

THE WALL STREET JOURNAL

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What's News

Business & Finance

- ◆ **Chevron said** it would buy Hess in an all-stock deal valued at \$53 billion in the second major oil-industry tie-up this month, after Exxon Mobil's deal to acquire Pioneer Natural Resources. **A1**
- ◆ **A deepening selloff** in the U.S. bond market drove the yield on the 10-year U.S. Treasury note to 5% for the first time in 16 years, a milestone that has rattled stocks, lifted mortgage rates and fueled fears of an economic slowdown. **A1**
- ◆ **Stocks were mixed** with the Dow and S&P 500 falling 0.6% and 0.2%, respectively, while the Nasdaq Composite rose 0.3%. **B10**
- ◆ **Six weeks** into UAW's strike, the impact of the work stoppages are rippling through the car business, causing pain for the automakers themselves, as well as parts makers and factory workers. **A1, B1**
- ◆ **Roche has agreed** to buy the developer of a bowel-disease treatment from Roivant Sciences in a deal worth more than \$7 billion. **B1**
- ◆ **WPP said** it terminated the executive detained in China on charges of bribery and is conducting its own investigation into the matter. **B1**
- ◆ **The Justice Department** has requested more information from Tesla as it investigates the electric-car maker's autopilot technology. **B2**
- ◆ **Recent data** suggest the economy is accelerating despite higher borrowing costs, the resumption of student-loan payments and wars in Ukraine and the Mideast. **A2**

Two More Hostages Set Free

Talks for release of larger group held by Hamas stall as Israel rejects fuel demands

By JARED MALSIN AND SUMMER SAID

Hamas set free two more civilian hostages on Monday, but negotiations for a possible release of a group of 50 captives stumbled over the militant group's demand that Israel allow fuel deliveries into Gaza, according to officials familiar with the talks.

Hamas said it was releasing the two hostages, a pair of elderly women, on humanitarian grounds. Egyptian officials confirmed that the two hostages were released at Gaza's Rafah border crossing. Hamas, Qatar, Egypt and Israel have been in talks in recent days over a proposal to release a larger group in return for a steady flow of humanitarian aid, including fuel, three officials familiar with the talks said. Israeli officials have said they want all hostages released before permitting the delivery of fuel. Israeli officials have also told negotiators they believe Hamas and other militant groups could divert fuel for military purposes. The negotiations have reached an advanced stage, but Israel hasn't given approval for fuel to be delivered to Gaza via Egypt, according to the three officials. The Israeli prime minister's office identified the two women as Yocheved Lifshitz, 85 years old, and Nurit Cooper, 79. The two were kidnapped by Hamas fighters when they attacked the kibbutz of Nir Oz on Oct. 7. Their husbands, Oded Lifshitz, 83, and Amiram Cooper, 85, are still being held in Gaza, the prime minister's office said. The Lifshitzes' daughter, Sharone, said in an interview on Israeli TV that she still had no information about her father and others taken from the community. *Please turn to page A6*

◆ **Israel shows video evidence of attacks..... A6**
◆ **War revives U.S. interest in Iron Dome munitions..... A6**



Yocheved Lifshitz, 85, and Nurit Cooper, 79, two of the hostages seized by Hamas on Oct. 7, were released Monday.



Chevron To Buy Hess for \$53 Billion

The deal marks a bet that demand for fossil fuels will continue for decades

By COLLIN EATON AND PETER STIFF

Chevron said it would buy Hess in an all-stock deal worth \$53 billion in the second major oil tie-up this month, after Exxon Mobil's deal to buy Pioneer Natural Resources. The U.S. energy company said buying Hess would upgrade and diversify its portfolio, marking Chevron's entrance into an Exxon-led partnership overseeing a generational oil find in Guyana, while picking up additional U.S. shale assets largely in North Dakota. The transaction, less than two weeks after Exxon's acquisition of Pioneer, shows the U.S.'s second-largest oil company is similarly tying its future to a bet that the world will continue to have an appetite for oil for decades, even as many countries are seeking to cut emissions and transition toward green energy. The major oil companies' doubling down on fossil fuels follows a recent prediction by the International Energy Agency that fossil-fuel demand globally would reach its zenith this decade. "These are two great American companies coming together to be even stronger at a time when investment in American energy is important from the standpoint of jobs and from the standpoint of energy security," Chevron Chief Executive Mike Wirth said in an interview on Monday. The deal values Hess at \$171 a share based on Chevron's closing price on Friday, with Hess shareholders receiving 1.025 shares of Chevron for each Hess share. The price represents a premium of 4.9% from Hess's closing share price on Friday and 10.3% when compared with the stock's 20-day average price. Hess shares closed down *Please turn to page A8*

◆ **Heard on the Street: Oil deals signal more buys... B11**

World-Wide

- ◆ **Hamas set free** two more civilian hostages, but negotiations over a possible release of a group of 50 captives stumbled over the militant group's demand that Israel allow fuel deliveries into Gaza, according to officials familiar with the talks. **A1, A6**
- ◆ **An off-duty Alaska Airlines pilot** was arrested on suspicion of attempted murder after he allegedly tried to disable the aircraft's engines during a flight. **A3**
- ◆ **The hangover** from the bursting of the startup bubble is weighing on big U.S. university endowments, with write-downs in their growth and venture-capital investments driving a second straight year of weak returns. **A3**
- ◆ **Republican candidates** for House speaker pitched their strategies to colleagues ahead of a vote scheduled for Tuesday to designate a new party nominee. **A4**
- ◆ **The Biden administration** is proposing major changes to the H-1B visa program for high-skilled foreign professionals, after a finding that companies had colluded to try to increase their chances of winning a visa. **A5**
- ◆ **A Russian court** formally arrested a U.S. journalist for Radio Free Europe/Radio Liberty in a case that is exacerbating tensions between Washington and Moscow. **A16**
- ◆ **Argency stocks, bonds** and currency traded sharply lower after the ruling party's presidential candidate came out on top in the first voting round. **A16**

Staying Put in Gaza: 'If I Die, I Die'

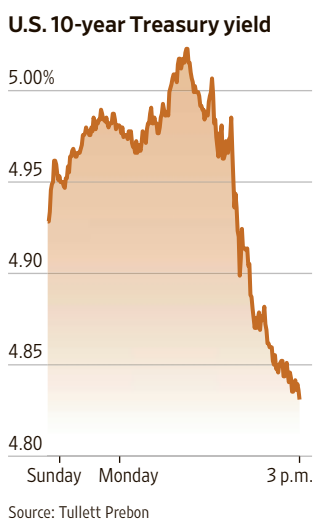
Many Palestinians won't leave homes in north, fearing permanent displacement

By CHAO DENG, STEPHEN KALIN AND OMAR ABDEL-BAQUI

In 1948, the Abu Sada family was forced out of what is now southern Israel. Many family members made a new life in the town of Jabalia, just north of Gaza City, settling on a plot of land to grow fruits and vegetables. Now, 75 years later, Israel is telling their descendants to move out again. Israeli airstrikes are raining down all

around, including one that killed 10 family members. But the family refuses to budge. "I don't care anymore," said Basil Abu Sada, a 35-year-old software engineer whose great-grandfather first brought the family to Jabalia. He worries that if they leave, they won't find food or shelter—or ever be able to return. "If I die, I die." Hundreds of thousands of other Palestinians are refusing to leave the

northern Gaza Strip, which the Israeli military is bombing in advance of an expected ground offensive. Many of the holdouts said that they fear displacement just as much as they do the dwindling supplies of food and water, the daily bombings and the looming invasion. The trauma of displacement is central to the identity of Palestinians in Gaza. Of the Gaza Strip's 2.1 million *Please turn to page A8*



Bond Trades at 5% for First Time in 16 Years

By SAM GOLDFARB AND PETER SANTILLI

A deepening selloff in the U.S. bond market drove the yield on the 10-year Treasury note to 5% in intraday trading for the first time in 16 years, marking a milestone that has rattled stocks, lifted mortgage rates and fueled persistent fears of an economic slowdown. A critical driver of U.S. borrowing costs, the 10-year yield rose as high as 5.021% in early-morning trading Monday,

up from about 3.8% at the start of the year. It then reversed course and settled at 4.836% after the long-awaited breach of 5% stoked fresh buying interest. Yields, which rise when bond prices fall, have climbed since the start of 2022, when investors began worrying in earnest that the Federal Reserve might raise interest rates to fight inflation. In recent weeks, though, the selloff has only grown more intense and potentially

destabilizing, with the 10-year yield jumping at times more than 0.1 percentage point a day and investors scrambling for explanations. The lack of clarity has only added to investors' anxieties, reflected by declines in stocks that have pulled major indexes off their summer highs. Many investors and analysts argue that high yields make sense given signs that a resilient U.S. economy can withstand much higher interest rates than previously be-

lieved. Investor expectations for higher rates drive down prices of Treasuries and push up yields because investors anticipate that new bonds will offer larger interest payments. Others, though, worry that yields have become unmoored *Please turn to page A2*

- ◆ **Economy heats up, defying predictions..... A2**
- ◆ **Rise in yields draws investors to munis..... A9**
- ◆ **S&P falls as investors dive back into bonds..... B10**

New Jersey's Existential Crisis: Does 'Central Jersey' Even Exist?

New mid-state designation draws cries of fuhgettaboutit; 'we're Jersey Shore first'

By GINGER ADAMS OTIS

Say New Jersey and many think of native sons Bruce Springsteen and Frank Sinatra, Atlantic City, the boardwalk and the famous Jersey Shore (as well as its namesake reality show). But say Central Jersey, and many may think: *You making that up?* They are, sort of. Gov. Phil Murphy in late August signed a bill that would highlight the state's oft-overlooked middle section as its own distinct tourism region. *Please turn to page A4*

"Today, we settle the decades-old debate once and for all: Central Jersey exists," Murphy said at the bill-signing ceremony at a Revolutionary War site in Somerville. Of course, there is a hitch. Some parts of Jersey want no part of this region. The newly blessed Central Jersey tourism region includes four counties. But the new law hints at the possible annexation of other counties that are geographically located in Central Jersey—but that many Jerseyites consider to be culturally part *Please turn to page A4*

INSIDE



WORLD NEWS
U.S. journalist for Radio Free Europe/Radio Liberty formally arrested by Russian court. **A16**

PERSONAL JOURNAL
Retirees living on boats and RVs open up about life on the go. **A10**

Strike Hurts Car Sector, Spares Buyers for Now

By SEAN McLAIN AND RYAN FELTON

Six weeks into United Auto Workers' strike, the impact of the work stoppages are rippling through the car business, causing pain for the automakers, as well as parts makers and factory workers. One corner of the industry that has been largely spared: dealerships and consumers, due in part to an inventory buildup of cars and parts before the strikes. On Monday, the UAW expanded the walkouts, this time targeting a 6,800-worker factory in suburban Detroit that makes the Ram 1500 trucks. The plant, owned by Chrysler parent Stellantis, is the automaker's largest in the U.S. and

among its most profitable, making highly lucrative pickups. With this latest action, there are more than 40,000 UAW members on strike at Stellantis, General Motors and Ford Motor at seven assembly plants and dozens of parts-distribution centers in the U.S. Assembly-line shutdowns resulted in layoffs at parts makers who make components for vehicles that are no longer being produced and cascaded to nonstriking factories at the Detroit car companies that supply parts and materials to facilities that are on walkout. In all, about 6,600 workers at GM, Ford and Stellantis *Please turn to page A5*

- ◆ **UAW strike expands to hit big Stellantis factory..... B1**

JOURNAL REPORT

Technology: Understanding how AI 'thinks.' **R1-10**

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U.S. NEWS

Economy Heats Up, Defying Predictions

Analysts are raising growth forecasts as Fed weighs another increase in rates

By DAVID HARRISON

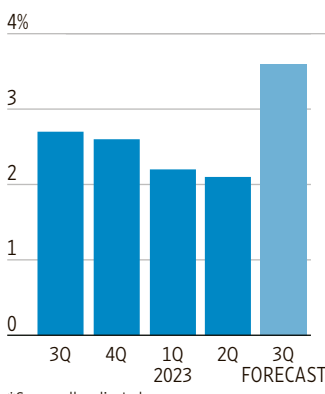
Earlier this year, economists and Federal Reserve officials predicted that the U.S. economy would be sputtering by now as higher interest rates cut into spending and investment.

The opposite is happening. Recent economic data suggest the economy is accelerating despite higher borrowing costs, the resumption of student-loan payments, and wars in Ukraine and the Middle East.

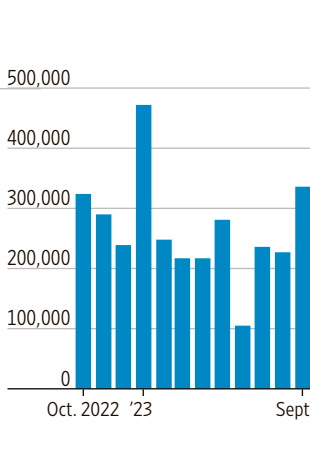
Analysts, many of whom had expected a recession this year, are pushing up their forecasts. Goldman Sachs economists last week raised their growth estimate for the third quarter ended Sept. 30 to an annual rate of 4% from 3.7%. High Frequency Economics, an economic consulting firm, raised its third-quarter forecast to 4.6% from 4.4% and its fourth-quarter forecast to 1.2% from 1%.

A figure in that forecast range for the third quarter would represent acceleration from 2.2% growth in the first quarter and 2.1% in the second. The Commerce Department reports the official fig-

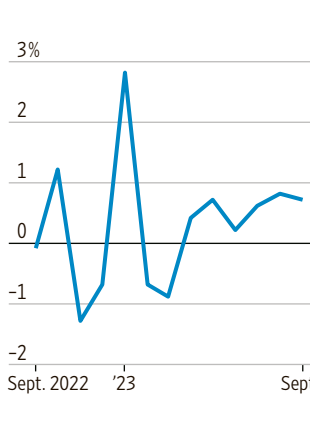
Inflation-adjusted change in gross domestic product, at annual rates*



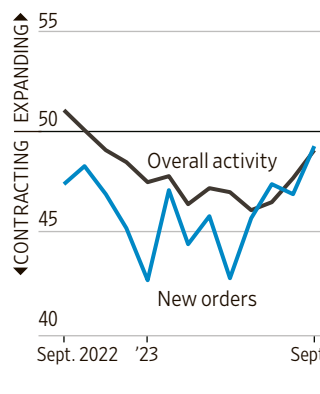
Monthly change in payrolls*



Retail and food-service sales, monthly change*



Indexes of manufacturing activity and demand suggest the sector could soon stabilize.



*Seasonally adjusted
Sources: Commerce Department, WSJ survey of economists (GDP); Labor Department (payrolls); Commerce Department (retail and food services); Institute for Supply Management (index)

ure Thursday.

By some measures, the labor market actually got stronger over the course of the third quarter. Employers added 336,000 jobs in September, up sharply from 227,000 in August and 236,000 in July. That hiring is fueling new spending. Monthly retail and food-service sales were up 0.7% in September after 0.8% in August, 0.6% in July and 0.2% in June.

Manufacturing, which sagged in the spring, is showing signs of rebounding as well. Factory output ticked up 0.4% in September, Fed data showed Tuesday, after falling 0.1% in August.

Big banks such as Citigroup and JPMorgan Chase reported strong earnings this month, and

executives say their outlook on the economy has improved. American Airlines also said Thursday that it expects travel demand this holiday season to be stronger than last year's.

Despite this momentum, inflation has continued to ease, to 3.7% in September from a recent peak of 9.1% in June of last year.

That has allowed Fed officials to indicate they would hold off on further rate increases unless they see signs of renewed price pressures. The Fed has raised interest rates to a 22-year high of between 5.25% and 5.5% over the past 19 months to cool the economy and bring inflation under control. Fed officials are "proceed-

ing carefully," Fed Chairman Jerome Powell said Thursday.

Investors are reacting to the momentum by pushing up yields on Treasury securities, assuming the strong economy will cause the Federal Reserve to hold off on interest rate cuts. The yield on the 10-year Treasury note topped 5% Monday for the first time since 2007.

There are several possible drivers for the recent acceleration. First, the combination of cooler inflation and still-strong wage increases means that paychecks go further.

