</b> 9.99 0.01	SignatureBank SBNY 148.45   -0.23   SignifyHealth SGFY   29.34   0.12   SimonProperty SPG   93.68   -1.14   SiriusXM   SIRI   5.96   -0.01   Skyworks   SWKS   79.38   -1.78	ValeroEnergy         VLO         115.20         5.51           ValmontInds         VMI         283.48         -5.09           VeevaSystems         VEV         10.50         -1.76           Ventas         VRS         36.54         -0.45           VeriSign         VRSN         175.68         0.79
Alcoa         AA         39.86         2.01         Ber           Alcon         ALC         56.67         -0.44         Ber           AlexandriaRlEst ARE         133.06         -1.42         Ber	rkHathwy A BRKA 399251-398501 CleanHarbors CLH 112.46 -1.09 clearwayEnergyA CWENA 28.45 -0.78 ClearwayEnergyA CWENA 28.45 -0.78 ClearwayEnergyA CWENA 28.45 -0.78 ClearwayEnergyA CWENA 28.45 -0.78 ClearwayEnergyA CWENA 30.98 -0.93 ClearwayEnergyA CWENA 30.98 -0.98	EsteeLauder EL 215.10 1.0 Etsy ETSY 106.16 0.5 EverestRe RE 260.84 -6.8	5 IdexxLab IDXX 328.12 2.41 6 ING Groep ING 8.50 0.08 5 Invesco IVZ 13.87 -0.26	Marriott   MAR 141.87   3.08   Marsh&McLen   MMC 151.99   -0.37   MartinMarietta   MLM   311.48   -5.94   1   MarvellTech   MRVL   37.98   -0.68   Masco   MAS   48.42   -0.36   Masco   MAS   48.42   -0.36   Masco   MAS   -0.36   Masco   MAS	PenskeAuto PAG 101.39 0.58 Pentair PNR 40.58 -0.27 Penumbra PEN 182.22 2.34	SmithAO         AOS         49.13         -0.18           Smith&Nephew SNN         22.26         -0.50           Smucker         SJM         140.94         -0.52           Snap         SNAP         10.51         0.20	VeriskAnalytics VRSK 168.10 -1.40 VeriskAnalytics VRSK 168.10 -2.6 VertexPharm VRTX 290.13 -5.03 Viatris VTRS 9.39
AlignTech ALGN 208.05 -0.40 Bio Alleghany Y 841.47 -0.53 Bio Allegion ALLE 90.50 -1.08 Bio	o-Techne TECH 282.87 0.89 Cleveland-Cliffs CLF 15.20 -0.15 o-FadLab A BIO 384.07 -6.06 Clorox CLX 129.12 0.88 open BIB 253.67 -0.40 Cloudflare NET 51.46 1.48 oMarinPharm BMRN 88.95 0.88 Coca-Cola NO 55.14 0.66	Exelon <b>EXC</b> 35.96 -1.5 Expedia <b>EXPE</b> 93.14 1.3 ExpeditorsIntl <b>EXPD</b> 88.87 -0.1	1     I con     ICLR     177.11     0.86       2     IDEX     IEX     200.40     -5.16       8     IllinoisToolWks ITW     185.15     -0.88	Masco   MAS   48.42 -0.36   Masimo   MASI   133.63   4.00   Mastercard   MA   283.38 -2.67   MatadorRscs   MTDR   61.64   1.55   MatchGroup   MTCH   46.76 -0.38	PerformanceFood <b>PFGC</b> 45.51 -0.30 PerkinElmer <b>PKI</b> 117.01 -1.99 PetroleoBrasil <b>PBR</b> 13.89 -0.11	SnapOn         SNA         207.79         -1.25           Snowflake         SNOW 158.53         5.00           SOQUIMICH         SQM         83.12         -7.62           I SolarEdgeTech         SEDG         200.60         -2.99	Visa         V         178.24         -0.90           Vistra         VST         21.44         -0.36           VMware         VMW         105.95         0.18           Vodafone         VOD         11.07         -0.11
AllyFinancial <b>ALLY</b> 29.05 0.26 Bla AlnylamPharm <b>ALNY</b> 185.11 -1.57 Bla Alphabet C <b>GOOG</b> 98.30 0.25 Bla	oNTech         BNTX         136.65         7.16         Coca-ColaEuro CCEP         45.27         0.59           ackKrlock         BLK         521.01         -0.04         Cognex         CGNX         41.97         -0.77           ackstone         BX         85.54         2.10         CoinbaseGlb         COIN         69.95         -0.21	ExtraSpaceSt EXR 166.80 -1.4 ExxonMobil XOM 98.43 0.4 F5 FFIV 139.19 0.1 FMC FMC 114.70 2.2	3 ImperialOil IMO 45.81 0.44 5 Incyte INCY 67.51 0.26 8 Infosys INFY 17.10 -0.03	Mattel MAT 19.72 -0.05 McCormick MKC 74.48 -1.36 McDonald's MCD 237.06 0.01 McKesson MCK 345.39 -6.16	Pfizer PFE 42.03 0.11 PhilipMorris PM 85.67 0.05 Phillips66 PSX 92.94 2.60	! Sony         SONY         63.17         -1.00           SouthState         SSB         82.45         1.03           Southern         SO         61.50         -2.14           SoCopper         SCCO         48.07         0.79	VoyaFinancial VOYA 62.38 -0.83 VulcanMatls VMC 154.07 -2.20 W X Y Z
Altria MO 44.75 0.40 Bo Amazon.com AMZN 112.90 0.69 Bu Ambev ABEV 2.79 -0.01 Bo	ueOwlCapital <b>OWL</b> 8.58 -0.24	FTI Consulting FCN 173.26 -5.3 FactSet FDS 401.66 -13.0 Fairlsaac FICO 405.31 -0.4 Fastenal FAST 45.67 -0.7	5 Insulet <b>PODD</b> 232.55 -0.23 2 Intel <b>INTC</b> 25.33 0.29 1 InteractiveBrkrs <b>IBKR</b> 68.68 0.65	MedicalProp	Pintadeducto   PDB   35.74   0.23	SouthwestAir LUV   31.59   0.18   SouthwesternEner SWN   6.73   0.03   Splunk   SPLK   68.01   -2.16   Spotify   SPOT   83.18   1.05	WEC Energy WEC 82.23 -2.95 WEX WEX 134.33 -1.24 W.P.Carey WPC 70.98 -0.54 WPP 40.81 -0.15
Amdocs <b>DOX</b> 79.19 -1.16 Boo Amerco <b>UHAL</b> 523.62 -0.21 Boo AEE 74.94 -2.94 Boo	skingHidgs         BKNG 1675.62         41.01         SABESP         SBS         10.57         -0.25           loozAllen         BAH         94.27         -2.22         Congargarands         CAG         33.58         -0.31           rgydwarner         BXP         71.17         -0.04         Confluent         CFLT         23.21         2.59           rstornSci         BSX         39.60         0.04         ConocoPhillips         CP         116.30         0.72	FederalRealty         FRT         90.40         -0.3           FedEx         FDX         152.89         0.8           Ferguson         FERG 106.25         -2.3           Ferrari         RACE 182.50         -0.6           FidNatlFin         FNF         38.24	1 InterContinentl <b>IHG</b> 49.04 0.56 2 IBM <b>IBM</b> 117.57 -0.23	MetaPlatforms META 127.50 -1.04   MetLife   MET   62.58 -0.74   MettlerToledo MTD   1102.67 -10.59   MicrochipTech MCHP   57.84 -1.71	PlainsAllAmPipe <b>PAA</b> 11.12 -0.03 PlainsGP <b>PAGP</b> 11.70 -0.01 PlugPower <b>PLUG</b> 18.93 -0.86 Polaris <b>PII</b> 100.15 0.42	1 StanleyBlackDck SWK       75.72       -0.93         Starbucks       SBUX       86.87       0.66         StateStreet       STT       61.6       -0.65         SteelDynamics       STLD       78.87       -0.24         Stellantis       STLA       11.77       -0.04	Wabtec         WAB         84.41         -1.41           WalgreensBoots WBA         31.94         -0.67           Walmart         WMT         131.17         -1.50           WarnerBrosA         WBD         11.66         0.06
AmericaMovil A <b>AMOV</b> 16.41 -0.16 Bri AmerAirlines <b>AAL</b> 12.70 0.44 Bri AEP <b>AEP</b> 81.74 -3.13 Bro	SistolMyers   SMY   69.28   -0.37   ConEd   ED   79.47   -2.13   ConstBrands   ASTZ   23.31   1.92   coadcom   AVGO   43.057   -0.19   coadfidgeFinil BR   139.67   -2.73   ConstBrands   BSTZB   266.04   -0.95   coadfidgeFinil BR   139.67   -2.73   constBlattonEner CEG   82.16   -0.72   coadfidgeFinil BR   139.67   -2.73   coadfidgeFinil BR   -2.73   -2.73   coadfidgeFinil BR   -2.73   -2.73   coadfidgeFinil BR	I FidNatlinfo         FIS         73.78         -0.5           FifthThirdBncp         FITB         32.22         -0.2           FirstCitizBcshA         FCNCA         824.80         -3.3           FirstFinBkshs         FFIN         42.73         -0.6	0 Interpublic IPG 26.49 0.32 0 Intuit INTU 388.06 4.58 9 IntuitiveSurgical ISRG 186.34 0.44	MicronTech   MU   52.75 -0.96   Microsoft   MSFT 25.75 0.34   MidAmApt   MAA 145.12 -1.75   Middleby   MIDD 133.65 -1.10   MitsubishiUFJ   MUFG   4.35 -0.06	Pool   Pool 317.12 -2.30   PrincipalFin   PFG   76.04   0.33   ProcoreTech   PCOR   49.34   1.10	Steris         STE         162.27         -6.39           STMicroelec         STM         30.63         -0.19           Stryker         SYK         208.65         -2.81           SumitomoMits         SMFG         5.56         -0.05	WarnerMusic         WMG         23.67         0.96           WasteConnections         WCN         127.37         -2.10           WasteMgt         WM         154.35         -1.92           Waters         WAT         270.72         -1.27           Watsco         WSO         263.34         -0.89
AmericanFin	cookfieldMgt BAM         38.43         0.40 continentalRss CLR         69.37         0.34 continentalRss CLR         69.37         0.35 continentalRss CLR         69.37	FirstHorizon FHN 23.23 0.0 FirstIndRlty FR 44.10 -0.2 FirstRepBank FRC 129.54 -0.9 FirstSolar FSLR 126.88 -4.4	3 IridiumComm IRDM 46.82 -0.32 5 IronMountain IRM 45.39 -0.62 4 ItauUnibanco ITUB 5.33 -0.11	Mizuhofini MFG 2.23 -0.02  Moderna MRNA 130,72 10.00  Mohawkinds MHK 96.29 -0.77  MolinaHealthcare MOH 351.00 -1.69	Progressive PGR 121.40 -2.05 Prologis PLD 100.43 -0.20 ProsperityBcshs PB 70.05 0.18	! SunComms     SUI     123.22     -2.92       ! SunLifeFinancial SLF     39.04     -0.35       SuncorEnergy     SU     31.33     0.06       Suzano     SUZ     8.91     -0.05	WebsterFin         WBS         45.67         -0.35           WellsFargo         WFC         40.51         0.28           Welltower         WELL         57.91         -0.26           Wescolntl         WCC         121.23         -1.78
MericoldRealty COLD 23.33 -0.61 Bro Ameriprise AMP 263.40 -2.89 Bru AmerisourceBrgn ABC 138.94 -2.77 Bui	own-Forman B BF.B         64.46         -0.19         Corning         GLW         30.08         0.18           own-Forman A BF.A         65.50         -0.14         Corteva         CTVA         60.79         0.03           uker         BRKR         54.44         -0.31         Costar         CGSP         71.45         -0.92           uldersFirst         BLDR         62.82         -1.37         Costco         COST 466.38         -5.64           upper         BG         87.60         1.00         CoterraEnergy CTRA         29.80         1.00	FirstEnergy FE 36.15 -0.5 Fiserv FISV 93.70 -1.7 FiveBelow FIVE 13.39 -3.7 FleetCorTech FLT 169.26 -1.9 Flex FLEX 16.87 -0.0	JD.com JD 46.40 0.13 JPMorganChase JPM 103.61 1.65	MolsonCoorsB <b>TAP</b> 48.76 1.01 MolsonCoorsA <b>TAP.A</b> 61.04 2.03 Mondelez <b>MDLZ</b> 56.83 0.55 MongoDB <b>MDB</b> 181.80 1.75	Prudential <b>PGR</b> 19.36 -0.43 1 PublicServiceEnt <b>PEG</b> 53.48 -1.65 PublicStorage <b>PSA</b> 286.91 -3.00	Switch         SWCH         33.81         0.01           SynchronyFin         SYF         31.29         0.37           Synopsys         SNPS         276.19         -1.15           Sysco         SYY         72.91         -0.55	WestFraserTimber WFG       73.85       -0.75         WestPharmSvcs WST       239.12       -0.56         WestAllianceBcp WAL       62.52       -0.08         WesternDigital WDC       34.28       -0.54