Between December and June, inflation-adjusted incomes after taxes rose to an annualized rate of 7%, estimates Ian Shepherdson, chief econo-

mist at Pantheon Macroeconomics. That pushed up the household saving rate to 5.3% in May from 3.4% in December of last year, adding to the roughly \$1.2 trillion in accumulated savings left over from pandemic-era stimulus programs.

Receding fears of a recession could also be making households more comfortable spending money, especially now that it appears the economy has shrugged off the effect of the failures of Silicon Valley Bank and Signature Bank in the spring, said Marc Giannoni, chief U.S. economist at Barclays.

After predicting a recession for the past year, economists surveyed by The Wall Street Journal this month said they

now believe that the economy will avoid a downturn in the next 12 months.

Meanwhile, the Fed's interest-rate increases haven't had the expected cooling effect. That could be because businesses and households locked in lower interest rates during the pandemic when the Fed's short-term rate target was near zero, Powell said Thursday.

Where does the economy go from here? Economists point to three possible outcomes.

First, the momentum might be short-lived. Even though hourly wages are going up, workers are working fewer hours. Year-over-year weekly wages adjusted for inflation fell 0.2% in September, the first decline since May. If this continues, households could pull back.

Second, the economy could continue to run hot and send inflation up again. That could prompt the Fed to raise interest rates further, slowing the economy and raising the risk of recession.

Third, growth could stay strong but inflation remain under control. This would be the best of all worlds because it would imply higher productivity, meaning that the economy could produce more goods and services without bottlenecks that lead to inflation. If that is the case, stronger growth could continue without the Fed having to raise interest rates.

NEW YORK

Sen. Menendez Pleads Not Guilty

U.S. Sen. Bob Menendez pleaded not guilty Monday in Manhattan federal court to a new criminal charge alleging he conspired to act as an agent of the Egyptian government when he headed the Senate Foreign Relations Committee.

It was his first appearance before Judge Sidney H. Stein, who is expected to preside over a trial tentatively scheduled for May. At an arraignment before a magistrate judge last month, Menendez was released on a \$100,000 bond.

Prosecutors said the Democratic New Jersey senator accepted bribes of cash, gold bars and a luxury car from three New Jersey businessmen in exchange for a variety of corrupt acts.

—Associated Press

COLORADO

Ex-NSA Employee Tried to Sell Secrets

A former National Security Agency employee pleaded guilty Monday to trying to sell classified information to Russia.

Federal prosecutors agreed not to ask for more than about 22 years in prison for Jareh Sebastian Dalke when he is sentenced in April. The 31-year-old Army veteran from Colorado Springs had faced a possible life sentence for giving the information to an undercover FBI agent who prosecutors say Dalke believed was a Russian agent.

Dalke was arrested Sept. 28, 2022, after authorities say he arrived at Denver's downtown train station with a laptop and used a secure connection set up by investigators to transfer classified documents.

—Associated Press

CONNECTICUT

Two Men Missing After Boat Sinks

Coast Guard personnel in Connecticut were searching Monday for two men a day after they went missing when their small fishing boat sank in the Long Island Sound, authorities said.

Three other people were rescued after the fishing boat sank Sunday off Westport, police said.

A boater traveling near Westport spotted a man standing on a navigational buoy around 4 p.m. Sunday, Westport Police spokesperson Lt. Eric Woods said. Another man and a woman were rescued from the water nearby, Woods said.

All three people were taken to a hospital for evaluation.

—Associated Press

U.S. WATCH



GIANT DISPLAY: A woolly mammoth was installed Monday for the American Museum of Natural History's coming exhibition 'The Secret World of Elephants' in New York City.

Treasury Yield Hits 5%

Continued from Page One from the outlook for Fed policy and are responding to more unpredictable factors, such as souring sentiment about the size of the federal budget deficit and government's willingness to address it.

The two theories imply different outcomes. If falling bond prices are justified by the strong economy, concerns

about a 5% yield on the 10-year might prove just as fleeting as when the yield reached other milestones, dating to early 2022 when it jumped to 2.5% from 1.5%.

If not, higher yields might finally lift borrowing costs to a point that businesses and consumers substantially pull back on spending.

"The question is: Is a 5% 10-year the type of number that breaks the U.S. economy?" said Scott Kimball, chief investment officer at Loop Capital Management. "Probably not, but you're going to be in that yellow" caution zone, he said.

Investors and economists pay close attention to Treas-

ury yields, and the 10-year yield in particular, because they set a floor on the interest rates across the economy, including those on mortgages and corporate debt.

For investors, yields also represent a risk-free return that they can get by holding government bonds to maturity—an important benchmark for determining the prices of riskier assets such as stocks.

A 5% 10-year yield is hardly unprecedented in U.S. history. But it was unthinkable to most investors just a few years ago, after a decade of sluggish inflation and ultra-loose Fed policies, including near-zero short-term interest rates and direct pur-

chases of Treasuries.

The Covid-19 pandemic marked a turning point, leading to historic government stimulus programs, a surge in inflation and a different economy, marked by healthier private-sector balance sheets, changed work habits and much higher rates.

Investors' views of the economy have evolved gradually. At the start of this year, many expected yields to fall based on the assumption that they were already high enough to precipitate a recession.

Instead, growth has remained steady. And yields have generally kept rising, outside of a scare in March when the collapse of Silicon Valley Bank spurred fears of an imminent downturn. Yields also fell in the wake of Hamas's Oct. 7 attack against Israel but have since picked up again.

For all the debate about what has fueled the latest, more acute selloff, many investors agree that the 10-year yield rose in the summer due largely to bets that rates would stay high for longer.

Investors had previously piled into wagers that the Fed would keep raising interest rates until it triggered a recession and then start cutting rates significantly. That led investors to prefer longer-term Treasuries—holding their yields well below those of shorter-term ones in what is known as an inverted yield curve.

By the late summer, though, conditions were changing: Inflation was cooling and the Fed was signaling that it was nearly done raising rates. Still, the economy, instead of sputtering, was showing signs of accelerating.

The result was a massive reversal in investor position-

ing, with longer-term Treasuries falling out of favor along with recession bets. Yields on those bonds shot higher, closing the gap with short-term yields.

Meanwhile, other potential challenges have emerged.

At the end of July, the Treasury Department said that it would need to borrow more in the coming months than investors had been anticipating, leading to a larger-than-expected increase in the size of short and long-term Treasury debt auctions.

The following day, Fitch Ratings downgraded the U.S. credit rating to just below triple-A, citing a worsening budget outlook and governance concerns, highlighted by standoffs over lifting the federal debt ceiling.

Since then, the rise in Treasury yields has only furthered fed anxieties about the budget, given that higher yields mean the government needs to spend more on interest payments. And Washington

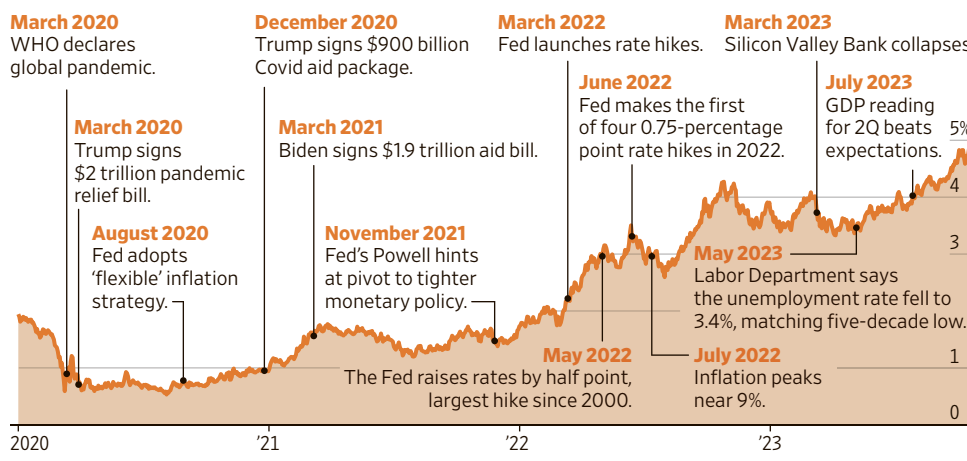
has continued to show signs of dysfunction, narrowly averting a government shutdown in a short-term budget deal that resulted in the ouster of Rep. Kevin McCarthy (R., Calif.) as House speaker.

Those developments are all helping to push yields higher, as investors balk at the prospect of ever larger Treasury issuance, Kimball said. "Whether the government wants to admit it or not, the U.S. Treasury is now more double-A than it is triple-A," he said.

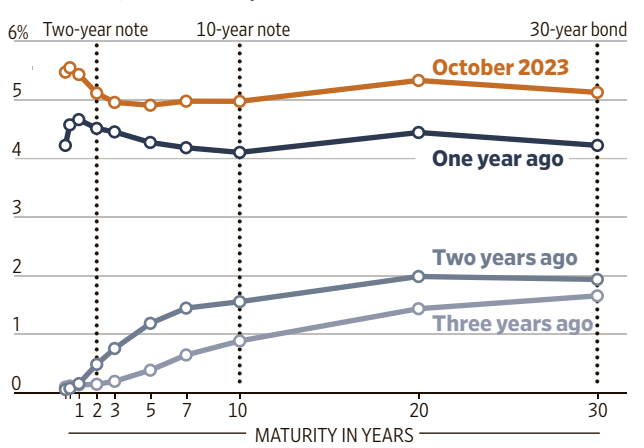
Still, some investors said that alarm about the U.S. fiscal situation is overblown and not having a major impact on bonds. Leah Traub, a portfolio manager at Lord Abbett, noted that Treasury auctions have generally proceeded smoothly in recent weeks, with signs of less overseas demand.

'Is a 5% 10-year the type of number that breaks the U.S. economy?'

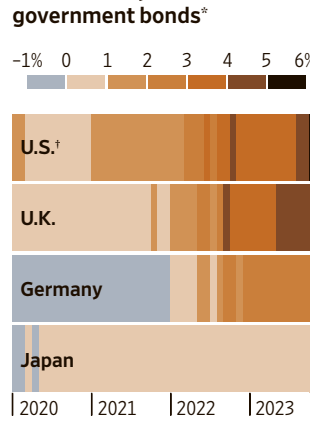
Yield on the 10-year Treasury note



Yield curve, U.S. Treasuries*



Yields on 10-year government bonds*



*All data are as of month-end, except the most recent month which is as of Oct. 23. †As of Monday morning
Sources: Tullett Prebon (yields); Treasury Department (yield curve)

CORRECTIONS & AMPLIFICATIONS

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U.S. NEWS

Big University Endowments See Weak Returns

By JULIE CHUNG AND ELIOT BROWN

The hangover from the bursting of the startup bubble is weighing on big U.S. university endowments, with write-downs in their growth and venture-capital investments driving a second straight year of weak returns.

The Massachusetts Institute of Technology reported a loss of 2.9% and Duke University a loss of 1% for the fiscal year ended June 30, while endowments at Yale and Stanford gained 1.8% and 4.4%, respectively. The median return for endowments and foundations of more than \$1 billion was 5.6%, according to a preliminary estimate from Cambridge Associates.

That was well behind the overall stock market. The MSCI All Country World Index and the S&P 500 gained 17.1% and 19.6% for the period, including dividends, respectively. They were boosted by the rally in tech giants including Microsoft and Nvidia that have benefited from developments in artificial intelligence. Small endowments of less than \$500 million, which typically have less exposure to private investments and more to public equities, had a median return of 8.8%, according to Cambridge.

"You were at the mercy of portfolio construction," said Matt Bank of Charlotte, N.C.-based Global Endowment Management, an outsourced investment firm. "Those decisions drove your short-term results, and the specific decisions you made within categories mattered less."

Exposure to China also had a negative impact on returns, several endowment chiefs said.

Universities could face pressure on their operating budgets in coming years should their endowments continue to post

returns well below their long-term targets. Even some endowments that posted modest gains shrank in size, with their performance and donor gifts failing to keep pace with distributions. Many schools already are grappling with higher interest rates, which have increased their costs.

Some schools also have faced pushback from major donors over their responses to the attacks by Hamas on Israel; should those universities experience a significant drop in giving, they could be more dependent on endowments to perform.

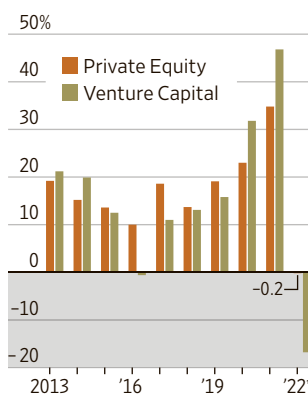
Endowments once were wary of venture capital, seeing it as a risky offshoot of private equity. But years of ballooning startup valuations—with many companies staying private for longer—led more endowments to plow into venture capital, focusing on both early and later-stage investments. Overall, large endowments had 14.5% of their assets in venture capital as of June 2022, up from 7% in 2017, according to the National Association of College and University Business Officers, a higher-education trade group. The growth partly reflects investment gains.

Endowments' embrace of venture capital contributed to their biggest gains in a generation in the fiscal year that ended June 2021.

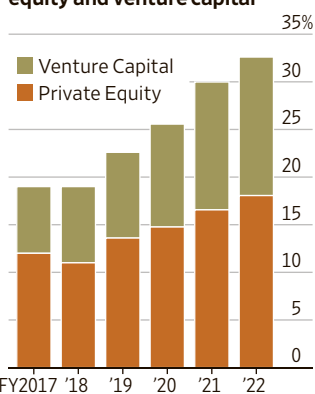
But rising rates made fast-growing, unprofitable tech companies far less appealing to investors. Spending cuts at mature tech companies took away a key source of growth for startups, the market for new listings collapsed and the flood of institutional money into venture slowed to a trickle.

Venture valuations tend to lag behind in downturns, and many fund investors have said they are concerned that the values reported by venture firms still have further to drop.

One-year rate of return for private funds

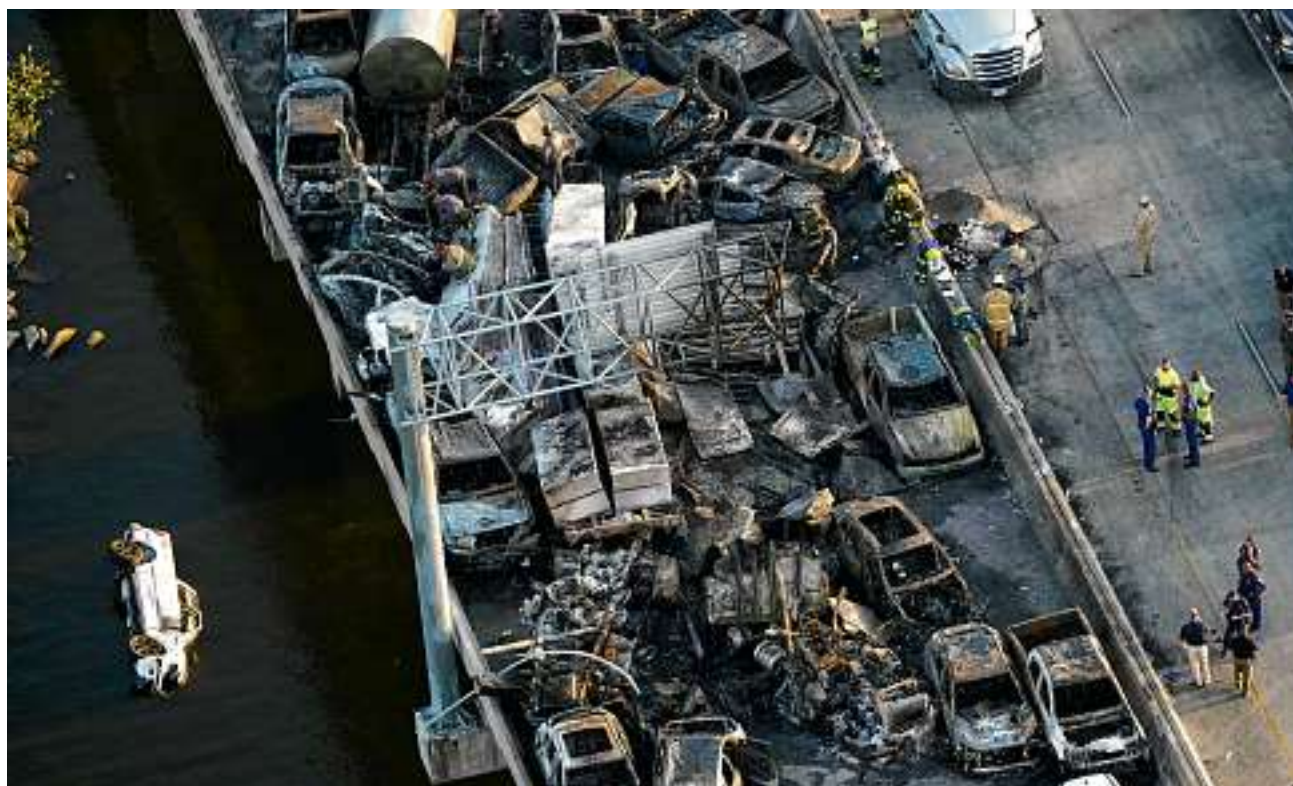


Percentage of large endowments devoted to private equity and venture capital¹



¹Most recent year for which full data is available and university endowments of more than \$1 billion. 2022 is the most recent year available. Sources: Preqin (rate of return); NACUBO-TIAA Study of Endowments (large endowments)

At Least 7 Dead in Louisiana 'Superfog' Crashes



MASSIVE PILEUP: Responders were seen Monday in Manchac, La., near wreckage from several car crashes that were caused by smoke from marsh fires and dense fog. At least seven people were killed and 25 people were injured, authorities said.