Amgen AMGN 246.44 1.00 Bur Amphenol APH 67.15 -0.53 CA AnalogDevices ADI 138.59 -0.21 CB	Coterratherery CTRA 2	Flex	B JackHenry JKHY 181.39 -2.60 JacobsSolns J 109.58 -2.38 JamesHardie JHX 20.46 -0.22	MonolithicPower MPWR 322.98 -5.03   MonsterBev   MNST 89.57 0.11   Moody's   MCO 239.55 -1.33   MorganStanley MS   76.60 -0.40	PureStorage PSTG 26.44 -0.60 Qiagen QGEN 42.61 -0.44 V Qorvo QRVO 78.34 -0.28 V Qualcomm QCOM 108.64 -1.39	¹ TC Energy         TRP         39.66 -0.40           TD Synnex         SNX         81.77 0.33	WesternMidstrm WES       25.98       0.27         Westlake       WLK       88.17       0.17         WestRock       WRK       31.18       -0.23         Weyerhaeuser WY       29.39       -0.07
AnnalyCap NLY 16.96 0.08 CF AnteroResources AR 34.32 0.67 CG Aon AON 273.87 -2.36 CH	Industries <b>CF</b> 102.55 -0.28 CrownCastle <b>CCI</b> 129.03 -3.50	Fortis	9 JefferiesFin <b>JEF</b> 31.15 -0.03 J&J JNJ 162.69 -0.04 JohnsonControls <b>JCI</b> 51.03 -0.02	Morningstar   MORN 214.55 -0.73   Mosaic   MOS 50.12 0.56   MotrorolaSol   MSI 223.33 -0.92   MurphyOil   MUR 42.49 0.76   MurphyUSA   MUSA 279.70 3.08	QualtricsIntl XM 9.95 -0.18 QuantaServices PWR 126.36 -3.08 QuestDiag DGX 124.39 0.03	TE Connectivity TEL   108.14 -1.78     Telus TU   19.26 -0.27     TelusIntl TIXT   24.94 -0.31     TFI Intl TFII   95.88   0.88     TJX TJX 63.88 -0.48	WheatonPrecMet         WPM         32.02         0.30           WhirIpool         WHR         142.95         0.01           Williams         WMB         29.36         -0.39           Williams-Sonoma         WSM         123.96         0.21           WillisTowers         WTW         201.05         -1.03
ApolloGlbMgmt <b>APO</b> 48.30 0.62 1 CN Apple <b>AAPL</b> 138.34 -0.64 CN	AS Energy CMS 53.36 -2.06 Cummins CMI 218.10 -1.97  AS Fin CNA 37.85 -0.50 D E F	FoxB FOX 28.29 -0.2 Franco-Nevada FNV 118.41 0.8 FranklinRscs BEN 21.11 -0.2 FreeportMcM FCX 28.84 -0.3	4 JuniperNetworks JNPR 25.91 0.10 8 KB Financial KB 30.94 -0.22 7 KBR KBR 44.94 -1.17 4 KE Holdings BEKE 14.01 -0.13	NICE NICE 184.26 -1.24 NIO NIO 12.88 0.05 NOV NOV 17.89 NRG Energy NRG 39.75 -1.31	RBC Bearings <b>RBC</b> 212.14 -4.91 RELX <b>RELX</b> 24.55 -0.04	T-MobileUS TMUS 132.94 -4.21 TPG TPG 28.70 0.24 TROWePrice TROW 98.07 -5.31 TaiwanSemi TSM 64.11 0.66	WillScotMobile WSC 40.23 -0.99 Wipro WIT 4.59 -0.16 Wolfspeed WOLF 102.17 -2.66 WoodsideEnergy WDS 20.60 -0.40
Aramark ARMK 33.60 0.62 Cac ArcelorMittal MT 20.72 0.01 Cac	XX	FreseniusMed FMS 12.84 -0.2 FullTruck YMM 6.16 -0.0	9 KKR KKR 44.38 0.24	NVR NVR 4009.25-158.43 1 NXP Semi NXPI 140.28 -3.47 Nasdaq NDAQ 57.58 -0.52 1 NationalGrid NGG 47.26 -1.38	RINCM RCM 17.36 -0.19 RPM RPM 91.16 -1.83 RalphLauren RL 92.52 1.96	TakeTwoSoftware TTWO 116.55       1.46         TakedaPharm TAK       12.82       0.01         Tapestry       TPR       31.21       0.58         TargaResources TRGP       64.84       -1.01	Workday WDAY 143.93 1.23 WynnResorts WYNN 58.71 -0.93 XP 19.12 -0.12 XcelEnergy XEL 57.94 -1.89
ArcherDaniels <b>ADM</b> 86.03 -0.27 <b>Ca</b> AresMgmt <b>ARES</b> 61.67 0.21 Ca arGEN-X <b>ARGX</b> 345.84 1.27 CI		GFLEnvironmental GFL 24.23 -0.2 GSK GSK 30.37 -0.0 Gallagher AJG 174.87 -1.2 GameStop GME 25.36 0.0	6 KeurigDrPepper <b>KDP</b> 37.71 0.16 6 KeyCorp <b>KEY</b> 15.59 -0.08 9 KeysightTechs <b>KEYS</b> 153.78 -2.22	NatlRetailProp NNN         38.96         -0.29           I NatWest         NWG         4.71         -0.15           NetApp         NTAP         62.33         0.27           NetEase         NTES         71.89         -0.99	RegalRexnord <b>RRX</b> 82.99 -1.60 regalRexnord <b>RRX</b> 150.08 -2.34	Target TGT 154.16 -0.34 TataMotors TTM 23.67 0.20 TeckRscsB TECK 32.36 0.49 TeledyneTech TDY 332.08 -1.08	XPeng XPEV 9.55 0.14 Xylem XYL 87.22 -1.83 YUM 105.54 0.29 YUMChina YUMC 44.77 0.53
ArrowElec <b>ARW</b> 91.63 -0.78 Car AscendisPharma <b>ASND</b> 110.90 0.90 Car AspenTech <b>AZPN</b> 244.13 -3.00 Car	Note	Gaming&Leisure GLP  46.61 -0.0   Garmin GRMN 78.47 -0.0   Gartner IT 28.26 -0.9   Generac GNRC 149.98 -2.0   GeneralDynamics GD 223.32 -4.4	3 KimberlyClark <b>KMB</b> 112.86 1.49 8 KimcoRealty <b>KIM</b> 18.87 -0.01 8 KinderMorgan <b>KMI</b> 17.05 -0.11	Netflix   NFLX 220.87   6.58	RegenPharm REGN 728.06 -9.35 RegionsFin RF 19.60 -0.29 ReinsGrp RGA 130.12 -0.78	Teleflex	ZTO Express ZTO 22.95 0.42 ZebraTech ZBR 261.03 11.02 Zendesk ZEV 76.29 -0.01 1 Zillow C Z 28.76 0.72 1 Zillow A ZG 28.81 0.67
AstraZeneca AZN 55.07 -0.23 Car Atlassian TEAM 203.37 -4.27 Car AtmosEnergy ATO 99.26 -2.94 Car	rdinalHealth CAH 67.86 2.47 DeutscheBank DB 7.61 0.17 rilsle CS 28.81.2 5.37 DevonEnergy DVN 69.40 0.83 riryle CG 25.78 0.10 DexCom DXCM 98.32 1.36 rrMax KMX 62.11 -0.93 Diageo DEO 16.30 2.32	GeneralFilec GE 64.74 0.7 GeneralMills GIS 77.36 -0.0 GeneralMotors GM 32.20 0.1 Genmab GMAB 36.24 1.1	4 Knight-Swift KNX 48.89 0.85 3 KoninklijkePhil PHG 13.17 -1.74 1 KoreaElcPwr KEP 6.29 -0.24	NewsCorp A NWSA 15.52 0.06 NexstarMedia NXST 168.84 -2.25 NextEraEnergy NEE 72.75 -3.28 Nike NKE 88.51 0.52	Rentokillnit         RTO         26.95         1.37           Repligen         RGEN 199.62         0.49           RepublicSvcs         RSG 128.45         -1.19	Tenaris TS 26.91 -0.86 TencentMusic TME 3.92 -0.04 ' Teradyne TER 72.00 -2.02 Tesla TSLA 217.24 0.74	ZimmerBiomet ZBH     107.06     -1.26       ZionsBancorp     ZION     48.44     -0.74       Zoetis     ZTS     145.86     -0.39       ZoomVideo     ZM     75.22     1.51
	Inrivial         CCL         7.31         0.67 bits         DiamondbkEner FANG         141.17         1.80 bits           Lows         Low         Low         Low         Low         Low         Low         Low           Low	Genpact <b>G</b> 43.09 -1.4 GenuineParts <b>GPC</b> 154.92 -1.8 <b>52-Wk</b> %	6 LKQ LKQ 49.68 -0.55	Nokia NOK 4.35 0.04	RexfordIndlRealty REXR 51.51 0.11  52-Wk %	TevaPharm <b>TEVA</b> 8.07 <b>52-Wk</b> %	ZoomInfoTech ZI 43.77 0.55 Zscaler ZS 147.63 -1.10 52-Wk %
The following explanations apply to tl and Nasdaq Stock Market stocks tha	the New York Stock Exchange, NYSE Arca, NYSE American it hit a new 52-week intraday high or low in the latest nge from the previous trading session.	Stock         Sym         Hi/Lo         Ch           ChembioDiagn         CEMI         0.29         -8.           CherryHillPfdB         CHMIpB         17.04         -0.           Cinemark         CNK         9.73         -2.           CirrusLogic         CRUS         63.87         -2.	8 DocuSign	FedRealtyInvPfdC FRTpC 20.01 -0.5 FeutuneLightWt FLFVW 0.03 -25.0	GreatLakesDredge GLDD 7.08 0.8 GreenidgeGen GREE 1.14 -2.4 GreenlandTech GTEC 2.07 -1.3	Intellinetics   INLX   3.25   -4.6   IntlFlavors   IFF   84.83   -2.0   Invacare   IVC   0.68   -6.9	LogitechIntl <b>LOGI</b> 42.97 -0.2
W 52-Wk % Stock Sym Hi/Lo Chg	// // // // // // // // // // // // //	CiscoSystems   CSC0   39.25 - 0.	0 Doximity	FirstCitizensPfdA FCNCP 20.36 -1.2 FirstFoundation FFWM 17.72 -0.1	GroveCollab	iRadimed         IRMD         26.56            iStarPfdI         STARpI         22.77         0.4           transparent         12.73         4.0           JE Cleantech         JCSC         0.76         -2.4           Joann         4.76         -0.4	Lunalnnov         LUNA         4.14         -3.0           LutherBurbank         LBC         11.40         -1.2           LytusFech         LYT         1.06         2.7           MKT Bank Pfd H         MTBpH         22.77         -1.3           MFAP FinPfdB         MFAPB         16.98         -1.4
Highs AF Acqn A AFAQ 9.86 0.5 Allian Allian Allian Allian	InintTravel   ALGT   63.78   2.8   BankofAmPfdQ   BACpQ   17.7   1.0	ClearSignTech   CLIR   0.75   -1.	0         DukeEnergyPfdA         DUKPA         23.44         -0.7           8         Dun&Bradstreet         DNB         11.71         0.8           8         DyadicInt         DYAI         1.59         -4.2           8         Dynatronics         DYNT         0.42         2.7		Guidewire GWRE 56.61 -3.1 Gyrodyne GYRO 9.50 Hookipa HOOK 1.15 -4.0 HSBC 44.77 -0.4	JX Luxventure         JXJT         0.70         -7.7           JaguarHealth         JAGX         0.14         0.1           JanOne         JAN         1.85         -1.6	MFA FinPfdC MFApC 16.00 -1.5 MGE Energy MGEE 62.12 -2.7 MKS Instrum MKSI 76.59 -2.8 MSG Entertainment MSGE 42.44 -2.0 MagnaIntl MGA 46.63 0.2
AnzuSpeciall A   ANZU   9.89   0.1   Allsta   CapricorTherap   CAPR   6.56   2.5   ChemoCentryx   CCXI   51.95   0.1   Allsta   CollicityA   COLI   9.89   0.1   Allsta   ColicityA   COLI   0.89   0.1   Allsta   ColicityA   Colicit	atePfdH ALLpH 20.29 Bardays BCS 5.89 -1.1 atePfdI ALLpI 19.11 0.3 BeasleyBroadcast BBGI 1.01 -4.7 aTeknova TKNO 3.25 -1.8 BellicumPharm BLCM 0.93 -6.8	Cohbar CWBR 2.51 -8. Cohen&Steers CNS 55.63 -2. Coherent COHR 32.16 -3. ColumbusMcKinn CMCO 24.20 -0. Comcast A CMCSA 28.52 .	6 EQONEX EQOS 0.33 -9.0 0 EsgenAcqnWt ESACW 0.06 -14.3 7 E2openWt ETWO.WS 0.85 1.0	FiscalNote         NOTE         4.42         -6.4           Fisker         FSR         6.45         0.9           Five9         FIVN         53.36         0.1           FivePoint         FPH         2.37         -3.3	HainCelestial HAIN 15.61 -2.5 HallmarkFin HALL 0.98 -4.8 HamiltonLane HLNE 57.31 -0.3 HannonArmstrong HASI 26.25 -5.7	JetBlue         JBLU         6.21         1.4           Jiuzi         JZXN         0.22         5.4           JohnsonOutdoors         JOUT         46.78         0.2           KLA         KLAC         273.81         -2.2	Magnite         MGNI         6.29         -0.6           MaidenPfdD         MHpD         2.61         -8.8           MaidenPfdA         MHpA         2.77         -12.1           MalvermBancorp         MLVF         14.26         -0.7           ManhattanBridge         LOAN         5.07         -0.4
Colonnade II A	arella         AMBA         51.64         -1.9         Better/WorldVft         BWACW         0.00         7.9           didys         AMBD         9.1.5         1.2         BigCommerce         BIGC         1.23         1.9           ren         AEE         7.4.89         -3.8         Bilbili         BILI         1.233         1.24           rElecPwrUn         AEPBZ         47.58         -3.5         Biodesix         BDSX         1.16         -7.1           nDeb2059         AFGB         22.50          Biolase         BIOL         2.08         -5.00	Comerica         CMA         68.84         -0.           comScore         SCOR         1.23         3.           ComSovereign         COMS         0.05         -6.           Comstock         LODE         0.40         -1.           Conformis         CFMS         0.16         -6.	2 EaglePointPfdD	FleetCorTech FLT 169.06 -1.1	HarvardBioSci   HBIO   2.23   -1.3	Kalera KAL 0.80 -8.7 Kaleyra KLR 0.82 -4.5 KalVistaPharm KALV 4.37 -1.7	ManulifeFin         MFC         15.28         -0.3           MaravaiLifeSci         MRVI         17.69         0.3           MarinSoftware         MRIM         1.17         -1.7           MarlinTechWt         FIMW         0.01         6.0           MarvellTech         MRVL         37.41         -1.8           MatchGroup         MTCH         45.80         -0.8
EmbraceChange         EMCGU         10.16         0.4         AmFi           EnergemA         ENCP         10.19          Amer           FingerMotion         FMGR         9.80         13.1         AIGF           FusionAcqnIIA         FSNB         9.89         0.2         Amer	rTowerREIT AMT 182.30 -2.9 BlackHills BKH 62.60 -3.0	Conmed         CNMD         73.20         -2.           ConnexaSports         CNXA         0.21         -9.           ConstellationI Wt CSTAWS         0.03         -10.           ConsumerPtfo         CPSS         4.79         -2.           ContextTherap         CNTX         1.00         -6.	4 ElevateCredit         ELVT         1.00         -4.8           6 ElliottOppIIWt         EOCW.WS         0.11         -7.1           5 EllomayCapital         ELLO         18.68         -4.2           3 EmbarkTechWt         EMBKW         0.04         -23.3	FossilNts2026 FOSLL 12.00 1.0 FOXA 30.29 -0.6 FOXA 30.29 -0.6 FOXA 16.32 -0.6 FOXA 50.20	HeritageInsurance   HRTG   1.55   -1.9	KaziaTherap KZIA 0.97 1.2 KelsoTechs KIQ 0.28 -2.4 KemperDeb2062 KMPB 19.75 -2.9 KeyCorp KEY 15.47 -0.5	MauiLand MLP 8.40 -2.5 Maximus MMS 55.75 -2.5 MayvilleEngg MEC 6.29 -0.9 MedicuSciVt MSACW 0.02 8.3
Harmonic HLIT 13.87 1.9 Amer JackCreekA JCIC 9.97 Amer JupitrerWellnessA JWAC 10.05 0.2 Angh LarkspurHealth LSPRU 10.48 -3.3 Angi	namiWt <b>ANGHW</b> 0.10 -28.9 BlueApron <b>APRN</b> 2.11 -8.5 <b>ANGI</b> 2.54 0.8 BlueBird <b>BLBD</b> 7.47 -2.8	Cooper         COD         247.23         -1.           CorbusPharm         CRBP         0.10         -20.           CoreScientific         CORZ         1.18         -2.           CoreScientificWt         CORZW         0.25         -4.           CorEnergyInfr         CORR         1.53         -1.	5         EmpireStateReal250         FISK         5.88         -9.5           4         Enbridge         ENB         35.57         -1.1           3         Endava         DAVA         61.55         1.7           9         EnergyFocus         EFOI         0.41         -2.7	FusionAcqnllWt FSNB.WS 0.03 -11.9 GAMCO PfdA GNTpA 22.36 -0.6 GFL Env Un GMedInnov GMVD 0.17 -11.3	HubSpot HUBS 254.05 1.7 HuntingtonPfdH HBANP 17.56 -0.6 HuntingtonPfdI HBANM 21.77 0.2	KeyCorpPfdG KEYPK 21.85 Kimballintl B KBAL 6.28 1.7 KimcoRealtyPfdM KIMPM 20.85 0.9 KimcoRealtyPfdL KIMPL 20.32 1.1	Medtronic         MDT         80.30         -1.9           MerchantsBncpPfdA         MBINP         23.60         -0.4           MesaAir         MESA         1.40         -1.7           MetaPlatforms         META         126.25         -0.8           MetenHolding         METX         0.28         -3.3
MidlandStBncpPfA         MSBIP         25.73         0.2         Anter           MoringaAcqnA         MACA         9.96         0.2         Apoll           OneEquityPtrsIA         0EPW         9.89         0.1         Apoll           PBF Logistics         PBFX         20.59         3.6         Appli		CoupaSoftware COUP 50.10 -3. CrownCastle CCI 127.71 -2. Crypto1AcqnWt DAOOW 0.04 18.	0 Entegris ENTG 75.56 -2.0 3 EnteraBio ENTX 0.88 -4.1 6 Entergy ETR 96.52 -4.5 8 EntergyMS Bds EMP 22.25 -1.4	GSquaredIIWt GSQB.WS 0.06 11.1 GabelliEqPfdG GABpG 21.44 -0.3 GAIA 2.30 -0.4	Hywin   HYW   5.00 -13.0   1.00   1	Knowles         KN         11.84         -1.3           KoninklijkePhil         PHG         13.04         -11.7           KoreaElcPwr         KEP         6.29         -3.7           KratosDefense         KTOS         9.23         -3.3	
RMGAcqnIII A         RMGC         9.98         0.2         Appli           ResoluteForest         RFP         20.90         0.5         Aprei           RevivaPharmWt         RVPHW         0.63         38.5         Aprai           SCP&COHIthcrA         SHAC         9.92         0.2         Arcar	GedWPfdA	Cuentas         CUEN         0.44         -1.           CuriosityStrmWt         CURIW         1.22         -3.           CuriosityStream         CURI         1.33         -1.           CyxteraTech         CYXT         2.90         12.           DISH Network         DISH         13.07         -1.           DTE Energy         DTE         102.97         -3.	9 EnthusiastGaming <b>EGLX</b> 0.67 -4.0 4 EnvirotechVeh <b>EVTV</b> 3.13 -11.1 3 Envista <b>NVST</b> 32.17 -1.7 4 Enviva <b>EVA</b> 45.88 -13.1	Gaming&HospWt         GHACW         0.03         -50.0           Garmin         GRMN         78.03            GatesIndustrial         GTES         9.42         0.2           Gelesis         GLS         0.90         -3.1	IMV IMV 0.36 -8.8 IO Biotech IOBT 2.22 -1.8 IPG Photonics IPGP 82.33 -2.1	LFCapAcqnIIWt	MillicomIntl         TIGO         11.25         -0.5           MiMedx         MDXG         2.65         -2.2           MinervaSurgical         UTR         0.58         -20.4           Missfresh         MF         0.06         -12.3           MobileGibEsports         MGM         1.30
Supernova III A STRE 9.98 0.1 Arcin ThunderBridgeIII A TBCP 9.90 0.2 Argol TishmanSpeyII A TSIB 9.89 0.2 Argol Argu:	moto         FUV         0.80         1.6         BrookfieldBRP Nts         BEPH         15.32         -2.9           Blockchain         ARBK         1.97         -7.8         BrookfieldBRP4875Nt         BEPI         15.91         -3.9           BlockchainNts         ARBKL         11.82         -0.6         BrookfieldFinNts         BAMH         16.44         -2.0	DTE EnergyDeb77 DTW 21.63 -1.  DTE EnergyDeb80 DTB 47.95 -1.  DTE EnergyDeb80 DTB 17.42 -1.  DTE EnergyDebE DTG 16.69 -1.  DadaNexus DADA 4.31 -1.	1 Equifax     EFX     162.12     0.5       5 Equinix     EQIX     511.28     -2.4       0 EquitablePfdA     EQHpA     19.76     -1.9       8 EssentialUtil     WTRG     39.37     -3.2	GenerationIncm         GIPR         5.00         -1.4           GeorgiaPwrNt77         GPJA         21.44         -0.5           GeospaceTech         GEOS         4.09         -5.3           Gevo         GEVO         2.01         -5.1	Icon	LexariaBioscience <b>LEXX</b> 1.80 2.6 LianBio <b>LIAN</b> 1.79 -3.2	MolecularTemp         MTEM         0.57            Momentus         MNTS         1.11         -5.0           MonolithicPower         MPWR         320.56         -1.5           Moody's         MCO         238.22         -0.6           MorganStanleyPfdP         MSPP         24.93         -0.2
AGBA AcqnWt AGBAW 0.01 -50.2 Arns Arns Alm Immuno Alm 0.42 -7.9 a.k.a.Brands AKA 1.25 10.3 Arts AMC Ent Pfd A APE 1.58 -6.8 Artivi	ZACQIVIV         ARIZW         0.01 - 80.8         BrookfidInfrPfdAl3 BIPpA         15.85         0.4           adaHofflerPfA         AHHpA         20.80 - 2.6         BrookfieldPropPfd BPVP         15.75         -1.3           Cluantum         ARQ         4.83         0.2         BPP 5.75%PfdAB BPVPN         15.27         -2.2           ris         AIP         1.562         1.4         BrookfieldRenew         BEPC         29.06         -3.4	DanimerScientific   DMMR   2.35   5.	3 EuropeanWax     EWCZ     15.29     4.4       6 Euroseas     ESEA     18.66     2.7       5 Evergy     EVRG     55.09     -3.9       4 EversourceEner     ES     71.72     -3.6	GilatSatellite         GILT         5.07         -1.9           GladstonePfdD         LANDM         23.70         -1.5           Glatfelter         GLT         2.28         -14.0           GlobalBlue         GB         3.81         -1.2	Imunon   IMNN   1.51   -1.9	LibertyBroadbandC LBRDK   72.16   -1.1   Lillum   LILM   1.67   -0.6   LincolnEduc   LINC   4.88   -2.2   LineageCell   LCTX   1.08   -4.3   LionGroupWt   LGHLW   0.04   40.3	MorganStanleyPfdE         MSpE         25.01         -0.3           MorganStanleyPfdI         MSpI         24.24         -0.2           MorganStanleyPfdK         MSpK         23.51         -1.2           MullenAuto         MULN         0.24         -2.6           MySize         MYSZ         0.10         -8.4
AT&T T 14.62 -1.2 Ashfo AT&T Nts 2066 TBB 23.22 -0.6 Aspe AT&T PfdA TpA 19.22 -1.8 Astro AT&T PfdC TpC 17.30 -1.4 Astro	IntSolar         ASTI         2.99         -1.5 BrookfdReneyPfdAV         BEPPA         18.00         -1.3 condrighted per	DelcathSystems	7 ExactSciences         EXAS         30.61         -1.7           3 Exagen         XGN         2.37         8.2           5 EyePointPharm         EYPT         5.31         -4.3           3 FaradayFuture         FFIE         0.50         2.8           4 FaradayFutureWt         FFIEW         0.07         3.3	GlobalIndl   GIC   26.01   -2.5   ClobalMedREIT   GlobalNetLease   GlobalPtrsPfdA   GlobalPtrsPfdA   GGROW   -1.5   ClobalPtrsPfdA   GGROW   -1.5   ClobalPtrsPfdA   -1.2   ClobalPtrsPfdA   GGROW   -1.5   -1.2   ClobalPtrsPfdA   -1.2   -1.2   ClobalPtrsPfdA   -1.2   -1.	InozymePharma   INZY   2.27   2.1	LiveRamp RAMP 17.32 -0.7	NXP Semi NXPI 140.13 -2.4 NanoLabs NA 1.25 NationalGrid NGG 47.22 -2.8 Continued on Page B9
AVROBIO AVRO 0.60 -3.0 Ateal AXIS CapPfdE AXSpE 20.27 -1.0 AtlUr AXT		DigitalRealtyPfdL   DLRpL   20.03 - 0.	2 FedAgriMtgPfdE AGMpE 21.78 -3.9	Gorman-Rupp GRC 23.14 -2.4 GrayTelevision GTN 14.05 -2.2	Dividend Chan	ges	
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AdvanSix ASIX 30.69 0.3 Avan AegonNts2049 AEFC 19.88 -1.3 Avea Aegon AEG 3.76 -1.3 Aviea AEye LIDR 1.01 -2.8 BCE	AnnaHealth nt AVAH 1.24 -3.1 CIBC CM 40.32 0.8 AVNT 29.69 0.2 CandelTherap CADL 2.76 2.1 BCE 40.76 -1.7 CapitolFedFin CFFN 8.18 -1.0	IPO date/Offer price close ( Aquaron Acquisition 10.0	s Offer 1st-day Company SYN \$) price close IPO date/Offer 3 0.3 0.1 Nexalin Techn	IBOL priceWed's close (\$)Offer price1st-day closeology1.25-69.9-44.4	Commercial Metals Riley Exploration Permn Tanger Factory Outlet	CMC 1.6 .16/.14 REPX 5.7 .34/.31 SKT 5.7 .22/.20	<b>Q</b> Nov10/Oct27 <b>Q</b> Nov07/Oct24 <b>Q</b> Nov15/Oct31
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AlgonquinPwrNt AQNA 21.21 -1.8 Bank AlgonquinNt2079 AQNB 21.70 -0.8 Bank AlgonquinPwrUn AQNU 35.80 -1.6 Bank AlgonquinPwr AQN 10.22 -3.3 Bank	OZKPfdA OZKAP 16.56 -0.5 Certara CERT 11.96 -3.7 cofAmerica BAC 29.48 0.3 Cerus CERS 3.33	Global Star Acquisition 10.0 GLSTU Sept. 20/\$10.00	<b>EFHTU</b> Sept. <sup>1</sup>		KEY: A: annual; M: monthly; Q: o		FactSet; Dow Jones Market Data