Libraries Are on Front Lines Of U.S.'s Mental-Health Crisis

Staffers sometimes face violence as they aid troubled patrons, offer social services

By JULIE WERNAU

HUNTINGTON, W.Va.—When Michael Bare started working as a library assistant, he thought he would be helping with term papers or leading a book club. Instead, he spends most of his time assisting patrons in crisis with nowhere else to go.

"They just want someone to talk to," said Bare, 37, who has worked for four years at the library in this city of 46,000 on the Ohio River where West Virginia, Ohio and Kentucky meet.

Libraries are the new front line in America's mental-health crisis. Librarians are helping more patrons in crisis, and many cities are hiring social workers to help them. About two-thirds of nearly 600 library workers surveyed by Urban Librarians Unite in 2022 said they had experienced violent or aggressive behavior from patrons.

One of the few indoor public spaces open to all comers, libraries are now the scene for all that ails a public scarred by the pandemic and an opioid epidemic. For staff, that means reversing overdoses in bathrooms; confronting patrons watching pornography; or defending against people brand-



'Our community is trying to do something,' says Breana Bowen, director at Cabell County Public Library in Huntington, W.Va.

dishing guns, or a snake in a jar. Some people come to the library to sleep, get warm or use the bathroom. Others are looking for jobs, housing or just somewhere safe to read.

"They don't have anywhere else to go, and they don't trust other places. I love being that place. But after a while, it's taxing and wearing on you," said Kevin King, head of community engagement at the Kalamazoo Public Library in Michigan.

The library is in the center of Kalamazoo, close to the hospital, bus-and-train station and mental-health agencies. When a homeless patron stops taking medication, security guards at the library give King a heads-up there could be trouble.

Every morning, a line forms of mostly homeless patrons

waiting for the library to open at 9 a.m. Staff serve them doughnuts, fruit and coffee and ask what else they need.

Kalamazoo's library in 2019 started hiring peer navigators with experience of being homeless or using illicit drugs themselves, after a reference librarian didn't know what to do when a developmentally disabled adult complained of being hungry.

Recently, a tall man was yelling angrily in the library. A peer navigator spoke with him and learned he was a veteran with a dead hearing-aid battery. He wasn't taking his psychiatric medication. The navigator, also a veteran, worked with the veterans hospital to help replace the battery and get him back on his medication.

"Sometimes what they need isn't a book," said Martha Link Yesowitch, community partnerships manager at Charlotte Mecklenburg Library in North Carolina, which has added a community health worker, social-work interns and de-escalation training for staff.

Six years ago, fewer than two dozen libraries in North America employed full-time social workers, said Sarah Johnson, a licensed social worker and adjunct lecturer at the University of Illinois Urbana-Champaign. Today, more than 100 employ social workers, and more have social-work interns, she said.

The social-work program at the library in Huntington, W.Va., is one of the country's oldest, dating to the 1970s. On the third floor, social workers help patrons with substance-use disorder find treatment centers and victims of domestic violence find safe havens. They assist patrons with sorting out utility bills, bus tickets and housing.

A rise in methamphetamine in Huntington's illicit drug supply has worsened some people's mental distress. City agencies are so overburdened that it can take a month to get a person who is struggling on the streets involuntarily committed at a hospital.

"Our community is trying to do something," said Breana Bowen, director at the Cabell County Public Library in Huntington.

Off-Duty Pilot Arrested in Alleged Bid to Disable Plane

By ALISON SIDER AND ANDREW TANGEL

An off-duty Alaska Airlines pilot riding in a cockpit jump seat on a regional flight was arrested on suspicion of attempted murder after he allegedly tried to disable the aircraft's engines during a flight.

Alaska Flight 2059, operated by Horizon Air, was diverted Sunday evening to Portland, Ore., after the off-duty pilot "unsuccessfully attempted to disrupt the operation of the engines," during a flight from Seattle Paine Field International Airport in Everett, Wash., to San Francisco, according to Alaska Air Group, the parent of both Horizon and Alaska Airlines.

The Horizon captain and first officer quickly responded and secured the plane, and engine power wasn't lost, Alaska said. Portland airport police arrested Joseph D. Emerson without incident once the flight landed, according to a spokeswoman for the Port of Portland.

An attorney for Emerson couldn't be identified. A spokeswoman for the Multnomah County, Ore., District Attorney's office said Emerson

might be arraigned as soon as Tuesday, adding the office was working with federal authorities including the Federal Bureau of Investigation.

Alaska said that Emerson tried to shut down the plane's engines by engaging the fire-suppression system. That system consists of a T-shaped handle for each engine. If the handle is fully deployed, a valve in the plane's wing closes to shut off the flow of fuel to the engine. The Horizon pilots reacted quickly and reset the handles, Alaska said. "Our crew responded without hesitation to a difficult and highly unusual situation, and we are incredibly proud and grateful for their skillful actions," it said.

The Federal Aviation Administration said the incident was "not connected in any way, shape or form to current world events."

A federal law-enforcement official said the case appeared to be an isolated incident and unrelated to terrorism. Emerson was booked in a local jail on 83 counts of attempted murder as well as charges of reckless endangerment and endangering an aircraft, according to the Multnomah County Sheriff's Office.



Pulse employees embraced in front of the club in 2016.

Orlando to Buy Site Of Club for Memorial

By ALYSSA LUKPAT

The city of Orlando, Fla., voted to buy the site of the Pulse nightclub shooting, with plans to turn the grounds into a memorial for the 49 people who were killed there in 2016.

The Orlando City Council on Monday unanimously approved the \$2 million purchase of 1912 South Orange Ave., the land housing the now-closed club. Mayor Buddy Dyer last week said the city would determine the next steps for building a memorial.

Pulse was a popular gay nightclub that has since become a divisive spot for the dozens of people who survived the shooting and the families of those who were killed. At

least 50 others were injured. Some have wanted to build a simple memorial and save funds for the victims. Others have advocated a grander vision. The onePULSE Foundation, founded by an owner of the club, led the appeals for a memorial with a reflecting pool encircling the Pulse building, as well as a museum and a rooftop promenade.

Some family members of the victims have asked the city for years to build a memorial. An interim memorial with a small grove and a picture wall is currently at the site.

President Biden in 2021 designated the Pulse site as a national memorial. "Pulse Nightclub is hallowed ground," he said at the time.

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U.S. NEWS

GOP Members Hope To End Speaker Rift

WASHINGTON—House Republicans haven't settled on a consensus candidate for speaker, but many emerged from a meeting Monday with guarded optimism that they will be able to rally behind whoever clinches the nomination after three weeks of public feuding.

By Siobhan Hughes, Katy Stech Ferek and Lindsay Wise

Lawmakers met Monday night to hear proposals from candidates who explained their strategy for unifying a fractured group and executing legislative priorities such as cutting federal spending and increasing border security. A GOP vote to select the party's nominee is scheduled for Tuesday morning, with a floor vote of the full House expected in coming days.

While many lawmakers have yet to publicly endorse a candidate, support appeared to pool around House Majority Whip Tom Emmer (R., Minn.); Republican Study Committee chairman Rep. Kevin Hern (R., Okla.); and House Republican conference vice chairman Rep. Mike Johnson (R., La.); and Byron Donalds of Florida, an ally of former President Donald Trump.

"I'll tell you this: The morale in the room seems higher," said Rep. Nick LaLota (R., N.Y.). "The hope that we do it this week seems higher than previous weeks. There seems to be some sense of compromise in the room, a little less insistence that it has to be their person to win."

Other candidates for speaker include Rep. Pete Sessions (R., Texas), a former head of the House Republicans' campaign arm; Rep. Gary Palmer (R., Ala.), who was part of McCarthy's inner circle as a member of the House Elected Leadership Committee; Rep. Jack Bergman of Michigan; and Rep. Austin Scott of Georgia.



Tom Emmer is highest-ranking of the GOP speaker hopefuls.

(R., Calif.), saying he broke promises he made when he secured the post after 15 rounds of voting in January.

Two subsequent would-be replacements, Reps. Steve Scalise of Louisiana and Jim Jordan of Ohio, were nominated but failed to win the gavel and withdrew. All were felled by the tough math facing a potential leader. Because of Republicans' narrow 221-212 majority, GOP candidates for speaker can lose no more than four votes from their party, assuming all Democrats vote against them.

Rep. Dan Meuser of Pennsylvania dropped out of the race during the meeting, saying there were enough talented candidates. The large field sets the stage for an unpredictable result. With eight candidates, the internal House GOP conference

voting could go for multiple rounds, with the candidate receiving the fewest number of votes in each round removed until a candidate wins a majority of the votes. After that, the speaker-designate must win support from a majority in the House, hitting 217 of the 433 House votes if all members show up and cast a vote for an individual.

Emmer, 62 years old, appeared to hold an advantage heading into the race by having jobs within the Republican party that required him to build relationships with individual members. He served as the chairman of the National Republican Congressional Committee, the House Republicans' recruiting arm, from 2019 through 2022 before winning the No. 3 position in the House Republican conference.

He is backed by McCarthy, and his supporters say that nobody is better equipped to raise money or manage the conference.

But Emmer doesn't have a close relationship with Trump, whose allies are starting to target Emmer. Former Trump strategist Steve Bannon on Friday called Emmer "the biggest never-Trumper in the House."

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New Jersey Is Stuck On The Middle

Continued from Page One of the Jersey Shore.

Join the Central Jersey tourism zone? Not on Tony Soprano's life.

Sam Hammer, longtime owner of the Crab's Claw Inn in Lavallette, in Ocean County, said such a change might be difficult for locals to stomach.

"We're part of Central Jersey, sure, and anything that brings people to our area is good, but we're Jersey Shore first," he said. "Jersey Shore, do or die."

New Jersey residents have traditionally defined the state by cultural markers, including the sub-chomping North, a cousin to New York, and the hoagie-eating South, a frenemy to Philly—all the while squabbling among themselves over the nebulous identity of the state's middle section, anchored by Trenton, home of the pork roll. Gov. Murphy once even defended Central Jersey as its own sovereign region on "The Late Show with Stephen Colbert."

New Jersey-sanctioned tourism zones get state funding, and can apply for grants to promote and brand themselves as a defined region. And, they get labeled as such on the state's tourism map.

The idea for elevating Central Jersey stems from the coming 250th anniversary of the 1776 signing of the U.S. Declaration of Independence, according to main bill sponsor, State Sen. Andrew Zwicker.

In his view, New Jersey's claim to Revolutionary War fame rivals that of Massachusetts and neighboring Pennsylvania, and should be marketed as such as the anniversary approaches. Where did some of those battles take place? Central Jersey. "There were crucial battles in New Jersey," said Dr. Philip C. Mead, chief historian and curator of the Museum of the American Revolution.

The new Central Jersey tourism region includes Hunt-



Senator motions to map alleging 'Central Jersey Does Exist!'

Gov. Murphy signed a bill making four counties part of the newly-created Central Jersey tourism designation in late August.



Hunterdon, Mercer, Middlesex and Somerset Source: State of New Jersey

erdon, Mercer, Middlesex and Somerset counties, home to sunflower farms, Revolutionary War sites and more.

Left out for now is Union county, and also Monmouth and Ocean counties, which align geographically with mid-state, but are popular beach destinations along the Atlantic coast—aka the Jersey Shore.

Yet the new law references the possible inclusion of other counties, and Gov. Murphy and Zwicker have made it clear they'd like to see more areas under the Central Jersey banner. A recent map of "Central Jersey Borders" shared on one of New Jersey's official social-media accounts included Monmouth and Union counties, and labeled Ocean County, "central debatable."

Hundreds of people responded, many to bicker. "Ocean is not central jersey there is no debate @ Gov-Murphy."

"Wait, we went from 'there

is no central NJ' to a huge chunk of the state is central NJ?" Along the Jersey Shore, the map is often going over like stale taffy.

"We are in Central Jersey, but our identity is Jersey Shore. It's historic, one of a kind," said Patty Barber, the senior vice president of Silverball Retro Arcade, a boardwalk institution in Asbury Park in Monmouth County.

"They'll have to pull Jersey Shore from my hands."

However, should Central Jersey find a world-class marketing campaign, Barber could be persuaded to defect. "I reserve the right to be a turncoat," she said.

Still, instant success may prove elusive for a region that's spent decades defending its own existence and outshone by well, most other tourist destinations.

Fortunately there are models. John Ricks, executive director of the Nebraska Tourism Commission that came up with that state's award-winning campaign— "Nebraska. Honestly, it's not for everyone"—said Central Jersey "shouldn't try to compete on stuff."

For one ad, Ricks' team went to Toadstool Geologic Park, a windswept corner of northwest Nebraska full of rock formations that look like giant mushrooms. They photographed a couple of hikers jumping from one toadstool to another. The challenge for Central Jersey will be to find its own inner toadstool.

"Don't try to be like everybody else," Ricks said, of his advice for Central Jersey. "Be yourself." (Whatever that may be.)

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U.S. NEWS

U.S. Moves to Overhaul Its H-1B Visa Program

By MICHELLE HACKMAN

WASHINGTON—The Biden administration is proposing major changes to the H-1B visa program for high-skilled foreign professionals, after the government found this year that companies had colluded to try to increase their chances of winning a coveted visa.

The proposal, published in the Federal Register, would revise how the H-1B lottery is run.

Right now, applicants who have an eligible job offer in the U.S. but need a visa to start working can submit an entry into the lottery, and at the end of that entry window, roughly 85,000 visa recipients are selected at random. In recent years, though, the government found evidence that individual applicants were submitting as many as 10 entries into the lot-

tery to increase their chances of winning. Many, moreover, were being sponsored by the same handful of small, little-known tech companies.

The growth in this practice was so rapid that entries to the lottery last year hit more than 780,000, up from 270,000 three years earlier.

Under the proposed new process, each person applying for a visa will be weighed equally, no matter how many entries they submit.

Since its creation in 1990, the H-1B visa has served as the primary way companies can hire foreign employees with college degrees, particularly international students educated in the U.S. Though it is temporary, it is one of the few visas that allow foreign employees to eventually become U.S. permanent residents and citizens.

Apart from the lottery changes, the Biden administration is also proposing, for the first time, to allow entrepreneurs to sponsor themselves for an H-1B visa. That change would have a seismic impact on Silicon valley, where many of the people launching new tech startups are foreign-born and have few or no long-term options to remain in the country, typically after coming here for college.

Other changes are also intended to make the visa more accessible. For example, the government is proposing to broaden the definition of who can qualify for an H-1B visa outside the lottery process.

The proposal also codifies “prior deference,” which means officers should approve an H-1B renewal if the applicant has previously been approved to work on a visa for the same job.

Minnesota Representative Readies Long-Shot Bid Challenging Biden

By KEN THOMAS AND JOHN MCCORMICK

WASHINGTON—Rep. Dean Phillips of Minnesota is preparing to formally announce a long-shot Democratic primary challenge to President Biden, offering himself as a next-generation alternative to the 80-year-old president, people familiar with his plans said.