## **BANKING & FINANCE**

# Bank of England Warning Pressures U.K. Markets

LONDON-The Bank of England said Wednesday that its program of bond purchases to support pension funds and prevent a possible financial market crisis would end Friday as

> By Anna Hirtenstein, Caitlin Ostroff and Paul Hannon

planned, causing a brief surge in bond yields and setting the stage for a tense few days in U.K. financial markets.

The move was seen by investors as a strong signal by the central bank and Gov. Andrew Bailey that its priority remains fighting inflation, even if that raises the likelihood of deeper turmoil in U.K. financial markets in the coming days and weeks, jitters that also have hit some U.S. markets such as junk

Prices for the U.K. government's long-term debt fell sharply early Wednesday, causing yields to soar, but pared most of their losses by late afternoon, while the pound gained against the U.S. dollar.

The BOE began buying U.K. government bonds on Sept. 28, days after the government unveiled a package of government tax cuts that caused worries about inflation and rising government debt, sending shock waves through the country's markets. Falling prices for U.K. government debt set off an unexpected chain reaction, as pension funds that held derivatives linked to government bonds were forced to sell assets, prompting a further decline in bond prices and more

The bank stepped in to prevent a full-blown financial crisis. It extended the program to inflation-linked bonds Tuesday, but has insisted it wouldn't extend the deadline, giving pension funds until Friday to reduce their exposure to the derivatives, a feature of socalled liability-driven investing.

On Tuesday, Mr. Bailey warned pension funds the program would end Friday and told them they had only three days "to get this done." Analysts say the banks and pension funds have unwound some of their exposure but not all.

On Wednesday morning, the bank reiterated Mr. Bailey's comments and appeared to dismiss a media report that it would extend the program. "The governor confirmed this position yesterday and it has market to prevent a meltdown, been made absolutely clear in contact with the banks at senior levels," the BOE said.

Mr. Bailey's tough line on ending the program is a gamble

**Mutual Funds** 



Gov. Andrew Bailey said the BOE would end its bond-purchasing program to support pensions Friday.

that the problems among pension funds will be resolved without causing wider damage. analysts said. If there is an uncontrolled rise in yields in coming days, that could prompt the bank to re-enter the market.

Yields on both conventional and inflation-linked gilts shot up early Wednesday before easing after the bank announced the results of its daily auction to buy bonds, with only two days left in the program. The 30-year yield reached 5.088%, up from 4.771% Tuesday, before sliding to 4.783%.

On Wednesday, the BOE's purchases of gilts rose moderately but still remained well below its £10 billion limit. It bought £2.38 billion of conventional debt and £1.98 billion of inflation-linked bonds. The central bank accepted all offers from sellers of conventional bonds, which analysts said helped calm the market.

The bank purchases "should help (and is helping) but the fact remains that they are poised to end the program on Friday," said Peter Schaffrik, a macro strategist at RBC Capital

The pound rose 0.9% to \$1.107 in what analysts said was a sign of confidence by investors that the bank was taking the fight against inflation seriously by not extending its program of bond purchases.

Analysts said the bank has to balance providing just enough support to the bond but not so much that it becomes an artificial source of support for government-bond prices or undermines its own goals to fight inflation.

Data provided by LIPPER

"It's a difficult balance to strike," said Athanasios Vamvakidis, head of G-10 foreign exchange strategy at Bank of America. "If they provide too much support [to the bond market], that's negative for sterling, but if they don't provide enough support [and risk a crisis] that's negative to sterling. If they strike that balance, you can have sterling appreci-

Other investors said it was up to the U.K. government to stabilize markets by addressing worries about its budget plans. "The best solution is if the government dials back what they've done," said Seema Shah, chief global strategist at Principal Global Investors. "The government does not under-

### Falling prices for U.K. government debt set off a chain reaction in markets.

stand market function, which creates an even bigger problem that the Bank of England has to keep mopping up."

The financial turmoil has put the new government of Prime Minister Liz Truss in a quandary. Analysts say it faces one of three difficult choices: take another embarrassing U-turn and scrap more of the planned tax cuts; undertake politically damaging spending cuts to prevent government debt from spiraling higher; or do neither and risk the wrath of financial mar-

On Wednesday, Ms. Truss said her government wouldn't make cuts to public spending. "What we will make sure is that over the medium term the debt is falling. But we will do that not by cutting public spending but by making sure we spend public money well," she said.

U.K. Chancellor of the Exchequer Kwasi Kwarteng has promised to lay out spending plans in detail on Oct. 31, telling lawmakers on Tuesday that the government had "an absolutely iron commitment to fiscal stability."

The Institute for Fiscal Studies, a think tank, estimates the government will need to make up £62 billion in spending cuts if it doesn't roll back more of the planned tax reductions or spending increases. The government has said tax cuts will spur far higher growth at a time of looming recession.

The government's fiscal plans, announced on Sept. 23, put the central bank in a difficult position, investors said. By stepping in to buy government bonds to calm the market turmoil, it was forced to temporarily postpone plans to start selling government bonds as it tries to fight inflation by raising interest rates and tightening money supply.

One reason the BOE is planning to end the emergency program is that it hasn't been used to its full capacity, according to officials at the central bank, likely because pension funds were reluctant to sell their positions at a steep loss.

◆ Heard on the Street: BOE shoots itself in the foot...... **B11** | Source: Tullett Prebon

Net YTD NAV Chg %Ret Fund

Net YTD NAV Chg %Ret Fund

## **Pensions** Rush to Raise Cash

Continued from page B1 sight Investment division and BlackRock Inc., according to ClearGlass Analytics, a research

LDI strategies use derivatives to help pension funds manage their exposure to changes in bond yields, which move in the opposite direction of prices. That is meant to free up capacity to invest in higherreturning assets like stocks.

But many LDI funds almost blew up after yields on U.K. sovereign bonds, or gilts, soared after the government unveiled sweeping tax cuts on Sept. 23—prompting the Bank of England to start offering temporary support to the gilt market just a few days later.

Asset managers and their pension-fund clients have been working to prepare for the end of the bank's program, while rewriting risk controls that hadn't envisaged such wild leaps in yields.

Delegates at a pensions conference Wednesday in the English port city of Liverpool said it had been a busy few weeks. Some said they weren't worried about their own liquidity but were concerned about the broader market.

"It was a real stress test," said Andy McKinnell, a trustee for a £6 billion pension plan, who was at the conference. The plan sold about 20% of its overall portfolio, mostly in the few days after the Bank of England started intervening.

'We weren't in a panic, but we knew we had to do something to rebalance promptly," Mr. McKinnell said. In some cases, that meant selling highly liquid assets even if the plan might have wanted to keep them, he said, though it didn't have to sell gilts. "The system worked," he added.

More broadly, "asset managers are requiring a bigger cushion than they did historically up to two weeks ago," said Ben

### U.K. long-dated bond yields



Gold, head of investment at XPS Pensions Group PLC, a U.K. consultant.

Mr. Gold said the asset managers he deals with, including Legal & General Investment Management, are asking clients to bump up their collateral buffer so they can withstand as much as a three-percentagepoint rise in gilt yields. Thirtyvear gilt vields have surged this year from 1.1% to about 4.9%.

Likewise, Kerrin Rosenberg, chief executive officer of Cardano Investment, which advises on and manages LDI portfolios, said most funds wanted by Friday to be able to withstand a rapid, 2- to 3-percentage-point rise in bond yields without having to sell other assets. "We are planning to be at the conservative end of the range," Mr. Rosenberg said. Before the market meltdown, the amount of collateral people were more likely to have on hand would serve as a buffer against a rise of 1 or 2 points, he added.

Stocks, credit and real-estate fund investments have all been sold to replenish collateral. The unloading has rippled through areas such as the market for collateralized loan obligations.

Estimates vary on the overall sums required. Mr. Gold at XPS estimated the industry needed about £200 billion to £300 billion in extra funding, of which between half and twothirds has been raised. Similarly, Con Keating, head of research at Brighton Rock Group, said funds had likely raised between £150 billion and £200 billion of additional collateral over the past month.

Other options include reducing the use of LDI, which many pension funds are reluctant to do because it insulates portfolios from falling interest rates. Falling rates increase the value in today's terms of future pension liabilities.

Another tactic is to tweak holdings of higher-yielding assets such as shares. For example, replacing physical stocks with derivatives would speed up access to cash if a position has to be liquidated, Mr. Rosenberg said.

Some clients had agreed ahead of time as to what assets could be sold to replenish LDI collateral, said Keith McInally, senior solutions director, pensions, at fund manager Abrdn PLC. Mr. McInally has been working with clients who didn't have contingency plans ahead of Friday's deadline.

LDI was designed to help funds shrink the gap between assets and liabilities and has exploded in popularity over the past two decades, particularly at defined-benefit pension funds. Pensions and others had invested £1.6 trillion in LDIs by 2021, up from £400 billion in 2011, according to data from trade group the Investment Association.

—Anna Hirtenstein contributed to this article.