The 54-year-old Phillips, after months of encouraging fellow Democrats to challenge Biden, has told people in his home state that he plans to announce his presidential campaign on Friday in Concord, N.H., one of the people said.

Phillips and a spokesperson for the congressman didn't respond to text messages on Monday. People close to Phillips have said he hasn't made a final



Dean Phillips is expected to enter the Democratic primary.

have declined to abide by a DNC calendar that would have New Hampshire and Nevada follow South Carolina in the order of contests. New Hampshire officials say state law calls for them to hold the nation's first presidential primary.

Biden's New Hampshire supporters are expected to mount a write-in campaign. The president isn't expected to file to be on New Hampshire's primary ballot because the contest isn't sanctioned by the national party he leads.

A Phillips entry could be a distraction for Biden, who faces minor primary opposition from activist Marianne Williamson and has been gearing up for a likely rematch with former President Donald Trump.

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UAW Strike Squeezes Automakers

Continued from Page One have been temporarily laid off as a result of the strike, which targeted factories in Kentucky, Michigan, Ohio and Missouri, according to figures released by the companies.

In the supply base, thousands of other workers have been idled at parts makers because of the strike. About 40% of suppliers responding to a trade-group survey said they laid off some employees since the start of the walkouts, according to MEMA, an industry group representing parts makers. That figure is expected to jump by the end of October.

The shock to the supply chain could intensify as the strike drags on, causing lasting damage to financially fragile parts makers.

Customers could face shortages of popular models and replacement parts, but so far, dealers said the impact has

been muted. Having experienced a 40-day strike at GM in 2019, many retailers this time worked to stockpile parts ahead of factory shutdowns.

“At this point, it's a wait and see,” said Autumn Heacock, a spokeswoman for the California New Car Dealers Association.

The lost vehicle production is starting to add up, especially with the UAW's latest expansion of the strike to a Ford factory in Kentucky that makes highly profitable F-Series Super Duty pickups.

With the idling of that factory, the Detroit Three are now losing about 43,000 vehicles a week in factory output, about 30% less than what they were building over the summer, according to industry-services firm Cox Automotive.

The idled factories benefited rivals, such as Volkswagen and Toyota Motor, which picked up market share in September, said Jonathan Smoke, Cox's chief economist.

The UAW took an unorthodox approach with this strike, opting to target specific plants at three car companies, rather than an all-out walkout at one automaker. The tactic limited the financial pain for UAW members, most of whom are

still working at full pay, and tempered the blow to automakers—at least initially.

The UAW warned the strikes could expand the longer there is no labor deal, a move aimed at gradually ratcheting up the pressure on company bargainers by keeping the automakers' biggest moneymaking plants in the union's crosshairs.

Based on the lost production to date, GM and Ford each lost nearly \$770 million in earnings before interest and taxes, according to estimates Friday from Deutsche Bank. Stellantis lost an estimated \$384 million, the bank's analysts wrote in a research note. Investors will get their first glimpse of the strike's toll on GM and Ford when the two report third-quarter earnings this week.

Many suppliers were in a fragile state leading into the strike, after being squeezed in recent years by rising labor and raw-material costs. The pressure is most severe among smaller companies and some are in distress, supply-chain consultants said.

The strike at Ford has resulted in more than 13,000 layoffs at nearly 90 supplier sites, said Liz Door, the company's supply-chain chief.

Most suppliers weathered the strike because cash has continued to flow in from prior work, which tends to be paid a month-and-a-half or two months after the shipment was sent.

At dealerships, consumers have plenty to pick from when it comes to the domestic brands. All three car companies had enough unsold stock to last them nearly two months or more at the end of September.

Stellantis, which owns Jeep, Ram, Chrysler and other U.S.-sold brands, had the most supply on dealer lots at the end of September, followed by Ford and then GM, according to Motor Intelligence, an industry-research firm.

The Ram brand had ample stock of its 1500 pickups, enough to last it more than two months, and it builds the pickup at another suburban Detroit factory and a facility in Mexico.

Parts continue to trickle into dealership service centers and getting them hasn't become a problem yet, dealers said.

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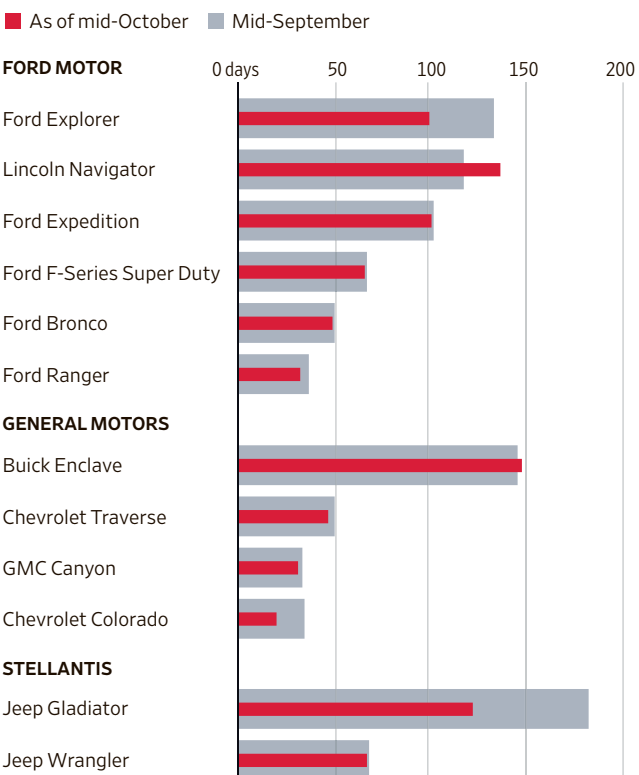
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Vehicle inventory in days of supply, by model



Source: Cox Automotive

WORLD NEWS

Israel Shows Video Evidence of Attacks

Footage is part of government effort to document scope of the Hamas assault

By SUNE ENGEL RASMUSSEN AND SHOSHANNA SOLOMON

TEL AVIV—Israel’s military on Monday screened a 47-minute video featuring images of Hamas militants’ killing spree across southern Israel on Oct. 7, as part of a government effort to document the attacks and push back against what it says are denials of their severity.

The footage was gleaned from body cameras worn by Hamas fighters who died, security cameras and the cell-phones and social media of Israeli victims, the military said. It showed the video to 170 reporters at a military base on the outskirts of Tel Aviv.

“We are making a collective memory for the future. It will define who we are,” Brig. Gen. Daniel Hagari, the top spokesman for Israel’s military, said at the screening. If Hamas’s doctrine “is crimes against humanity, it’s not just Israel’s problem.”

The video shows scenes of violence and terror from the hours-long attacks. The body of a decapitated Israeli soldier lies on a concrete floor. A Hamas militant uses a garden hoe to try to chop off the head of another man. Revelers at a music festival run for their lives.

other man. Revelers at a music festival run for their lives.

The Israeli military says it is still collecting evidence from southern Israel, and compiling a comprehensive account of the Hamas attacks. About 1,400 people were killed in Israel and scores of others were kidnapped and taken back to Gaza, where they are being held hostage.

Israel has responded with a campaign of airstrikes hitting what it says are Hamas targets in the Gaza Strip, and the military says it is preparing for a ground offensive. Gaza’s Hamas-controlled Health Ministry says at least 5,000 people have been killed.

As protests in support of Palestinians have spread across the Arab world and Western capitals, Israel has sought to shore up support for its war effort, arguing that Hamas committed crimes against humanity, which should concern not just Israel.

In one scene early in the video, captured on a militant’s body camera, armed Hamas fighters walk through a quiet Israeli community near the border with Gaza. An Israeli man and two boys run and hide in a garden shed. A pursuing fighter lobs a hand grenade inside.

Then he drags out the two boys. “I want my mom,” one of the boys shouts at the militant in English. His brother cries: “Itay, I think we are go-



The covered bodies of victims of a Hamas massacre earlier this month near the Gaza border.

ing to die.”

Hamas has denied it targeted civilians. Khaled Meshaal, director of Hamas’s diaspora operations and a chief spokesman for the group, said Israeli Prime Minister Benjamin Netanyahu was fabricating allegations of massacres to win sympathy in the West.

Robert Rozett, senior historian at the International Institute for Holocaust Research, Yad Vashem, said people who deny the scale and violence of the attacks are unlikely to be persuaded by any amount of evidence. He said their unwillingness to believe is rooted in antisemitism and antipathy toward Israel.

A series of memes and posts on social media, spread by people with tens of thousands of followers, has called into question whether the toll on civilians was as deadly as described by Israeli authorities.

Fadi Quran, campaigns director at Avaaz, a West Bank-based human-rights group, said there is a difference between antisemitism and questioning the Israeli government’s version of events.

Human-rights advocates say Hamas’s atrocities on Oct. 7 don’t justify Israel’s punishing airstrikes over the past two weeks and its near-total siege of Gaza.

In the footage, many Hamas fighters wore action cameras on their heads as they piled into pickup trucks, jumped on motorcycles and streamed on foot across the border into Israel where they went door-to-door hunting Israeli civilians.

The videos also capture images of Hamas fighters driving injured Israeli victims, one of them with an arm blown off, back into the Gaza Strip.

Hamas Frees Two Hostages

Continued from Page One

“The war is not yet over, neither is my personal war, until everyone returns,” she said.

The two women were taken to a medical center after their release, the Israeli prime minister’s office said.

Hamas, which the U.S. has designated as a terrorist organization, killed more than 1,400 people in its Oct. 7 attack on southern Israel. Israel’s military said Monday that 222 people abducted that day by Palestinian militants are still being held hostage in Gaza. Israel’s campaign of airstrikes on the Gaza Strip in response to the attack has killed more than 5,000 Palestinians, according to the Hamas-run health ministry in Gaza, a number that couldn’t be independently verified.

Public pressure is mounting on the Israeli government to strike a deal with Hamas to free the hostages. U.S. and European governments are seeking to persuade Israel to hold off on its ground invasion of the Gaza Strip to allow more time to win the release of hostages, U.S. and foreign officials said.

At the same time, several countries have been pressing Hamas—which has threatened to execute abductees in response to Israeli airstrikes on the enclave—to release more hostages.

The Israeli prime minister’s office declined to comment on the holdup in the negotiations.

President Biden, in a call with Israeli Prime Minister Benjamin Netanyahu, said he welcomed the two women’s release Monday and said he remains committed to continuing efforts to secure the release of the other hostages being held by Hamas, according to a White House readout of the phone call. He also renewed calls for safe passage of U.S. citizens and other civilians in Gaza.

Israel on Monday intensified its aerial bombing campaign on the Gaza Strip and again called on civilians to leave northern Gaza ahead of a planned Israeli ground offensive.

U.S. officials said Monday they are recommending that Israel not rush into launching a ground offensive before Washington has the chance to get military resources in place and ready in the event of an expansion of the conflict. This will also allow Qatar to continue working to secure the release of additional hostages, the officials said.

After achieving a breakthrough on Friday with the re-



Yocheved Lifshitz and Nurit Cooper shown in a video image obtained from Hamas’s military wing. They were taken hostage in the Oct. 7 attack on Israel and released Monday by Hamas.

lease of the two U.S. citizens, a mother and daughter from Illinois, the talks ran into obstacles, with Hamas linking the release of more hostages to the humanitarian aid that has started to flow into Gaza.

Following the Oct. 7 attack, Israel imposed a total siege on the Palestinian enclave, cutting off supplies of fuel, food, electricity, water and medicine. Aid began entering Gaza on Friday, the day the two U.S. citizens had been released. On Monday, a third aid convoy carrying medical supplies, some food and bottled water entered the enclave.

Hamas told negotiators that it would agree to release as many as 50 hostages, likely including foreign nationals. At least 10 U.S. citizens are among those still held in Gaza. However, fuel has emerged as one of the main stumbling blocks in talks with Hamas. Israeli officials have previously

said fuel won’t be allowed to enter the Gaza Strip.

Negotiations over aid included the question of who should inspect the convoys into Gaza. Israel has insisted on inspecting cargoes to ensure no weapons or other non-aid items make it into Gaza on the trucks.

The first aid convoys entered Gaza using a verification process that didn’t include physical inspection. Israel has demanded its officials must inspect any further deliveries.

Qatar, a Gulf nation where some Hamas leaders are based, has been working to broker a deal that would release some of the civilian hostages from Gaza in return for humanitarian aid or a ceasefire. Hamas has said it was working with mediators in Egypt, Qatar and other “friendly countries” to release more hostages.

A U.S. official had said that

Qatar’s government had been “very helpful” on the matter, but noted the difficulties of reaching an agreement given Israel’s continuing bombardment of Gaza and the spiraling humanitarian crisis there.

The surprise release of two U.S. hostages on Friday night has amplified the pressure on the Israeli government to allow negotiations with Hamas to play out before any potential land assault on Gaza.

“I understand everyone is so angry and the need for revenge is so strong,” said Nir Shani, the father of Amir Shani, a 16-year-old who was taken by militants from a kibbutz near Gaza on Oct. 7. “The inconvenient thing to do is hold their breath and set a deal and end it, and later on do whatever they want to do.”

In a sign of the building pressure on the Israeli government, a group of hostages’ families met with President Isaac Herzog of Israel on Sunday evening to press their demands. Dozens of their supporters gathered outside the president’s residence in west Jerusalem, holding signs saying “BRING THEM HOME” and softly singing in Hebrew a song with the lyrics “hear my voice.”

“The president spoke about messages of how much the government cares, of how this is the single highest priority for the government. It’s a nice message. It’s been 16 days and we haven’t seen it yet, but it sounds good,” Jonathan Polin, the father of an Israeli-American hostage, Hersh Goldberg-Polin, who was wounded and taken captive, said after emerging from the meeting.

—Dov Lieber and Vivian Salama contributed to this article.

War Revives Interest In U.S. Production To Boost Iron Dome

By DOUG CAMERON

Israel’s war with Hamas has revived dormant U.S. interest in producing munitions for Israel’s Iron Dome missile-defense system, U.S. Army and industry officials said, a development that would help a U.S. regional ally resupply for future conflicts.

Any U.S. manufacturer of Tamir interceptors would take months to get moving. But with Hamas and Hezbollah firing hundreds of rockets at Israeli military sites and cities every day, Israel’s stockpile of interceptor missiles is dwindling.

The new interest in production of Tamir interceptor missiles for the Iron Dome system comes two years after the Israeli hardware in favor of a U.S.-made system it deemed better suited for conflict in the Pacific.

Israel’s Iron Dome missile-defense system is one of the most battle-tested in the world, destroying thousands of shells and rockets since its 2011 deployment and preventing mass civilian casualties.

“Iron Dome has proven itself over the years,” said Tom Karako, a missile defense researcher at the Center for Strategic and International Studies. “It’s no slight that it can’t contend with an overwhelming number of threats.”

To help out, the U.S. Army is sending back to Israel two Iron Dome units it acquired three years ago, alongside more than 200 Tamir missiles the U.S. had stored in its arsenal. The two units had been deployed after being tested in Guam.

The mobile Iron Dome is Israel’s last layer of air defense and can intercept targets up to 40 miles away. Each of the 10 batteries covers an area of about 60 square miles, and includes a radar and control system to identify incoming threats and fire only on those expected to reach populated or

One video from a kibbutz where 100 people were killed shows two Hamas fighters walking past an empty children’s playground as they look for targets. The pair take a break outside a home. They seemed to have no fear of being attacked, and the video gives a glimpse of the slow response from Israeli security forces.

The videos show Hamas fighters opening fire on elderly women hiding in their homes and young girls hiding in bomb shelters. Photos showed dead babies, charred bodies of infants and Israelis burned alive in their cars.

At the desert music festival, one man plays dead under a parked car, only to be shot by a gunman when he looks up to see if he is safe.

In one voice recording of a Hamas militant who used an Israeli victim’s cellphone to call his parents in Gaza, the fighter brags to his father that he is in Israel.

“I killed 10 with my bare hands,” he says. “Their blood is on my hands, let me talk to Mom.”

“May God protect you,” his mother says, sobbing.

“Mom, your son is a hero. Kill, Kill, Kill,” the fighter says, before his father takes back the phone.

“Please be proud of me, dad,” he says.

“Return to Gaza, return,” his father replies. “Enough.”

vulnerable areas, limiting how many missiles are required.

The Tamirs use a home-produced rocket motor that hasn’t suffered the level of supply-chain disruption that limited production of Javelins and the advanced guided missiles the U.S. has sent to Ukraine.

“They have a very capable military and they have their own stockpiles,” Army acquisition chief Doug Bush said earlier this month of Israel.

Meanwhile, militaries around the world, including the Pentagon and Israel, are moving to secure additional production of munitions. The vast consumption of artillery shells and guided missiles in Ukraine and of Tamir interceptors in Israel recently has honed defense officials’ focus on building “affordable mass”—a reliable arsenal of heavily used munitions.

In 2020, Rafael Advanced Defense Systems and RTX Corp. announced plans to build a factory in the U.S. to assemble Tamirs.

But the following year, the Army passed over Iron Dome in favor of the Enduring Shield system made by U.S.-based Leonardo, following a shoot-off in the New Mexico desert. Rafael and RTX’s new Tamir factory didn’t materialize.

The Pentagon’s push for more-sophisticated weapons and equipment to deter the perceived threat from China led the Army to favor the new U.S.-developed system seen as better able to tackle faster-moving cruise missiles over the bigger distances of the Pacific.

The Army called Iron Dome an interim solution and didn’t buy more than two, opting for the different capabilities of Enduring Shield.

“These are some of the growing pains of neglecting air defense for way too long,” Karako said.

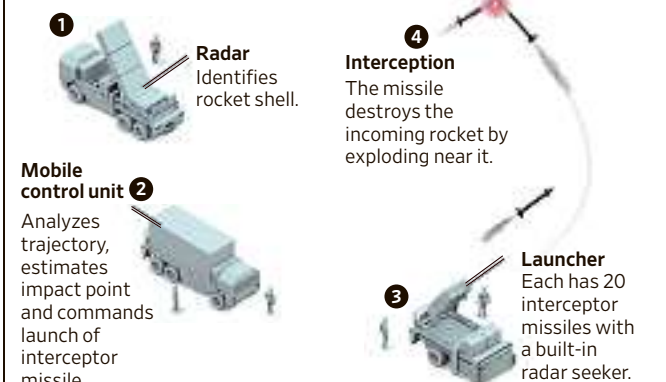
Rafael and RTX declined to comment on Tamir production rates or on any new U.S. facility.

Video Analysis Shows Gaza Hospital Hit By Failed Rocket Meant for Israel

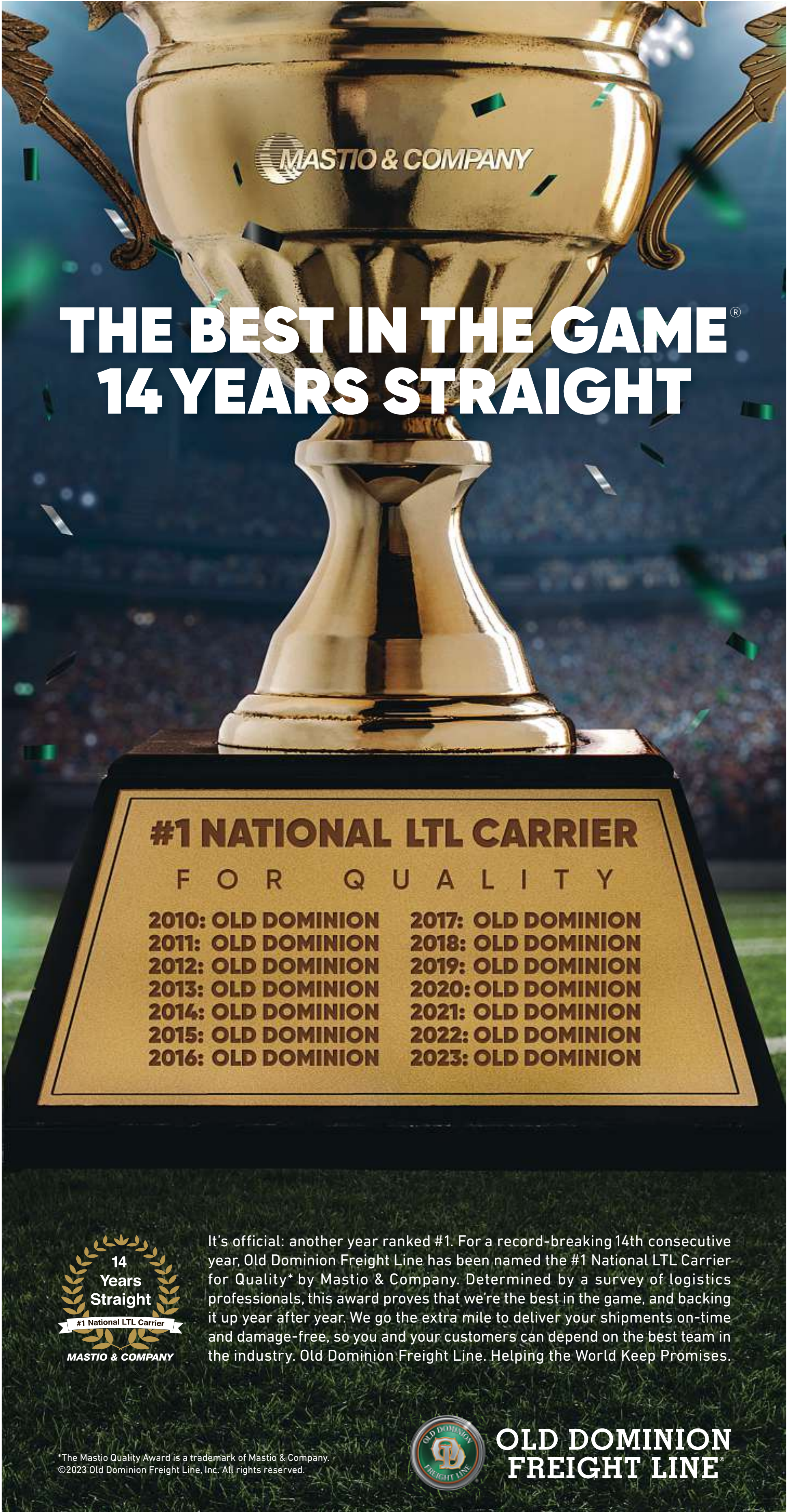


A video analysis by The Wall Street Journal using security cameras and live feeds inside Israel and Gaza shows how a failed rocket caused the deadly explosion at Al-Ahli Arab Hospital. Scan this code for the video.

How Israel’s Iron Dome works



Source: Rafael Advanced Defense Systems



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**OLD DOMINION
FREIGHT LINE®**

FROM PAGE ONE

Many Stay Put in North Gaza

Continued from Page One
people, more than 1.7 million are descended from refugees who were expelled or fled during the 1948 Arab-Israeli war from land that became the state of Israel. More than 720,000 Palestinians were displaced in that conflict, events that Palestinians refer to as the Nakba, or catastrophe in Arabic.

In the current conflict, which was ignited by Hamas militants infiltrating Israel, killing some 1,400 people and taking hostages, the Israeli military has told more than a million Palestinians to move to southern Gaza. The holdouts worry that those who fled south will be forced out of Gaza altogether and into Egypt or some other country, though Cairo and other Arab capitals say they oppose another Palestinian displacement.

Iyad Shobaki, 45, said his family of 10 is staying put in Gaza City. "The emigration of 1948 started like this," he said. "People said, 'OK, we'll leave our houses and come back in one or two weeks,' but they never did."

"How can I help my country?" Shobaki said. "I will stay in my house. That's what I can do."

Israeli leaders have said they want Gaza residents to evacuate to the south for their own safety, although its military has been bombing the south, too. Israel has said it would create "safe zones" for civilians in the south, and that it doesn't want to occupy Gaza after the war, the goal of which, it said, is to end the rule of Hamas.

Gaza's south began receiving humanitarian aid on Saturday, and on Sunday Israeli military spokesman Daniel Hagari urged the north's holdouts to move south.

But many Palestinians said they don't trust the word of the Israeli military and they are staying put. Some are holed up at home. Tens of thousands are sheltering at hospitals and churches, although such locations have been hit, too.

Shobaki, an engineer, said he stays awake every night until 5 a.m. while the rest of his family sleeps, in case something happens. During the day, he monitors Al Jazeera on the solar-powered television in his living room, watching for airstrikes near him.

According to Hamas-led health authorities, Israel's airstrikes have killed more than 4,600 people in Gaza since the start of the war, although U.S. officials and some experts have disputed that total. At least 42% of housing units across the strip have been destroyed or damaged, according to a U.N. report citing data from Gaza's housing ministry, also run by Hamas.

Hussein Hamad, a human-rights researcher, said he and



A resident of Gaza City, above, surveys destroyed buildings in the al-Zahra neighborhood. Many won't move from their homes despite the Israeli bombing.

his family of 20 are staying at their home in the Tel Zatar district of Jabalia. He said his parents and grandparents fled from Barbara village between the northern border of Gaza and the Israeli city of Ashkelon in 1948, losing their homes and 10 acres of farmland.

"We will not repeat this displacement," he said. "We will stay until the crisis ends."

He said living conditions in Jabalia now are stark: no electricity or water, scarce internet connection and a crumbling health system. His family members wait in long lines for bread, fill jerrycans with water from nearby wells and parcel out their remaining food.

"In the face of all this, I have decided to stay and stand firm," he said. "Either life is decent or we have no need for that life."

History looms large

Rashid Khalidi, a Palestinian-American historian of the Middle East at Columbia University, said the displacement of 1948 looms large for Palestinians in Gaza. "A second displacement is something that understandably they're going to resist, whether out of Gaza certainly but even from one part of Gaza to another," he said.

Poet and essayist Mosab Abu Toha, who said his grandparents were expelled from Jaffa in 1948, is staying in the Jabalia refugee camp where his mother was born.

On Thursday night, an uncle's home in the nearby Al-Shati camp, where Abu Toha was born, was bombed. Besides his grandfather's home, where he is staying, four other houses also were bombed. "There are still corpses under the rubble," he said. "I can smell flesh."

"To be made refugees again, to lose what we already built on this troubled land, is

utterly devastating and inhumane," said Abu Toha, who founded Gaza's only English-language library and was a Harvard Scholar-at-Risk Fellow in 2019 and 2020.

As the death toll rises, Western leaders have called on Egypt to let people cross safely from Gaza into its territory. Egyptian President Abdel Fattah Al Sisi has resisted, worried that Israel won't let Palestinians return. Egyptian authorities also are concerned that refugees in the Sinai Peninsula will be vulnerable to extremism after Egypt worked hard to tamp down militancy there.

"Egypt does not want to get involved in any of this," says Mohannad Sabry, a scholar at King's College London's Defense Studies Department and author of a book on Sinai.

Most young people in Gaza have trouble finding work due to a 16-year Israeli and Egyptian blockade on the strip that has choked the local economy. Many wind up stuck in their parents' homes, unable to marry, buy apartments or have a comfortable life.

Negotiations between Israel and Palestinian leadership to

create an independent Palestinian state in the West Bank and Gaza Strip have been moribund for years. The West Bank has been occupied by Israel since 1967, while Hamas took control of Gaza in 2007, two years after Israeli forces unilaterally withdrew from the territory.

Many of the Palestinian refugees who were displaced in 1948 and fled to Arab countries such as Jordan, Lebanon and Syria, said Israeli historian Benny Morris, "weren't properly absorbed. They were regarded with a degree of contempt as outsiders and potential subversives." To this day, many of them and their descendants live in suburban slums and crowded buildings.

Roughly 800,000 Jews in Arab countries in 1948 were displaced in the decade and a half that followed—representing most of the Jewish population—with the majority settling in Israel, Morris said. Unlike the Palestinian refugees, he said, they and their descendants never have wanted to go back to their native countries.

There are about six million Palestinian refugees who were

either displaced by previous conflicts with Israel or are their descendants, according to a United Nations agency dedicated to them. They often lack full rights in the countries they are in.

Abdallah Hasaneen, a 23-year-old civic-education trainer and writer who is a descendant of refugees, said that if enough Gazans are forced to migrate to Sinai, it would be the end of the Palestinian issue.

"I would rather die than be a refugee in Sinai or anywhere else," he said. "This is our land."

Safety concerns

As living conditions deteriorated at shelters for displaced Gaza residents in southern Gaza, some families have decided to return home. A 23-year-old medical volunteer, who asked to be referred to by her first name of Marah, said she and her family struggled for four days in Khan Younis, a city in the south. When they arrived, an airstrike hit a shop nearby. When space ran out at a friend's home, they slept in an olive

grove. "It wasn't safe," she said. "We ran out of water. We ran out of food. No medicine. It's like dying slowly."

They returned to Gaza City.

After another airstrike hit a building in front of their home on Friday, she and her family took shelter at a nearby church, then fled south a second time without knowing where they would end up. On Sunday, she said, she found shelter at a friend's home in the central town of az-Zawayda, crowding in there with 60 other people.

In 1948, she said, her grandfather was displaced from Bir as-Sab'i, a city in the Negev Desert east of Gaza that Israelis now call Beersheba.

She estimated that each building in her neighborhood in Gaza City still has at least one or two families left.

On Saturday, the Israeli military again airdropped leaflets in northern Gaza, this time saying that people who don't leave may be at risk of being associated with a terrorist organization. An Israeli military spokesman later said Israel won't treat those who haven't evacuated as a member of a terrorist group, and that it doesn't target civilians.

Basil Abu Sada, the software engineer in Jabalia, estimated that about 10% of the people in his neighborhood of Bir Al Na'jathere have stayed.

His family, he said, walks more than 2 miles to the nearest supermarket because driving might attract an airstrike. They live off well water but have no clue how long it will last. When his uncle's house was destroyed, the family was able to pull from the debris only four of the 10 who died.

"We all wish the war to stop," he said. "For the future of Gaza, we wish it to be good and safe."

— Anas Babas contributed to this article.

Chevron's \$53 Billion Deal for Hess

Continued from Page One
about 1% to \$161.30 on Monday, while Chevron shares fell 3.7% to \$160.68. Including debt, the transaction has a total enterprise value of \$60 billion.

The deal comes as oil-and-gas companies are flush with cash after energy prices rocketed in the wake of Russia's invasion of Ukraine, with executives signaling they were ready to deploy their war chests at the deals table.

Hess has been led for decades by Chief Executive John Hess, who—along with a few other shale executives—has made the public case for bolstering domestic energy supplies. Hess is expected to join Chevron's board, Chevron said.

Hess, who owns about 9% of the eponymous company, led it to scoop up a large position early on in the American shale revolution, primarily in the Bakken Shale of North Dakota.

The biggest prize for Chevron is Hess's nearly one-third share of the estimated 11 billion barrels of oil and gas

found off the shores of Guyana. Exxon and its partners, Hess and China's Cnooc, have revved up Guyana's oil production from nothing in 2019 to 400,000 barrels a day.

The partners expect to be pumping 1.2 million barrels a day by 2027, making it one of the world's fastest-ever oil developments. By then, the former British colony will be the source of \$180 billion in mar-

ket value for the consortium, some analysts have said.

Exxon Mobil earlier this month struck a nearly \$60 billion agreement to buy Pioneer Natural Resources in the largest oil-and-gas deal in two decades. Both Exxon and Chevron have also agreed on smaller transactions earlier this year.

On Monday, Wirth said the deal for Hess would position

his company to strengthen its long-term performance and further enhance its portfolio. The combination is also expected to achieve cost synergies of around \$1 billion before taxes within a year of closing, the company said. Wirth said the combined company should have an inventory of lucrative drilling locations into the next decade.

Wirth has become a vocal

defender of the U.S. oil industry as fossil-fuel producers have come under scrutiny of the Biden administration, environmental groups and European governments for their contribution to climate change.

"I don't think this would in any way be read as not being supportive of a lower carbon future, but it also recognizes the reality that oil and gas are important today and will be for many, many years to come," Wirth said in the interview.

Mark van Baal, founder of Follow This, a climate-focused investment group, said Chevron's deal runs counter to the Paris climate agreement and that investors must exert more pressure on oil companies to reduce production.

Chevron's board of directors has said it would waive the company's fixed retirement age to allow Wirth to remain CEO for a longer period as it weighs its C-suite strategy. Wirth became CEO in 2018, when the company was reeling from years of cost overruns made more acute by an oil-market crash in 2015 and anemic energy prices. He was seen as an executive who could corral runaway costs.