New H	lighs	and	Lows					Stock		-Wk % li/Lo Cl	6   ng Stock		2-Wk % Hi/Lo Cl	6 ng Stock		2-Wk % Hi/Lo Cho	Stock		52-Wk % Hi/Lo Ch			-Wk % li/Lo Chg	Stock		-Wk % i/Lo Chg
Continued From	m Page R	3		52-W	k %	52	-Wk %	Qualcomm	QCOM	108.38 -	1.3 Ryanair	RYAAY	55.90 -	0.9 SolarEdgeTech	SEDG	195.61 -1.5	Telus	TU	19.26 -1	.4 UcommuneIntl	UK		-	-	82.17 -3.5
Continued 110			Stock Syn		Chg Stock			QuanergySystem	s QNGY	2.05 -	9.9 S&P Global	SPGI	291.06 -	1.2 SolenoTherap	SLNO	1.35 -2.2	2 TFF Pharm	TFFP	3.14 -9	.1 UiPath	PATH	11.61 1.7	BerkleyDeb59	WRBpF	19.57 -2.4
Stock			OnconovaTherap ONT	<b>x</b> 0	73 -1.3 Perma-Fix	PESI	3.64 -5.7	Quhuo QuidelOrtho	QH QDEL	1.42 -4	9.0 SBA Comm 0.8 SCE III Pfd	SBAC SCEpH		4.2 SolidPowerWt 1.6 SolidPower	SLDPW SLDP	0.81	. TPG RE FinPfd TRowePrice	C TRTXpC TROW	16.50 0 97.45 -5	.1 UltraClean	UCTT		BerkleyDeb60		16.62 -0.5 16.45 -1.4
NatlHealthcare	NHC	59.22 -2.7	OneEquityPtrsIWt <b>0EP</b>		01 -45.6 Personalis	PSNL		QuinceTherap	QNCX		1.9 SCE IV Pfd	SCEpH		0.9 SonimTech	SONM		T2Biosystems	TTOO	0.05 -30		e UIHC USB		BerkleyDeb61 Wallbox	WBX	5.90 -0.5
NatureSunshine		7.95 0.1	OnionGlobal <b>OG</b>		31 -11.2 PetcoHealth		10.45 -1.4	QuiptHomeMed	QIPT	3.92	0.8 SCE VI Pfd L	SCEpL	17.95 -	1.1 Sono	SEV	1.90 -10.0	Taboola	TBLA	1.71 -0	.6 US Globaliny	GROW	2.71 -1.5	WebsterPfdG	WBSpG	23.13 -1.3
NatWest	NWG	4.71 -3.1	OntoInnovation ONT Ontrak OTR		28 -4.1 PierisPharm 42 -2.0 PineTechWt	PIRS PTOCW	1.02 -2.8	QuoinPharm	QNRX		6.6 SEI Investments			1.3 Sony	SONY		TakungArt	TKAT	0.70 -4		UBX		Weibo		13.69 -1.9 22.31 -0.7
NavientNts2043		17.40 -1.1	OpenLending LPR		84 PinnacleWe		59.52 -2.9	QwestNts2056 QwestNts2057	CTBB CTDD		4.7 SKGrowthOppsV 3.0 SK Telecom	t SKGRW SKM	0.14 -2 18.72 -	6.3 SouthernNts77 0.1 SouthernNts20	SOJC		7 Talon1AcqnWt 7 TavshaGene	TOACW TSHA	1 0.03 1.54 -2	UnivElectro .3 UplandSoftwar	UEIC e UPLD	16.73 -0.9	WellsFargoPfdAY WellsFargoPfdAZ		18.12 -1.3
Neogen NeoleukinTherag	NEOG	11.54 4.5 0.56 0.8	OpendoorTech OPE		63 4.1 PitneyBowe		17.67 -2.1	RCF Acqn Wt	RCFA.WS		6.7 SLGreenRealtyPt			1.1 SpectrumPharm			1 TeledyneTech	TDY	329.59 -0		UPWK	12.80 -0.1	WellsFargoPfdACC	WFCpC	16.78 -0.9
NeuroMetrix	NURO	1.91 0.9	Oppenheimer A OPY		42 0.5 Pixelworks	PXLW	1.40 0.7	RLJLodgingPfdA		23.16	0.4 SMART Global	SGH		4.6 SpireGlobalWt	SPIR.WS		Teleflex	TFX		.2 ViaOptronics	VIAO	1.31 -2.2	WellsFargoPfdADD	WFCpD	16.40 -1.4
NewVistaAcqnW		0.04 15.4	Orange ORA			oWt <b>PSNYW</b>	0.90 -5.8	R1 RCM	RCM		1.1 SPI Energy	SPI	1.20 -	1.6 SpiritRealtyPfdA			7 Telefonica	TEF	3.13 -0	.9 Vaccitech	VACC	2.55 -6.6	WescoPfdA		26.62 -0.1
	NYCB	8.35 -1.1	Orgenesis ORG		30 -1.5 Popular 65 28.5 PortlandGer	BPOP Flor POP		RailVision	RVSN		4.0 SS&C Tech	SSNC		1.0 Splunk	SPLK		1 Tele&DataPfdV			.8 Vaxart	VXRT		WestAllianceBcp WstAstMtgCap	WMC	61.44 -0.1 9.54 -1.4
NexPtDivRlEstPfd		16.50 -2.4 39.51 -1.1	OrionEngCarbons <b>OEC</b>		12 -0.8 Pwr&Digital		0.10 -16.2	RamacoNts2026	RPD		0.4 SachemNts2027 2.5 SachemNts2027			3.4 Spotify 2.0 SpruceBio	SPOT SPRB		Telesat Tenable	TSAT TENB	6.82 -1	<ul><li>.9 Veecolnstr</li><li>.6 VelodyneLidarV</li></ul>	VECO	17.11 -5.6 0.28 -9.1		WEST	9.42 0.3
NexPointResiden NextEraEnerUn		44.11 -2.5	OscarHealth <b>OSC</b>		72 -3.3 Powerbridge		0.20 -11.3	RealReal	REAL		1.6 SachemCapPfdA			0.6 StanlevBlackDck			2 TVA Bds D	TVC	21.03 -0			0.26 -9.1	WeWorkWt		0.17 -16.5
NiaMoPwr pfB	NMKpB	73.00 -3.2	OstinTech OST		00 -3.7 PowerUpAce		0.06 -0.4	RedwireWt	RDW.WS	0.25 -	9.4 SangomaTechs	SANG		4.6 Starbox	STBX	1.46 -7.0	Teradyne	TER	71.94 -2	.7 Verastem	VSTM	0.41 -10.0	WeWork	WE	2.25 -6.0 1.01 -2.8
NiSource	NI		OvidTherap OVI Owens&Minor OMI		59 -2.4 Premier	PINC		Reed's	REED		3.6 SapiensInt	SPNS		5.8 StateStreetPfdG			6 TexasCapBcshsPf			.2 Veritex	VBTX	26.14	WheelsUp WheelsUpWt	UP UP.WS	0.09 -20.3
NiSourceUn	NIMC	//.7/ 2.2	Owens&Minor OMI OxfordLanePfd OXL		10 -35.0 Prenetics 41 -0.6 PriceSmart	PRE PSMT		RegionalMgmt ReinsuranceGrpDe	RM		0.6 SaulCentersPfdI 0.6 SchnitzerSteel	SCHN		0.7 Stericycle 1.3 StewartInfo	SRCL STC		Thoughtworks ThredUp	TWKS TDUP	8.80 0	.1 Verizon .9 VeryGoodFood	VZ VGFC	35.60 -0.7 0.10 0.5		FREE	3.30 2.4
Nogin NomuraHoldings	NOGN	0.93 3.21 -1.8	OxfordLanePfd2024 <b>OXL</b>			PfdD <b>PRIFpD</b>		ReinsuranceGrpDe ReinsuranceGrpDe		23.96 -		SNCE		0.9 StifelFinlPfdB	SFpB	23.26 -0.5		THRY		.9 VeryGoodFood .2 ViaRenewables		E 20 10	Willdan		12.37 -3.4
NorthernTrust	NTRS		OxfordLaneNts2031 OXL	.CL 22.	60 0.3 PriorityIncm		21.56 -2.2	RelianceGlobalW	t RELIW		0.2 SculptorAcqnIW		0.10 -		SFpC		3 Transalta	TAC		.7 ViantTech	DSP	3.99 -1.5	Winc	WBEV	0.58 3.3 4.52 -3.4
NorthernTrPfdE		20.32 -0.5	OxfordSquareNt24 <b>OXS</b>				23.90 -0.7	RenaissancePfdF	RNRpF	22.15 -	0.8 SeaSpine	SPNE		2.5 StifelFinNts47	SFB	20.65 -2.0	TransUnion	TRU		.5 Vicor	VICR	49.23 -0.6		WIT WETF	4.52 -3.4
NovaLifestyle	NVFY		OxfordSquareNt26 OXS					RenaissancePfd0			3.2 SecureWorks	SCWX		1.2 StifelFinlPfdD	SFpD	16.27 -1.		TRMB		.9 Vimeo	VMEO	J.// ~4.1	WranTech	WRAP	1.41 -5.3
Nova	NVMI NBY	71.99 -2.9	PLDT PHI PNC Fin PNC	23. 145.				Renalytix RenttheRunway	RNLX RENT		3.1 SelectiveInsPfdE 1.0 SelectQuote	SIGIP		2.2 StoneBridgeWt 7.4 StranWt	APACW STRNW		TritonIntlPfdD TritonIntlPfdE	TRTNpD		.4 ViomiTech .1 ViraxBiolabs	VIOT VRAX	0.80 5.3 1.74 -8.8	XomaPfdA		23.00 -2.9
NovaBayPharm NovoIntSci	NVOS	0.09 6.3 0.61 -18.9		23.				ReShapeLife	RSLS		5.9 Sema4	SMFR		5.2 Stratasys	SSYS		2 TriumphBancori			.0 VirginOrbit	VORB				22.60 -1.3
NutexHealth	NUTX	0.50 -12.1	PRA Group PRA	A 31.		jePfG <b>PSApG</b>		RetractableTechs			1.0 Semantix	STIX	1.77 -1				TriumphGroup	TGI		.5 VirpaxPharm	VRPX	1.09 -2.7	XcelEnergy Xperi		57.90 -3.2 13.17 -5.9
NuvveHolding	NVVE	1.19 -6.2	PSBusParksPfdX PSB		14 -0.6 PublicStorage			RexfordIndPfdB	REXR <sub>p</sub> B		1.3 SemantixWt	STIXW	0.02 -				3 TruistFinl	TFC		.8 VirtusCvPfdA	NCVpA	21.64	YoshiharuGlbl	YOSH	1.01 -2.8
Nuwellis	NUWE	0.33 -11.9	PSBusParksPfdY PSB	pY 14.				RexfordIndPfdC	REXRpC		2.3 SenesTech	SNES		8.9 StrongholdDig	SDIG		1 TruistFinPfdI	TFCpl		.2 VirtusInvtPtrs	VRTS	146.07 -2.7	Youdao	DAO	3.81 -0.5
OFSCapNts2028 ON24	OFSSH ONTF		PSBusParksPfdZ PSB ParTechnology PAR			oDfdl DSAni		RingCentral RithmCapPfdB	RNG RITM <sub>D</sub> B		3.4 SeqLL 2.2 ServiceNow	SQL NOW		9.5 SumoLogic 0.6 SunComms	SUMO Sui	6.54 -1.0	5 22ndCentury 3 TwoHarborsPfd	XXII		<ul><li>.1 VistaGenThera</li><li>.7 VivaniMedical</li></ul>	VANI	0.12 -0.1 2.00 0.5	YumBrands		104.36 0.3
OPKO Health	OPK	1.70 -0.6	ParamountB PAR			ePfM <b>PSApM</b>		RithmCapPidB	RITMpA	18.70 -	1.1 Shapeways	SHPW		5.2 SunLifeFinancial			9 TwoHarborsPfd			.1 ViveveMedical	VAIVI	0.58 -3.1		ZDGE ZEPP	2.20 1.24 5.6
OPYAcqnIWt	OHAAW		PardesBiosci PRD	S 1.	40 -4.0 PublicStorag	ePfdS <b>PSApS</b>		RithmCapPfdC	RITMpC	16.15	0.4 ShawComm B	SJR	23.94 -	1.4 SuperLeagueGar		0.61 -5.0		UGI		.2 Vodafone	VOD	10.85 -1.0	Zillow A		27.85 2.4
OSI Systems	OSIS		ParsecCapWt PCX		02 11.5 PureCycle	PCYO		RithmCapPfdD	RITMpD	17.49 -	1.0 ShiftTech	SFT		4.6 SwvI	SWVL		UGI Un	UGIC		.2 VornadoRealty	VNO	20.68 -0.5	Zillow C	Z	27.81 2.6
OceanPal	OP		PatriaLatAmWt PLA PAVmedWtZ PAV		09 40.0 PyxisOncolo			RogersComm B	RCI		1.1 ShoulderUpTechV	/t SUAC.WS SIMO		0.3 Synaptics	SYNA SNCR	87.01 -1.3				.2 VornadoPfdL	VNOpL	17.59 -1.0			7.71 -6.9
OceanTechl Wt Offerpad	OTECW OPAD		PAVmedWtZ PAV Paysafe PSF		40 -19.1 Q2Holdings 33 0.7 QVC Nts206	QTWO 57 QVCD		Roku RoyalBkCanada	ROKU Ry	49.70 2 85.14	2.6 SiliconMotion 0.4 SimonPropPfdJ	SPGpJ		2.4 Synchronoss 2.8 SynchronyPfdA	SYFDA		US BancorpPfd US BancorpPfd			.3 VornadoPfdN .0 VornadoPfdO	VNOpN VNOpO				17.42 -1.4 25.01
Okta	OKTA	48.85	PebblebrookPfdE PEB					RubiconTech	RBT		9.9 SiNtxTech	SINT	0.16 -1	1.0 SynovusFinPfdE			7 US BancorpPfd			.5 VornadoPfdM	VNOpM	16.79			20.77 1.0
OmegaFlex	OFLX	90.79 -2.0	Pegasystems PEG		83 1.1 Qorvo	QRVO		RubiconTech	RBCN		2.0 Skyworks	SWKS	79.32 -	2.2 TCBioPharm	TCBP	0.21 4.4	4 USCellularNts20	69 <b>UZD</b>	19.16 -2	.0 VoxRoyalty	VOXR		Zuora	ZU0	6.47 -1.2
Omnicell	OMCL	75.13 -3.7	Pennant PNT	<b>G</b> 9.	10 -11.9 QuadGraphi	cs <b>QUAD</b>	2.18 -4.3	RubiusTherap	RUBY	0.37	1.0 SocketMobile	SCKT	2.00 -	0.5 TC Energy	TRP	39.58 -1.0	USHG Acqn Wi	HUGS.WS	<b>S</b> 0.03 -31	.9 voxeljet	VJET	2.87 -3.2	ZurnElkayWater	ZWS	23.96 -1.9