In 2019, Wirth refused to enter into a bidding war when Occidental Petroleum swooped in to buy Anadarko Petroleum for billions more than Chevron had offered. Chevron received

a \$1 billion breakup fee and bought Noble Energy for a lower price the next year, a deal that gave the company access to Middle East natural-gas markets and a bigger U.S. footprint.

Wirth has touted his strategy since walking away from Anadarko to focus on acquisitions that offered low premiums to its targets, including its agreement in May to buy PDC Energy for more than \$6 billion. Chevron's deal to buy Hess is its third since the onset of the Covid-19 pandemic in 2020 with a premium of around 10%, Chevron said.

Wirth said he expects Chevron will make a double-digit return on capital employed, a measure closely watched by investors, at midrange oil prices and would be prepared for an oil downturn, should one occur. Echoing other oil executives and analysts, Wirth said it is time that companies scale up via mergers and acquisitions.

"Ours is an industry, particularly as you get into the shale patch, that was due for some consolidation," Wirth said on a call with investors on Monday.

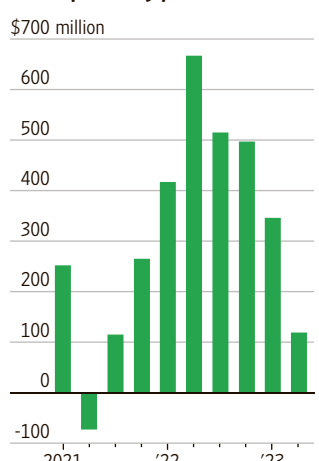
Chevron said it expected the Hess deal, which needs a green light from Hess shareholders as well as regulatory approvals, to close in the first half of 2024.



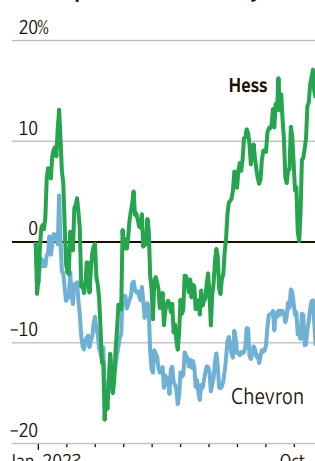
Among the Palestinians who say they aren't leaving northern Gaza are Abdallah Hasaneen, left, and Basil Abu Sada, who lives with his family in the northern town of Jabalia.



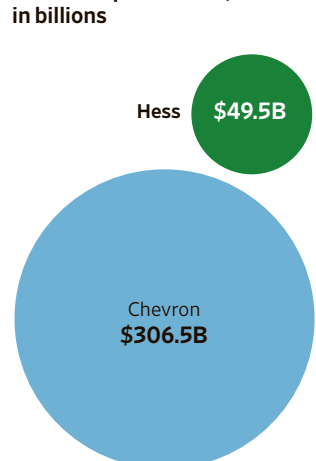
Hess quarterly profit



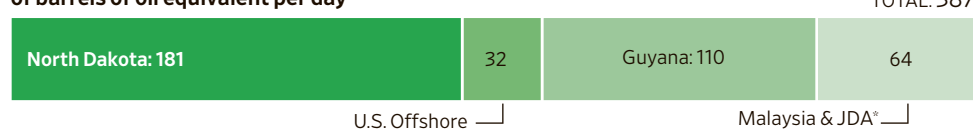
Share performance this year



Market capitalization, in billions



Hess 2Q 2023 global oil and gas net production, in thousands of barrels of oil equivalent per day



*Joint development area

Sources: S&P Capital IQ (profit); FactSet (share price, market cap); the company (production)



Somebody's Watching You

And that's OK with teens who want their parents to track their phones and monitor their every move



**FAMILY
& TECH**
JULIE
JARGON

Teenagers have long balked at telling parents where they are. Now, they're asking their parents to track them.

Every generation experiences its set of traumas, but social media and real-time news—with vivid images about the pandemic, war and other disasters—have heightened these anxieties among young people. And lots of them are closer to their parents than previous generations have been.

Members of Gen Z, ages 11 to 26, say they use family location-sharing apps to bolster a sense of security. Downloads of **Life360** doubled in the U.S. since 2021. The app now has more than 33 million monthly active users in the U.S. and another 20 million internationally. Even more teens share their location using Apple's Find My, Google's Family Link, Snapchat's Snap Map and GPS-equipped smartwatches.

Gen Z respondents to a recent survey from Life360 said they share their location when they drive, when they go on dates and when they attend concerts and other large gatherings. Many keep location sharing on at all times.

Yet tracking may be creating a false safety net for both parents and teens. Knowing where kids are doesn't necessarily keep them safe when disaster strikes.

'Very anxious kid'
Emery Littig's biggest fear is being abducted.

A 10-year-old girl in her hometown of Davenport, Iowa, was kidnapped and murdered by a relative in July 2020. It took eight months to find her body. News coverage of the case was constant and it left Emery shaken.

"If something happened to me, I think it would be useful for my parents to know my last location," she says.

Emery, now a 16-year-old high-school junior, began using Life360 even before that kidnapping, when she was in sixth grade. "I was a very anxious kid," she says.

She says a yearbook survey from last school year showed that half of the more than 1,500 students at her school use the app. Her friend group of 12 all share their location with one another in it.

Some teens don't have a good relationship with their parents or just don't want them to constantly know where they are.

Emery likes knowing that if



▲ Larken Hendricks, left, says having her mom, Cali, know her location is comforting.

she's in a car accident, her parents will receive an alert. She was riding with friends last year in Des Moines, more than two hours from home, when her friend's sister rear-ended another car. Emery's phone detected that they had come to a hard stop and the app notified her parents. The girls were fine.



▲ Emery Littig, left, says sharing her location with her mom, Shelby, eases her anxiety.

Emery also relies on Life360 when she goes to parties. During freshman year she was at a party where teens were drinking and a boy was hitting on her. She texted her parents to pick her up. She didn't have to ask anyone for the address because her parents could see where she was on the app.

"They were there in less than 20 minutes," she recalls.

'Helicoptered and bubble-wrapped'

Youth mental health has reached a crisis level, according to the U.S. Surgeon General.

The U.S. Preventive Services Task Force now recommends regular anxiety screenings for children 8 and older.

"Kids have so much access on so many different platforms to every ounce of news, whether it's happening locally or across the world," says Emery's mom, Shelby Littig. "To have news constantly in your face, on your phone and tablet and TV, would make anyone anxious."

Modern parenting—with its emphasis on coddling and its lack of unstructured playtime—can also contribute to kids' anxiety, says Michele Borba, an educational psychologist who has written several books about kids and parenting and is a spokeswoman for Life360.

"These kids have been helicoptered, snowplowed and bubble-wrapped," she says.

And just because a parent knows where their children are doesn't mean they can protect them from harm.

At best, parents have an easier way to locate kids or even get to them more quickly after something happens.

It also doesn't give kids confidence to take more risks, for better or worse.

Real risk-takers aren't seeking this level of parental oversight, and can turn off their location or temporarily leave their phones behind if they want to evade supervision.

Tracking does have a benefit for anxious kids, though.

"It offers the psychological comfort of feeling connected," says Pamela Rutledge, director of the Media Psychology Research Center, an independent research organization.

"When you feel safer, you can relax and have a better time."

Family plan

Larken Hendricks, a 17-year-old high-school senior, began using Life360 when she started driving. The roads near her home outside of Charlottesville, Va., are winding, and she likes knowing that her parents could quickly find her if she got into an accident or had a flat tire.

She also likes sharing her location when she's

hanging out in town, which is home to the University of Virginia. "Being a young woman in a college town brings its own set of concerns," she says.

Two of Larken's younger siblings, ages 12 and 15, are also on Life360, and her 9-year-old brother will be, too, when he gets a phone.

Their mom, Cali Hendricks, says she hasn't gotten any resistance from her kids about sharing their location.

In Larken's eight-person friend circle, six use Life360 with their parents, she says.

In the Hendricks family's case, the app isn't even necessary most of the time, says Larken.

"I've always told my mom where I am."

It Pays to Invest in Municipal Bonds

By OYIN ADEDOYIN

Want to get a tax-free return on your money? Put sewers and subway systems in your portfolio.

The municipal bonds that state and local governments sell to pay for unsexy-sounding infrastructure projects are offering their highest yields in more than a decade. New bond investors snapped up Treasuries after interest rates surged this year, but the special tax advantages of muni bonds make them also worth a look, financial advisers say.

Munis, like all bonds, are debt. Local governments sell them to get money for funding big projects. Investors who hold munis generally don't have to pay federal tax on the interest they earn, unlike their gains from savings accounts or certificates of deposit. Better still, when investors buy bonds issued in their home state, they typically don't have to pay state taxes on that interest either. Advisers say these tax advantages often give muni bonds an edge over other investments.

The yield on munis was 4.56% this month, according to the S&P Municipal Bond Index, the highest in more than a decade. That is up from 1.40% in October 2020.

Ten-year general-obligation bonds sold by the state of California in September offered a yield of 3.11%.

That compares with a yield of 1.05% on similar bonds sold two years prior. That means that over a decade, someone who invested \$10,000 would make about \$2,000 more on an investment yielding 3.11% than an investment yielding 1.05%.

Yields on munis are up along with those on Treasuries and other bonds due to the Federal Reserve's campaign to tame inflation by raising interest rates to a two-decade high. Just as it is now more expensive for consumers to borrow money for a home or car, governments have to pay higher rates on bond issues.

Investors seem to be taking notice. State and local governments sold \$29.3 billion in muni bonds last month, up from \$27.3 billion a year earlier.

Munis are especially useful for people who are approaching retirement and intend to live mainly off investment income, said Chris Bertinelli, the vice president of asset management at Lenox Advisors, a wealth and insurance advisory firm based in New York.

"While nobody knows what the peak in rates will be, clients approaching their distribution years are certainly revisiting their allocations to municipal bonds," Bertinelli said, referring to how people plan their spending in retirement.

Munis are considered relatively safe, yet like all investments, carry varying degrees of risk, depending



▲ State and local governments sell municipal bonds to pay for infrastructure projects such as roads.

on who is issuing them and for what purpose. Here's what advisers say investors should weigh before putting money in munis.

Types of municipal bonds

The two main types of munis are general-obligation bonds and revenue bonds. Both can range in duration from one year to more than a decade.

General-obligation bonds are issued by a state or local government to cover a project such as new roads or schools. The money is paid back to investors with interest, typically from money raised by taxes. This makes this type of munis relatively safe, advisers say.

"For people that are just getting into it, buying those general obliga-

tions that are backed by large cities or counties or states are clearly going to be the safest," said Daniel Genter, chief executive at Genter Capital Management, an investment advisory firm in California.

Revenue bonds are different. They are repaid with the money that a project generates. For example, when a local government issues a revenue bond to build an airport or stadium, its bond-buyers are paid back with money that travelers and sports fans spend there. Revenue bonds can also cover essential services such as sewers, power and water.

Bonds rated BBB minus and above are considered investment-grade. Municipal bonds are generally very safe, however, with fewer than 100 new defaults a year, according to research firm Municipal Market Analytics.

Munis might be especially attractive to high earners. If you fall

in the 30% tax bracket or higher, you can earn more from municipal bonds than Treasuries or corporate bonds after accounting for taxes, Genter said.

Add munis to your portfolio

It pays to hold a combination of municipal bonds, corporate bonds and Treasuries in your portfolio, financial advisers say.

For high-income investors who live in high-tax states, there is a case for holding a larger proportion of munis from their state. They could buy a mix of bonds issued by different cities, counties, school districts and by the state itself.

Investors can also purchase shares of a municipal-bond fund instead of buying the bonds directly. Those funds are easier to buy and sell through a brokerage, though they do come with management fees. Selling muni bonds before they mature must be done over the counter. Another advantage: Funds are a way to hold a wider range of bonds so that if one defaults or loses value, it is counterbalanced by the rest of the bonds in the fund.

Some investors are also looking to customize their municipal-bond holdings to better align them with their personal values or social causes that they want to support, said Ruth Ducret, senior research analyst at Breckinridge Capital Advisors, an investment-management firm based in Boston.

PERSONAL JOURNAL.

By ANNE TERGESEN
AND VERONICA DAGHER

They May Be Retired But They're Still On the Go

Living the nomadic life, seven people open up on what retirement on a boat or RV looks like

Many Americans drop anchor in retirement, settling down near the beach or their adult children.

Others leave their old latitudes behind and set sail on the highways or high seas.

Nomadic life appeals to those who have the time and cash to make RVs or boats into mobile retirement homes. After years juggling careers and raising families, these aging Kerouacs and Magellans yearn for the freedom to explore new places while still young and healthy enough.

"I knew this opportunity would be something I'd look back on and regret not seizing," said Harry Weidman, who lives on a 40-foot sailboat in the Caribbean with his partner, Ann Stockton.

Retiring on the road or ocean isn't always smooth sailing.

Couples said close quarters can test relationships. Boats and RVs need ample doses of love and attention, since flat tires and engine problems are part of the experience. Nurturing friendships can be hard, although satellite internet helps.

Of the 11.2 million RV-owning households, roughly half are those over age 55, according to the RV Industry Association.

Ann Stockton and Harry Weidman

Annual spending: \$72,000
Stockton and Weidman gambled \$220,000 on their retirement.

Stockton, 60, sold her Florida condo in 2020 and Weidman, 63, liquidated part of an IRA to buy Whisper, a 40-foot catamaran, in the U.S. Virgin Islands. Neither knew how to sail.

The boat was Weidman's idea. While deep-sea fishing one day, the former Somers Point, N.J., resident noticed he felt "most calm and serene when the shoreline drifted into the distance."

Before retiring, the former IT manager spent hours watching YouTube videos from world-traveling sailors. A friend gave the couple free sailing lessons.

Whisper has three small bedrooms, two bathrooms, a living area—and no air conditioning.

Constant maintenance is a fact of life. "Something is always breaking," said Weidman.

They have had some nerve-racking moments. For example, during their first overnight trip, Weidman worried that rough seas would damage the boat or that Stockton would abandon ship at the next port.

Friendships can be hard to maintain. "Often, when you say goodbye to other boaters, it's goodbye forever," said Stockton.

On a typical day, they wake up around 6 a.m. Weidman listens to the weather forecast on the radio. Stockton washes clothes in a bucket of rainwater. She teaches online fitness classes and meets virtually with personal-training clients.

While at port, the couple snorkel or go ashore to hike or shop.

Together, they earn about \$6,800 a month, including \$3,300 in monthly pension income and \$2,000 from Social Security for



▲ Ann Stockton and Harry Weidman on their catamaran.

Weidman. Stockton earns about \$1,500 from personal training, website maintenance and bookkeeping.

They spend about \$6,000 a month, paying around \$540 for boat insurance and roughly \$600 for groceries. Satellite internet and cellular-phone service cost \$300; diesel, \$100. Repairs average about \$1,500 a month.

Aside from the \$100,000 Weidman withdrew from an IRA in 2020 to help buy Whisper, they have yet to touch their \$730,000 in savings.

"After this experience, buying a place in the U.S. doesn't appeal to me," said Weidman. Stockton's vote? "Maybe an RV."

Jenell Jones

Annual spending: \$30,000
Jenell Jones sold her Texas home about five years ago. She enjoyed gardening at home, but felt tied down.

"I wanted to get off the couch and have an adventure," said the retired deputy sheriff, 63.

She had thought for years about buying an RV. Her office window at work faced an RV dealership and she watched people hit the road. A divorcee with an adult daughter, she initially had doubts about solo RV travel, but reminded herself that 25 years in law enforcement more than equipped her for the challenge.

Good health, savings and low expenses have helped make her wanderlust possible. Jones gets a roughly \$7,000 monthly pension and has about \$180,000 in savings. She spends close to \$2,500 a month, almost half of which goes toward fuel for her 36-foot Tiffin Open Road RV and the Nissan compact car she tows behind it.

So passionate is Jones about the RV life that she runs Wandering Individuals Network, an RV club with about 300 solo travelers. She spends about 10 hours a week organizing club trips and events and interacting with its members, a gig that pays about \$24,000 a year.

She has traveled with club members to Canada, Arizona and California, staying for weeks at a time and visiting local attractions. She visits her daughter in Florida for the holidays.

Jones advises RV rookies to be patient, problem-solving and flexible. She has managed flat tires at busy intersections, gotten sent down dirt roads by a GPS on the fritz and once dodged a moose.

◀ Jenell Jones says she enjoys hiking and driving her RV around the U.S.

Jones sees no end to her travels anytime soon. She has hiked with people in their mid-70s who are in better shape than she is, she said. "I'm just getting started."

Peggy and John Middleton

Annual spending: \$120,000
Peggy and John Middleton, 68 and 70, are carrying on a family tradition of exploring the U.S. with a travel trailer for months at a time. Peggy's parents owned several RVs in the 1970s and '80s, spending their summers on the roads of the U.S. and Canada. About 20 years ago, they offered Peggy their 1968 Airstream Globetrotter.

"We took one big trip through Nova Scotia and Prince Edward Island in 2004 and then it gathered dust in the backyard for many years," John said.

About six years ago, the Springfield, Mo., retired nurses began restoring the Airstream in their spare time, spending about \$20,000 to make it functional again, Peggy said.

John retired last year and the couple knew it was time for their dream trip—a three-month, 14,000-mile journey through Canada and Alaska. They hit the road this May.

Taking turns at the wheel, the Middletons relied on maps when GPS didn't work and tapped online RV groups for tips on where to visit. The trip, which cost about \$15,000 in fuel, campgrounds, groceries and sightseeing excursions, was largely unscheduled.

The Middletons attend virtual church services and Peggy logs on to her weekly Bible study group when cellphone service is available.

Years of retirement planning have allowed the Middletons to travel with their RV when they wish, they said. They have about \$2 million in retirement savings, half of which is managed by John and the rest by an investment firm. About 95% of their savings is in stocks.

Their home is paid off and they pay monthly credit-card bills in full. About half of their \$10,000 monthly spending goes to expenses related to their 40-acre property. They receive about \$4,500 a month in total from Social Security.

The couple said they are determined to have many more adventures, come what may. "To paraphrase Neil Young, we'd rather burn out than rust," said Peggy.

Norma and Mike Schulfer

Annual spending: \$125,000
Norma and Mike Schulfer were longtime weekend and vacation sailors. So when Mike retired in

▲ John and Peggy Middleton recently went on a three-month-long journey through Canada and Alaska in their RV.

2015, the couple began dividing their time between their home in Illinois and their sailboat in the Caribbean.

After Thanksgiving, the Schulfers fly to St. Thomas in the U.S. Virgin Islands, where they keep their 35-foot boat, Minor Indulgence ("Mi" is for Mike and "nor" for Norma).

They sail in and around the Virgin Islands and Puerto Rico from December to late May, often visiting remote spots, said Norma, 73, who retired from full-time teaching in 2007. "It's like a floating RV."

To Mike, 75, the boat is a labor of love. "The saying goes: Buy a boat and spend the rest of your life fixing it in exotic locales," said Mike, who worked for years

training and racing horses in the Chicago area. With an eye on retirement, they got Minor Indulgence in 2006 for \$139,000.

The couple's annual income is close to \$125,000, a combination of Norma's pension, Mike's Social Security check, and mandatory distributions from their IRAs. They have about \$500,000 in re-

Retiring on the road or ocean isn't always smooth sailing.



▲ Norma and Mike Schulfer divide their time between their Illinois home and their boat in the Caribbean.

tirement accounts, and their home in New Lenox, Ill., is worth about \$360,000.

They pay nearly \$8,000 in yearly property taxes, and home and car insurance total \$2,600. The annual cost to insure the boat is \$2,000. Maintenance, fuel and a spot at a marina run about \$13,000 a year.

Medicare covers them in the U.S. Virgin Islands and Puerto Rico.

The couple plan to keep exploring. "I'm not ready to swallow the anchor yet," said Mike.





WHY BLUE?

This is what our Parachrom hairspring looks like. It is an essential guardian of the watch's chronometric precision. Unveiled in 2005, entirely designed and manufactured in house, it nears the apex of what metal alloy hairsprings can offer. The scale of the image might throw you off, though. Its edge is thinner than a single strand of hair and its weight is merely a fraction of a pearl's. Moreover, once coiled, its diameter does not exceed a few millimeters. It is shielded from outside aggressions by a case so hermetic it was aptly named "Oyster." Needless to say, it is a rare occurrence for any eyes to be laid on the Parachrom. So why

would we be concerned by its color? Because this hue of blue is true to our tradition of watchmaking excellence. It is the exact color taken by our unique alloy of niobium, zirconium and oxygen when it has been anodized to stop the process of oxidation. This blue is essential to us, because it symbolizes the long-lasting performances which we hold ourselves to. This hairspring is insensitive to magnetic fields, unwavering in the face of temperature variations, and resistant to shocks as to corrosion. Therefore, each Rolex equipped with a Parachrom hairspring will tick at a most regular and perpetual beat.

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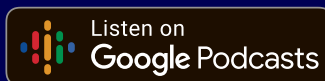


THE TRIAL OF CRYPTO'S GOLDEN BOY

The Failings of FTX

Sam Bankman-Fried built a crypto empire. Then the exchange he founded collapsed, revealing that billions of dollars of customer money was missing. In a new series from The Journal podcast, we explore Bankman-Fried's meteoric rise, his devastating fall and the trial that will determine his future. Listen now wherever you get your podcasts.

LISTEN NOW 



ARTS IN REVIEW

Until this month, I'd never paid \$178 for a movie ticket. But then again, I'd never seen a movie like Darren Aronofsky's "Postcard From Earth," one of two shows to open Las Vegas's spectacle of all spectacles, the Sphere.

Colossal, gargantuan and gigantic are inadequate words to describe the new \$2.3 billion arena, just off the Las Vegas Strip and attached by footbridge to the Venetian hotel. Reaching 366 feet high, with a 580,000-square-foot surface covered by 1.2 million burger-sized LED screens, it melds two of our most profound fixations: high-def video images and the pandemic-boosted hunger to get out and share collective experiences among crowds of fellow humans. Sphere performances envelop the audience. Existing words being insufficient, new ones beg to be created: Globetacular? Vastmazing? To gawp at the exterior of the Sphere at night, when it flashes one vision-gorging image after another over its entire surface—now a jack-o'-lantern, now the moon, now a break for commercial—is to behold what is already becoming the defining symbol of the Vegas landscape. There is simply nothing else comparable, at least on this planet.

To celebrate the one we're on, Mr. Aronofsky, the Oscar-nominated director of "Black Swan," has crafted a 50-minute journey into outer space and back. "Postcard From Earth" combines digital imagery with ultra-high-def documentary footage taken all over the world to bring viewers on the kind of journey that would be impossible without learning to fly. A hokey story by Mr. Aronofsky and Ari Handel spins a tale of Earthling astronauts who land on a faraway planet and are woken from deep slumber by a pair of AI voices who remind them of what they left behind. Humanity, having ruined the Earth, has been forced to flee the planet. But this trite setup is merely the frame upon which the director stretches his massive tableaux.

Within the 17,500-seat Sphere,



U2 performing at the Sphere, left; the venue's luminous exterior, below

card From Earth" as they spotlight their greatest album in "U2: UV Achtung Baby Live at Sphere." A mesmerizing highlight is the surrealist collage of Elvis imagery, created with AI by visual artist Marco Brambilla, that backs the song "Even Better Than the Real Thing."

As U2's Bono has noted in interviews, the band usually performs in venues built for sports. The Sphere was made for art. During a 2-hour show, the sound quality is so pristine that the performance, which I attended Oct. 11, was simply on a higher plane than any other rock show I've ever attended. It was like being in a hushed, compact jazz club—yet treated to a visual extravaganza at the same time. "Intimacy," offered Bono at the performance, "is the new

punk rock." When U2's visuals feature lightning storms, it's not to suggest we have killed the planet (as in Mr. Aronofsky's film) but to provide visuals for their slashing ode to Judas Iscariot, "Until the End of the World." Later the curved wall seems to disappear and we're confronted with an astonishing vista of Las Vegas Boulevard—which then disappears, each hotel shedding floors one by one, until nothing but desert is left around us. No adaptation of "U2: UV" for the screen could conceivably recapture the level of awe it creates in situ.

Between songs, Bono made several wry references to "this spherical object": "It's grand madness, of course, but sometimes that's what we need from art." In this overwhelmingly American city, the frontman made a point of expressing gratitude for the U.S. and decided the phrase "flyover country" for describing something that doesn't exist. "There's no part of this country," he said, "that we would want to fly over." With those words, the Sphere lit up again, this time with the smiles of the audience.

CULTURAL COMMENTARY | KYLE SMITH

Sin City Outdoes Itself

U2 and director Darren Aronofsky open the spectacular new Sphere

spectators are arranged in a semi-circle, in steeply-graded stadium seating. (Showtime is an hour after the time listed on the ticket to encourage you to meet the friendly interactive robots in the lobby and enjoy an \$18 can of beer.) Just above the floor stands a large movie screen, but this is a ruse: the film's images spill across the huge interior surface and ceiling, hundreds of feet overhead. I wandered through a breezy orange grove. I slipped inside the belly of an ascendant hot air balloon. Sharks peered down at my notebook. A jumbo jet roared into my face as my seat rumbled.

Frequently gasping, the audience zooms over forests and through canyons, glides through cathedrals and floats up the outside of apartment buildings. The closest compa-

rable experiences I've had are such Disney theme park attractions as "Soarin' Around the World" at Florida's EPCOT, where visitors get harnessed into hang glider-like objects and treated to panoramas of the globe's greatest sights. But that experience lasts just a few minutes.

Mr. Aronofsky's film is marred only by the apocalyptic tone of its second half. U2, however, grasps that Vegas is about whimsy and folly, not doom and gloom. In a 36-show residency that lasts until Feb. 18, the Irish rock band is staging an even more magical experience than "Post-



FROM TOP: RICH FRIEDBERG/GETTY IMAGES; ETHAN MILLER/GETTY IMAGES

ARTS CALENDAR

HAPPENINGS FOR THE WEEK OF OCTOBER 24

By WSJ ARTS IN REVIEW STAFF

Film

"The Killer" (Oct. 27)

Michael Fassbender stars as an assassin who, after a botched job, stalks his prey across the globe in the latest from David Fincher. Tilda Swinton, Sophie Charlotte, and Charles Parnell are among the cast in the thriller, which has a limited theatrical run before heading to Netflix on Nov. 10.

docuseries explores what really transpired in the titular English town in 1977: supposedly paranormal happenings that eventually inspired the film "The Conjuring 2."

Theater

"Here We Are" (The Shed, New York, through Jan. 21, 2024)

Stephen Sondheim's final musical, with a book by David Ives, has its world premiere, directed by Tony win-

she tries to come to terms with the morality of waging virtual warfare in this world premiere by Jeanine Tesori, based on George Brant's play and co-produced with the Metropolitan Opera.

Art

"Marie Laurencin: Sapphic Paris" (The Barnes Foundation, Philadelphia, through Jan. 21, 2024)

While she enjoyed some artistic success during her life, Marie Laurencin has been overlooked by art history, unlike many of her male peers in avant-garde 20th-century Paris, where her circle included famed Cubists like Braque and Léger. Her reputation has recently been enjoying a revival, and this exhibition explores her commitment to representational painting and the female form.

Videogames

"Metal Gear Solid: Master Collection, Vol. 1" (PC, Switch, PlayStation 4 & 5, Xbox Series X/S, Oct. 24)

This first in a planned series of compilations collects several of Hideo Kojima's action-stealth games—including "Metal Gear Solid," "Metal Gear Solid 2: Sons of Liberty" and "Metal Gear Solid 3: Snake Eater"—in a single offering and also includes special features like VR missions and digital books to accompany each title.

Last Call

"Swing State" (Minetta Lane Theatre, New York, closes Oct. 28)

Now in New York after a successful run at Chicago's Goodman Theatre, Rebecca Gilman's play follows a widow struggling to preserve her home amid a swirl of personal and small-town dramas. Our critic called it a "powerfully affecting drama about love and loyalty, and loss and betrayal, too."

For additional Arts Calendar listings visit wsj.com. Write to brian.kelly@wsj.com.



Michael Fassbender in David Fincher's 'The Killer'

"The Holdovers" (Oct. 27)

I'll be home for Christmas—unless I'm stuck at boarding school. Paul Giamatti plays minder to those students who can't go home for the holidays—bonding with one troubled student in particular—in Alexander Payne's 1970s-set dramedy.

TV

"Life on Our Planet" (Netflix, Oct. 25)

Morgan Freeman narrates this Steven Spielberg-produced, VFX-heavy docuseries that looks at the history of life on Earth.

"Everyone Else Burns" (The CW, Oct. 26)

This six-part British sitcom stars Simon Bird ("The Inbetweeners") as the father of a picturesque family that also happens to be part of an apocalyptic cult.

"The Enfield Poltergeist" (Apple TV+, Oct. 27)

Lots of horror films claim to be "based on actual events" but this four-part

ner Joe Mantello. Described by Sondheim as a work about "trying to find a place to have dinner," the show was inspired by two Buñuel films, "The Exterminating Angel" and "The Discreet Charm of the Bourgeoisie," and features Francois Battiste, Tracie Bennett, Bobby Cannavale, Micaela Diamond, Amber Gray, Jin Ha, Rachel Bay Jones, Denis O'Hare, Steven Pasquale, David Hyde Pierce and Jeremy Shamos.

Music

"Black Pumas, 'Chronicles of a Diamond'" (Oct. 27)

The Grammy-nominated, soul-inflected group returns with its sophomore record, which aims to be more omnivorous in its musical influences, incorporating pop, jazz-funk, psychedelia and more.

Opera

"Grounded" (Kennedy Center, Washington, Oct. 28-Nov. 13)

A fighter pilot struggles with the enemy within as

The WSJ Daily Crossword | Edited by Mike Shenk

1	2	3	4	5	6	7	8	9	10	11	12	13	
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- 11 City where the Maumee River meets Lake Erie
- 12 Bakery come-on
- 13 Heart, for one
- 21 Without delay
- 23 Frank Lloyd Wright house, and a hint to the circled letters
- 25 Nivea rival
- 27 ___ culpa
- 28 No longer here
- 29 Choose vegetables, for instance
- 30 Problem for Pinocchio
- 32 Informal denial
- 35 Forbidden act
- 36 Place for a peel
- 39 Standard
- 42 Genesis woman
- 47 Shout of pain
- 48 A bunch
- 49 ___ New Guinea
- 50 Shire of "Rocky"
- 54 Cracker brand
- 56 Flameout for a star?
- 57 Pleased expression
- 58 Egg part
- 60 Onetime Pan Am rival
- 61 Lawyer's charge

DRIP DRIP DROP | By Benjamin McAvoy-Bickford

Across	23 Disaster response grp.	48 Most minimalist	3 Auction condition, maybe
1 Start turning to slush	24 Lower Manhattan area	51 Cathy comment?	4 "Worst case scenario, it's still okay"
5 "Speak for yourself!"	26 Month of fasting	52 Unperturbed component	5 Endure hardship with minimal damage
11 Confucian path of virtuous conduct	28 Wish on a patient's card	55 Like the sound of a pedal steel guitar	6 Chewbacca is his co-pilot
14 Sorority's recruitment drive	31 Move, in real estate lingo	59 Suitable	7 Satyr's celebration
15 Canal clogger	32 Ark builder	60 "Fiddler on the Roof" song	8 Use colorful language
16 Hockey legend Bobby	33 Sun's beam	62 Barcelona bull	9 Welcomers in some big-box stores
17 Shawkat of "Arrested Development"	34 Condor claws	63 "That's obvious!"	10 K-pop group named for a type of planet
18 "Measure for Measure" antagonist	37 Price for poker players	64 Rice or Oates, e.g.	
19 Fireplace fuel	38 Making knots	65 Wicked	
20 "___ sit around and mope" ("Damn Yankees" lyric)	40 Chain with Cinn-A-Stack pancakes	66 For example	
	41 Sarcastic snicker	67 Makes one's jaw drop	
	43 Neither's partner	68 Order from best to worst	
	44 Singer Simone		
	45 Roof overhang	Down	
	46 End-of-the-world scenario with out-of-control nanobots	1 Cable car	
		2 Streaming service named for a Mandarin word for "gourd"	

Previous Puzzle's Solution

F	E	T	A	M	A	S	K	I	T	S	M	E
L	A	I	R	I	S	L	E	N	O	C	A	L
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► Solve this puzzle online and discuss it at WSJ.com/Puzzles.