### t Fund NAV Chg %Ret | Fund MdCpGrAdml 72.90 -0.30-33.1 MdCpVIAdml 63.44 -0.50-17.3 SmValAdml 63.26 -0.34-16.5 TotBd2 9.22 +0.01-15.1 TotIntlinstldx r 97.61 -0.25-27.3 91.34 -0.21-14.7 Fidelity Invest 12.11 -0.05-16.1 Balanc 2 11.90 ...-13.7 BluCh 11 38.21 -0.19-19.2 Contra 1 23.47 -0.04-22.3 Top 250 mutual-funds listings for Nasdag-published share classes by net assets. 113.00 +0.21-38.2 12.79 -0.02-30.9 e-Ex-distribution. f-Previous day's quotation. g-Footnotes x and s apply. j-Footnotes e and s apply. **k**-Recalculated by Lipper, using updated data. **p**-Distribution costs apply, 200.33 -0.61-16.9 ContraK 12.84 -0.02-30.9 12b-1. r-Redemption charge may apply. s-Stock split or dividend. t-Footnotes p and r apply. v-Footnotes x and e apply. x-Ex-dividend. z-Footnote x, e and s apply. NA-Not available due to incomplete price, performance or cost data. ME-Not released by Lipper, data under review. NN-Fund not tracked. NS-Fund didn't exist at start of period. 8.89 ...-13.7 23.67 +0.02-35.1 DoubleLine Funds TotltlinstPlid r 97.63 -0.25-27.3 Double-Line Funds CpInc ChrotRetBdI 8.81 + 0.01 NA Grocc Edgewood Growth Instituti InvGrBd Edgewood Gringt 32.56 + 0.05 - 46.2 LowP Fidelity Magin SOOI/dxInstPrem124.13 - 0.40 - 24.0 NASDAQ Totst 87.26 -0.27-25.0 **VANGUARD INSTL FDS**Ballnst 38.07 -0.05-21.0 DevMktsIndInst 11.64 -0.04-28.0 23.67+0.02-35.1 9.69+0.01-14.8 42.36-0.12-15.4 10.06-0.05-31.9 132.16-0.11-32.9 12.44-0.01-34.2 DevMktsInxInst 18.20 -0.06-28.0 ExtndInst 97.13 -0.18-29.5 Contrafund K6 16.20 -0.02-30.3 OTC ExtMktldxInstPre 61.20 -0.12-29.5 Puriti GrwthAdml 108.36 - 0.16-34.1 HlthCareAdml r 81.75 - 0.23-11.6 HYCorAdml r 4.99 - .12.9 IntGrAdml 23.47 + 0.03-12.9 IntGrAdml 8.78 + 0.15-39.9 ITBondAdml 9.90 + 0.02-15.3 ITIGradeAdml 8.06 ..-17.1 LarCapAd 82.33 - 0.23-25.2 LTGradeAdml 7.47 .-29.4 MidCpAdml 232.94 - 1.40-25.4 MuHYAdml 10.05 - 0.02-114.1 MuLtAdml 10.30 - 0.02-13.2 MuLtAdAml 10.55 + 0.01 - 4.4 MuShtAdml 15.548 ... - 1.7 Net YTD NAV Chg %Ret Fund 21.18 -0.03-21. GrwthInst 108.37 -0.16-34.1 NAV Chg %Ret Fund NAV Chg %Ret | BondR6 | 13.11 | ...-16.5 | JPMorgan | Class | CoreBond | 10.00 +0.02 | NA | EqInc | 20.61 -0.11 | NA | LgCpGwth | 44.59 -0.07 | NA | JPMorgan | R Class | CoreBond | 10.01 +0.01 | NA | CorePlusBd | 7.06 | ... | NA | Lgcd | Abbett | A FidSerToMarket 11.94 -0.03-24.9 SAIUSOtvidx 14.27 -0.05-24 Hidser foMarket 11.94 - 0.03-24.4 GrowthCompanyK6 14.86 + 0.02-35.1 InfilPrBdIndlinsPr 9.69 + 0.01-13.2 IntildxinstPrem 35.64 - 0.14-27.7 LgCpGwld InstPre 20.32 - 0.03-31.3 MidCplmxhstPrem 24.17 - 0.15-23.8 SAUSLgCpIndxF1 6.14 - 0.05-24.0 SAIUSQtyldx 14.27 -0.05-24.1 SrsEmrgMkt 14.43 +0.01-31.4 SrsGlobal 10.98 -0.02-27.1 SrsGroCoRetail 13.42 +0.01-34.2 SrsIntIGrw 12.75 -0.06-33.3 SrsIntIVal 8.61 -0.04-22.9 18.40 -0.01-19.2 33.60 -0.07-23.7 InPrSeIn 9.56 +0.01-12.9 InstIdx 303.01 -0.99-24.0 InstPlus 303.01 -0.99-24.0 InstTStPlus 63.50 -0.20-24.9 MidCplnst 51.46 -0.31-25.4 MidCplstPl 253.78 -1.53-25.4 RealEstaInstI 16.82 -0.19-32.3 47.63 -0.17-18.0 LargeCapValue 14.39 -0.07-15.0 American Century Inv Ultra 58.42 -0.02-33.3 10.25 ... NA Income 10.25 PIMCO Funds Instit IncomeFd 10.25 Artisan Funds MunicipalBond 9.51 -0.01-10.1 26.12 -0.03-21.4 26.67 -0.10-20.7 24.27 -0.02-23.6 American Funds Cl A IntlVal Inst 32.76 -0.29-22.3 Calamos Funds 28.36 -0.05-32.9 45.23 -0.26-13.8 26.87 -0.03-18.4 11.17 +0.01-14.8 28.36 -0.05-32.9 Baird Funds 45.23 -0.26-13.8 AggBdInst 9.42 ....15.7 Columbia Class I 11.7 +0.01-14.8 ShtTBdInst 9.17 ....4.9 Divincom I 26.13 -0.13-16.2 11.7 +0.01-14.8 ShtTBdInst 9.17 ....4.9 Divincom I 26.13 -0.13-16.2 11.7 +0.01-14.8 ShtTBdInst 9.17 ....4.9 Divincom I 26.13 -0.13-16.2 11.7 +0.01-14.8 ShtTBdInst 9.17 ....4.9 Dimensional Fds 57.34 -0.16-16.6 BlackRock Funds 43.85 +0.01-32.8 HiYMGBd Inst 6.50 -0.01-13.6 Emg/kktVa 24.35 +0.06-18.8 43.85 +0.01-32.9 BlackRock Funds III 8.89 -0.01-12.1 [ShSaP500ldx419.65 -1.38-24.0 IntSmCo 14.97 -0.11-30.3 IntSmCo 14 13.48 -0.01 -6.9 MktNeutl PrmcpCor STAR 108.97 -0.03-38.7 59.45 -0.27-19.1 TgtRe2020 TgtRe2025 TgtRe2030 25.26 -0.03-18.6 16.12 -0.02-20.7 29.98 -0.05-22.0 18.41 -0.04-22.8 BIChip DivGro 9.18 ...-15.2 ... 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NA NHoriz R2020 R2025 R2030 83.33 -0.48-29.0 47.68 -0.07-37.9 TatRe2045 21.46 -0.05-24.4 TotalMarketIndex 12.64 -0.03-24.7 FPA Funds MuShtAdml 15.48 ... -1.7 PrmcpAdml r131.17 -0.14-22.6 17.91 -0.04-19.4 15.48 -0.03-20.7 22.83 -0.06-22.6 USBdldxInstPrem 10.01 +0.01-15.0 NwInc | R2025 | 15.48 - 0.03 - 20.7 | RealistatAmil108.65 - 1.23 - 32.3 | TgtRet2055 - 39.31 - 0.11 | R2030 | 22.83 - 0.06 - 22.6 | SmCapAdml 83.21 - 0.40 - 22.5 | TgtRetInc | 11.95 - 0.01 | Schwab Funds | SmGthAdml | 68.65 - 0.29 - 30.4 | Wellsl | 24.12 - 0.05 | R205 | R20 TgtRet2055 39.31 -0.11-24.7 38.67 -0.08-23.5 BlackRock Funds Inst Fidelity Freedom Franklin A1 MFS Funds TotIntBdldxInst 28.30 -0.02-13.8 38.67 - 0.08-23.5 | BlackRock Funds Inst | LgCo | 25.44 - 0.09-24.1 | Fidelity Freedom | Franklin A | MFS Funds | Fund 11.95 -0.01-16.2 TotStInst 87.28 -0.27-24.9 24.12 -0.05-14.9 ValueInst 48.64 -0.20-13.6 38.11 -0.11-20.3 WCM Focus Funds 36.28 -0.07-20.8 WCMFochtlGrwlns 17.27 -0.06-37.6 Western Asset 14.59 -0.04-27.4 CorePlusBdIS 9.06 +0.01 NA

## Stocks Fall on Fed Minutes, PPI

S&P 500 closes at lowest level in nearly two years as investors show edginess

By Chelsey Dulaney And Paul Vigna

Stocks slipped on new inflation data and the release of the minutes of the September meeting of the Federal Reserve's rate-setting board.

The S&P 500 edged down 11.81 points, or 0.3%, to 3577.03, a nearly two-year low. The Dow Jones Industrial Average lost 28.34 points, or 0.1%, closing at 29210.85. The Nasdaq Composite dropped 9.09 points, or 0.1%, to 10417.10, a day after the techheavy index entered its second bear market of 2022, marking a drop of more than 20% from its recent high on Aug. 15.

**WEDNESDAY'S MARKETS** 

Investors have been on edge

week ahead of the release of Thursday's report on consumer prices in the U.S. that will shed light on how much work the Fed has left to do in containing decades-high price rises. In recent months, inflation gauges have shown widespread pricing pressures on categories like food and housing, while energy prices have

U.S. suppliers increased the prices they charge customers by 0.4% in September from a month earlier, according to data released Wednesday. Economists polled by The Wall Street Journal had expected a 0.2% increase.

"Inflation certainly broadened out and entered into areas that were more sticky," said Kiran Ganesh, a multiasset strategist at UBS. "That's why there's been an increase in expectations...that the Fed needs to keep rates at a higher level for longer to get inflation down."

The Fed released Wednesday afternoon the minutes of its September meeting, which showed officials concerned over the persistence of high inflation and expecting that



Shares of PepsiCo, which owns Gatorade, rose 4.2% on Wednesday after it lifted its sales outlook for the year.

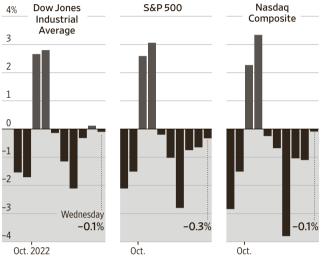
bringing prices and wages down would likely require the labor market to weaken.

The Fed's stance has heightened the risk of a recession, but it doesn't appear the economy is in one now, said Merk Investments strategist Nicholas Reece. A recession may in fact come as late as the second half of next year, he said. That, however, likely means the market may churn along for several more months before finally hitting a cycle low. "That's one of the things hanging over this market," he

Corporate earnings over the next several weeks will also provide insight into how businesses are dealing with price pressures. PepsiCo on Wednesday again lifted its sales outlook for the year as it continues to push through price increases on its snacks and drinks, sending shares up \$6.80, or 4.2%, to \$169.39.

The coming days will bring updates from a range of companies, including Delta Air Lines and banks such as JP-Morgan Chase and Citigroup. Mr. Ganesh said earnings

Daily index performance, past 10 days Dow Jones



Source: FactSet

estimates for the remainder of the year and 2023 are too optimistic, posing another risk for stocks.

"If you look at market performance so far this year, it's pretty much fully explained by the move in rates and bond yields," said Mr. Ganesh. "Higher rates should mean lower expectations for growth

and earnings, and that's not priced into the market yet."

Investors also continue to watch turmoil in U.K. government-bond markets, which have been highly volatile since the government set plans for large, debt-funded tax cuts last month.

The pound rebounded 1.2% to \$1.1102 in New York. But

government bonds, known as gilts, remained under pressure. The 30-year U.K. gilt yield briefly topped 5%, a level last seen before the central bank's intervention. Yields rise as prices fall.

The U.S. 10-year Treasury note was down slightly at 3.901%.

"Bond markets think the BOE isn't doing enough," said Viraj Patel, a global macro strategist at Vanda Research. Despite the BOE's pledge to wind down bond buying, Mr. Patel said he still believes the central bank would step in with support if volatility again threatens financial stability.

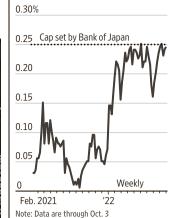
"They won't let this get to some sort of chaos that spirals out of control," he said. The U.K.'s FTSE 100 fell

0.9% to 6826.15, while the pan-European Stoxx Europe 600 lost 0.5% to 385.88.

Early Thursday, Japan's Nikkei 225 was down 0.5%, Hong Kong's Hang Seng Index was down 1.2%, South Korea's Kospi was down 1.1% and the Shanghai Composite was down 0.3%. S&P 500 futures fell 0.3%.

Series I Bond Composite Rate

### Ten-year Japanese government bond yield



## Japan's Bonds Set Record for No Trades

By Megumi Fujikawa

TOKYO-Bond traders to the Bank of Japan: Thanks for nothing.

For the fourth straight session, none of the latest issue of 10-year Japanese government bonds traded on Wednesday. According to Japan Bond Trading Co., it was the longest streak since March 1999, when comparable data became available.

The responsibility for making a normally large market wither away into nothing belongs to the Bank

of Japan, which

**MARKETS** on days such as these is offering a higher price for the 10-year bond than any private firm is willing to pay. That means trading between financial institutions, the kind tracked by market-data firms, dries up.

Since March 2021, the Bank of Japan has capped the yield on the 10-year bond at 0.25%. In April of this year, it pledged to buy as many bonds as needed every business day to enforce the cap—in other words, promising to pay a high price so that yields, which move in the opposite direction to prices, stay low.

Low interest rates, in turn, support the perennially sluggish Japanese economy by easing the way for home buyers and business owners, according to the Bank of Japan.

Lifting the cap "will clearly disturb the effects of monetary easing, so I am not thinking of doing it," said Gov. Haruhiko Kuroda in late September.

With the Federal Reserve aggressively raising rates market forces in Japan pushed up the yields on government bonds this week. The yield on the 30-year government bond rose 0.04 percentage point on Wednesday to 1.475% in relatively normal trading. But the Bank of Japan's cap on the 10year bond yield left buyers and sellers of that bond with little to do.

The most obvious effect of the Japanese central bank's policy is a sharp fall in the yen because of the widening rate divergence between the U.S. and Japan. The Fed's actions sent the yield on the 10-year U.S. Treasury to nearly 4%. The latest issue of the 10-year Japanese government bond, when it last traded on Oct. 5, was vielding 0.245%.

The high vield makes dollardenominated assets more attractive. On Wednesday, the dollar rose to more than 146 yen, marking another 24-year low for the Japanese currency after a year of steady falls.

The weak yen raises the price of imported fuel and food, hitting the pocketbooks of ordinary Japanese, although it has yet to lead to the kind of rapid and broad-based price increases seen in the U.S. and parts of Europe. Some overseas traders tried

betting against the Bank of Japan earlier this year, believing it would eventually have to follow the Fed's lead. Gov. Kuroda has steadfastly said that he won't, and he repeated his pledge to stick to monetary easing at an event Wednesday in Washington, D.C.

## **AUCTION RESULTS**

Here are the results of Wednesday's Treasury auction. All bids are awarded at a single price at the market-clearing yield. Rates are determined by the difference between that price and the face value.

NINE-YEAR, 10-MONTH NOTES Applications Accepted bids "noncompetitively

foreign noncompetitively Auction price (rate)

## Inflation Bond Pays 10% but Not for Long

By Dion Rabouin

Inflation-adjusted Series I savings bonds have been the most enticing place to park your cash this year—nearly 10% interest, backed by the U.S. government, the safest investment around. In a few weeks, a little of the luster will fade.

I Bonds would likely pay about 6.4% interest beginning Nov. 1 if the consumer-price index rises as economists expect by 0.2% monthly and 8.1% year over year. Savers loaded up on I Bonds when the rate leapt to 9.62% in May, the highest interest rate since I Bonds were introduced in 1998.

September CPI figures, which are used to compute the I Bond rate for the six months beginning in November, are set was above 1% was in 2007. The sury Department. end of October will earn 9.62% for six months before adjusting to reflect the new inflation

Even at a lower interest rate. I Bonds are likely to offer a yield at least 2 percentage points higher than a 30-year U.S. Treasury bond and more than 40 times the average U.S.

savings-account interest rate. I Bonds could pay more than 6.4%, even if inflation comes in as expected: The rate on I Bonds includes a fixed rate for the 30-year life of the bond and an inflation-adjusted rate that changes every six months. The fixed rate has been 0% since

to be released Thursday. Bonds 
Treasury Department sets the bought from May through the fixed rate at the discretion of the Treasury secretary.

Why will the inflation-adjusted rate fall so much if inflation is still roaring?

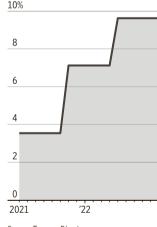
Annual inflation has remained near the highest levels since the early 1980s, but monthly inflation has slowed. The formula for I Bond interest looks back only six months.

I Bonds have become a favorite of Wall Street and Main Street this year, with more than \$22.3 billion of gross purchases through September. That is already a record for I Bond gross sales and is more than five times the amount of I Bonds sold in all of 2021, according to data from the Trea-

Bipartisan legislation introduced in the Senate last month would raise the cap on purchases from the current \$10,000 to \$30,000 when CPI holds above 3.5% year over year for a period of six months or more.

Currently, individuals can use their tax returns to purchase as much as \$5,000 of additional I Bonds and can buy I Bonds as gifts for family members. The Senate bill would cap total I Bond purchases for an individual at \$30,000.

There is no secondary market for I Bonds, meaning investors can't sell the bonds after they have bought them, and they can't redeem them for at least one year.



Source: TreasuryDirect

I Bonds can be bought by U.S. citizens or civilian employees of the U.S., and can be purchased only through the Treasurv's website. TreasurvDirect.gov.

## **Shares** Move in Lockstep

Continued from page B1

just going to impact everything," said Brando Reyna, portfolio manager for Novare Capital, an investment adviser based in Charlotte, N.C., that manages \$1.3 billion in

The rally was short-lived. The S&P 500 has fallen in each of the following six sessions. Plus, Friday's jobs report showed the labor market remains robust and the unemployment rate has fallen back to a half-century low, shattering hopes that the Fed would pause raising interest rates.

The prospect of higher rates has led to few outright winners in the market. A Bespoke Investment Group analysis of the Russell 3000 found that a basket of stocks with low valuations, high-dividend yields and large market caps fell about 15% on average from their summer highs in mid-August to the end of September. In comparison,

the average stock in the index dropped almost 19% through the same period.

May 2020, and the last time it

"You're not trying to hit home runs in this environment. Singles are good," said Kevin Flanagan, head of fixed-income strategy at WisdomTree, of the difficulty of trying to beat the broader market. Mr. Flanagan said he is seeking safety in Treasury floating-rate notes this year.

One factor that has pushed correlations higher: the popularity of exchange-traded funds. Investors in indextracking funds who want to increase or decrease their exposure to stocks during periods of turmoil can buy or sell only broadly-not pick and choose shares.

The tandem moves extend well beyond stocks. Government bonds, which are considered a haven during times of financial turmoil, have slipped alongside stocks for three consecutive quarters for the first time since 1974, according to Strategas Re-

The Bloomberg U.S. Aggrebond index—which tracks a basket of government and investment-grade corporate bonds—is down about 15% this year. Gold, another haven, has fallen 8.6%.

"There's no way out. We

pain," said Seema Shah, chief global strategist at Principal Asset Management, of the simultaneous declines in stocks and bonds.

Some investors say they will be watching to see whether the kickoff of the third-quarter earnings season later this week will help break the stretch of lockstep moves. They will be trying to identify which companies

the challenging environment and successfully pass on higher costs to their custom-

Stocks have been trading together because investors are largely focused on macroeconomic news.

Already, the S&P 500's one-month implied correlation, a measure of how the market expects stocks to move in relation to one another over the next 30 days, has started to drop, according to Susquehanna.

Brian Mulberry, client

just have to sit through the have been able to navigate portfolio manager at Zacks Investment Management, said he is advising investors to be picky when deciding which stocks to buy, suggesting they seek high-quality companies that are boosting earnings and paying dividends.

"You'll have these good companies priced lower than where they should be, and that creates an opportunity for investors," Mr. Mulberry