SPORTS

JASON GAY

Lamar Jackson Sends the NFL a Loud Message

Baltimore's quarterback romps over the hyped-up Lions with his new weapons and familiar MVP-grade skills



Is the NFL playing bad football this year? Heading into the weekend, I kept hearing grumbling about how league

scoring remained down, offenses were blah, coaches were inept and referees were worse. It's still October, and there's not a single undefeated team left to prevent Larry Csonka and the 1972 Dolphins from popping their preferred sparkling wine.

Usually, I have blamed "NFL stinks" chatter on a dirty tricks campaign by the national pumpkin and apple picking industry, aka Big Hayride, which competes viciously for our autumn Sunday attention.

But I was willing to consider: maybe the NFL really was crummy this year. Scoring is indeed low. There are a lot of middling to bad teams, and whatever you would call happening in the NFC South. I'd also watched parts of at least three Arizona Cardinals contests, and my eyeballs continue to threaten me with litigation.

Then I watched Lamar, and everything got better.

Lamar is Lamar Jackson, the quarterback of the Baltimore Ravens, now in his sixth season out of age 26. In his second year out of Louisville, Jackson won the league MVP award by playing a regular season as well as any quarterback had ever played—a relentless threat to throw, run and do everything in between. In years since, he's wrestled with playoff letdowns, injuries and a touchy debate as to whether the Ravens should re-sign him to an extravagant long-term contract.

Did he deserve the moola?

Jackson is a proven winner (50-18 on his career) but could he truly be great if he's never taken the Ravens deep in the playoffs? It was one of those inane dramas endlessly debated on radio and TV yap fests that made you regret having ears.

In the end, the Ravens signed Jackson to a historic deal—five years and \$260 million. It was a wise move, because there's nobody quite like Lamar.

The latest witnesses to his talent are the Detroit Lions, who visited Baltimore carrying a league-best 5-1 record and an alarming amount of Super Bowl buzz for a club that hasn't ever sniffed a Super Bowl. Lion Mania is fun: Loyal fans who deserve more, a likable team



Baltimore quarterback Lamar Jackson threw three touchdown passes and ran for another score in the Ravens' 38-6 win over the Detroit Lions.

with underappreciated talent, and a square-jawed coach who looks like the guy in an action movie who'd sell Schwarzenegger a grenade.

On Sunday, however, Lion Mania got Lamar'd. The Detroit defense had no answer for the former Heisman winner, who looked very

much like the joystick-agile wonder capable of flattening the league. Jackson threw two touchdown passes in the first half, finishing with three. He ran for another. It was his best game of the season, after two quarters. The Ravens

defense was sublime. The halftime score was 28-0. Not over, but yeah: over. Jackson resists definition, but what he does is this: He upends the possibilities of every play. He plays large in the pocket; he's hard to chase and tackle; he's always a threat to run on a programmed or broken play. His arm strength—or, to borrow the current inane buzz term, "arm talent"—is as good as it gets. You can't load up to force Jackson to do one thing; he can do it all. When a passing play crumbles on a third-and-9, and he just runs easily for a first down, you can watch the frustration lift off the defenders' helmets like a vapor: *How do we stop this dude?*

What's evolved is the cast around him. The Ravens have invested in giving Jackson a collection of weapons unlike what he's had in prior seasons—first-round draft pick receiver Zay Flowers; veteran acquisitions Odell Beckham Jr. and Nelson Agholor to go with a proven target like Mark Andrews and a healthy Rashod Bateman. Backed by a rowdy offensive line, supplemented by a new offensive coordinator (Todd Monken, out of Georgia), Jackson doesn't need to do everything. He has decadent options, often several within the same play.

Statistically, Jackson isn't on the tear he was in his 2019 MVP year. He leads quarterbacks in rushing, per usual, but he has fewer touchdown passes than mortals like Russell Wilson and Sam Howell. It's his control and confidence that stands out—the faith in his own abilities, his line, and the game plan, and a belief that if the 5-2 Ravens get going, they are formidable. Not that he's content.

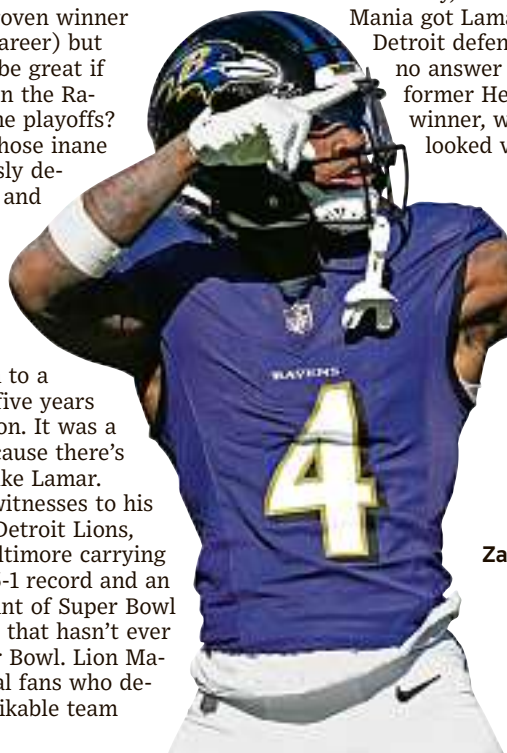
"We're winning," he said after the 38-6 romp over Detroit, before clarifying: "Regular season."

Jackson knows he's going to be ruthlessly judged by what he does in the playoffs, and Baltimore remains a maddening team. At times they can look like driven Super Bowl contenders; at other moments, they appear confused that an NFL game lasts four whole quarters. The same club that romped all over the ballyhooed Lions has endured mystifyingly flat losses to the Colts and Steelers.

Maybe Sunday becomes the catalyst of a deep run. I'm not saying the Ravens saved football on Sunday, I'm not saying they are banging on the door as championship contenders; I'm not saying commence the MVP buzz. I'm not even telling you to skip hayrides, which can be fun, and you might get to meet interesting livestock. I'm just saying that in a strange season, Lamar Jackson is a reason to watch. The football's never bad when he's rolling.

\$260 MILLION

The Ravens signed Lamar Jackson to a five-year contract in April



Ravens receiver Zay Flowers

Travis Kelce Is More Than a Boyfriend. He's Still a Dominant Tight End.

BY ANDREW BEATON

SOMETHING STUNNING HAPPENED in the fourth quarter of Sunday's Kansas City Chiefs game: a pass from Patrick Mahomes to Travis Kelce fell incomplete.

For any other tandem in football, this is a normal occurrence. But nothing about this season has been normal for Kelce. The incompleteness snapped a streak of 29 consecutive passes directed to him that Kelce had successfully hauled in.

Kelce has become an inescapable force in pop culture. But recent weeks have been a reminder of what catapulted him to superstardom in the first place. He's one of the best tight ends in NFL history—and he's still at the top of his game.

His streak of 29 consecutive catches, which spanned three games, was the most for any NFL receiver or tight end over the last 30 years, according to Opta. During Sunday's 31-17 win over the Los Angeles Chargers, Kelce posted 179 receiving yards, 143 of which came in a monstrous first half. It was Kelce's fifth career game with at least 150 yards, trailing only Hall of Famer Shannon Sharpe for the most such games among tight ends in NFL history.

What makes it so extraordinary that Kelce continues to perform at an elite level is that he's now 34 years old. That's the same age as Rob Gronkowski, who's now in the second year of his second retirement. Kelce, meanwhile, is still shredding opposing defenses.

"He might be getting better with age," coach Andy Reid said after the game.

Defenses these days have nothing better to do than trying to figure out how to stop Kelce, and yet they still struggle to come up with answers for the 6-foot-5, 250-

pound behemoth. Unlike when the Chiefs still had star wide receiver Tyreek Hill, Kelce is unquestionably the top target for Patrick Mahomes and the main focus for opposing coordinators. The extra attention hardly seems to be a problem, though. Mahomes has completed 81.4% of his pass attempts to Kelce this season, by far the highest catch rate of the tight end's career.

Now in his 11th NFL season, Kelce also enjoys a rare freedom on the field. In a game where receivers are expected to run routes with precision down to the very inch, Kelce is allowed to essentially light the team's playbook on fire. Reid, one of the game's all-

time offensive masterminds, trusts his tight end to freelance and essentially run the oldest play in football: just get open.

Combined with Mahomes's creativity, Kelce's knack for successfully doing just that leads to plays when it's simply astounding that there aren't defenders closer to him when he reels in the pass.

"He's just got a feel," Chiefs coach Andy Reid said last week of Kelce. "He's a quarterback friendly that way, he understands the schemes, understands defenses."

Even Mahomes, who's a weekly highlight reel with his sidearm or no-look passes, was in awe of his teammate after Sunday's game. He said Kelce's talent for reading op-

posing defenses makes it look like he's playing a videogame.

All of his best skills were on full display against the Chargers. His ability to improvise and just find the soft spot in opposing defense helped him get open for a number of big gains. His speed was obvious when he raced down the sideline with the ball for a 53-yard gain in the second quarter. And when he hauled in a one-yard touchdown pass later in the period, it was clear just how strong he is when he fought through a slew of defenders trying to bring him down.

Kelce has done all of this in the wake of suffering an ankle injury a couple of weeks ago. Despite

clearly not being at his best, Kelce didn't just return to that game against the Minnesota Vikings. He came back and scored a touchdown, part of his run of 29 consecutive grabs. The next week he caught all nine of his targets for 124 yards in a win against the Denver Broncos.

Kelce's regular presence in the lineup is something the Chiefs can't afford to lose. Their only loss this year came when Kelce was out with a knee injury.

None of his success this season should be surprising given how he finished the last one. During Kansas City's three postseason wins, he showed no signs of slowing down with four touchdown receptions while catching 87.1% of the passes Mahomes threw to him. That included a perfect 6-for-6 performance in the Chiefs Super Bowl win over the Eagles.

But ever since starring in America's most watched sporting event, the spotlight on Kelce has somehow gotten even brighter. He hosted an episode of "Saturday Night Live" and has become a constant presence in television commercials. He briefly cameoed in an SNL episode again this month.

And of keen interest to many non-NFL fans, there's also his apparent romance with pop megastar Taylor Swift, who cameras frequently showed in attendance once again this past weekend. (If Kelce needs his coach's stamp of approval for the relationship, he seemingly has it: "Kelce keeps getting better with time. Taylor can stay around all she wants," Reid said after the win.)

First and foremost, though, he's a football star. Sunday was proof. The NFL in recent years has called the fourth Sunday of October "National Tight Ends Day." And nobody celebrated the mock holiday quite like Travis Kelce.



Travis Kelce caught 12 passes for 179 yards and a touchdown in the Chiefs' 31-17 win over the Chargers.

OPINION

The Incoherence of Pope Francis



MAIN STREET
By William McGurn

Pope Francis called President Biden on Sunday to talk about Gaza. The papal phone call came amid Israel's public criticism of the Vatican's tendency to treat the Israel Defense Forces as morally equivalent to the Hamas terrorists who targeted, attacked and butchered unarmed Israeli civilians.

Israel's irritation was kicked off by a joint statement on Oct. 7, the day of the Hamas attack, from the Patriarchs and Heads of Churches in Jerusalem. This is an ecumenical Christian group that includes the Catholic Latin patriarch of Jerusalem. The leaders did "unequivocally condemn" acts that target civilians. But the statement didn't name Hamas, and it called for the "cessation of all violent and military activities that bring harm to both Palestinian and Israeli civilians."

The Israeli Embassy to the Holy See said the statement reflected an "immoral linguistic ambiguity." "From reading it," the embassy response said, "there is no way to understand what happened, who were the aggressors and who the victims." Pope Francis has since affirmed the right of Israelis to defend themselves and called for the release of Israeli hostages.

But a week later, the patriarchs and church leaders issued a second statement, and the pope followed with an address calling for humanitarian

law to be respected in Gaza. Israelis took these as a shots directed at them. For missing from the pope's remarks was any appreciation that Israeli forces will invade Gaza to ensure that Hamas can never pull off such a barbarous attack on their people again. Likewise missing is an acknowledgment that Hamas bears primary moral responsibility for any civilian deaths from Israel's military entry into Gaza because Hamas deliberately hides among the Palestinian population, using them as human shields.

Israeli Foreign Affairs Minister Eli Cohen made clear what Israel wants from the Vatican: "an unequivocal and clear condemnation of the murderous terrorist acts perpetrated by Hamas terrorists that caused grievous harm to children, women, and the elderly just because they are Jews and Israelis."

Vatican incoherence is also sowing confusion in Ukraine. As with Gaza, the pope's insistence on defining the problem as war itself—not Vladimir Putin's unjustified invasion of a neighbor—also suggests moral equivalence. So even though he has talked about a right of nations to defend themselves and referred to "martyred Ukraine," these get swallowed up by his "both sides" approach on war.

In August, Ukrainians were horrified when the pope, via video, told young Russian Catholics gathered in St. Petersburg that they are heirs to the "great, enlightened Russian empire" as embodied by Peter the Great and Catherine the Great. As Ukrainians well

know, and the pope should have known, Mr. Putin has invoked this legacy to justify his invasion of their homeland. The pope later had to clarify that he wasn't endorsing Russian imperialism.

But the damage was done. Sviatoslav Shevchuk, head of Ukraine's Greek Catholic church, said the pope's words were "painful and difficult for the Ukrainian people, who are currently bleeding in the struggle for their dignity and

The Vatican offers confusion instead of clarity in Gaza, Ukraine and China.

independence."

Finally there is China. Unlike in Israel and Ukraine, there is no war in China, but an invasion of Taiwan can't be ruled out. Yet the Vatican has been largely silent on Beijing's outrages, including the genocide of the Uyghurs.

Last week the Acton Institute held the Rome premiere for its documentary "The Hong Konger: Jimmy Lai's Extraordinary Struggle for Freedom." In December Mr. Lai, founder of a popular pro-democracy newspaper, goes on trial in Hong Kong for sedition. Though Mr. Lai is arguably the best-known Catholic imprisoned in China, the church seems embarrassed by its heroic son. His name goes unmentioned by the pope and his diplomats. No doubt it is because acknowledging unjustly imprisoned Chinese

Catholics risks underscoring the Vatican's disastrous 2018 secret deal with China, which was supposed to mark a rapprochement with Beijing and improve the situation of Chinese Catholics.

The Vatican likes to boast of having the world's oldest diplomatic service. But at a time when the world is desperate for moral clarity, it offers confusion. Every time the pope speaks of war, the Vatican's credibility takes another hit because of his failure to make basic distinctions. This is especially true when he speaks about war-torn regions of the world, where justice appears to carry no weight in his moral calculus.

"The current Vatican position on all this is a basic throwback to the days of the Cold War that held to the mistaken notion that the absence of direct conflict was peace," says the Rev. Robert Sirico, president emeritus of Acton. "So what we have is secrecy, lack of clarity and a sense of abandonment on the part of a growing number of people suffering at the hands of dictators and totalitarians."

The Vatican summary of the pope's conversation Sunday with the president reported that the two men spoke for 20 minutes about war and the steps toward peace. The White House readout said much the same. But it included this zinger: "The President condemned the barbarous attack by Hamas against Israeli civilians."

It's a sad day when Joe Biden offers more moral coherence than the pope.

Write to mcgurn@wsj.com.

BOOKSHELF | By Matthew Continetti

The Unhappy Statesman

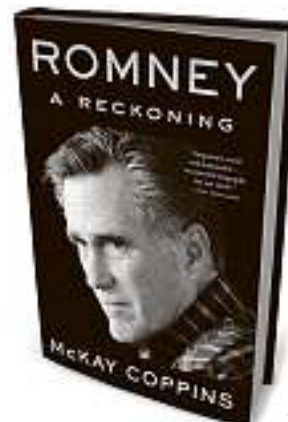
Romney: A Reckoning

By McKay Coppins
(Scribner, 400 pages, \$32.50)

Not long after Jan. 6, 2021, Sen. Mitt Romney gave McKay Coppins, a staff writer at the Atlantic, rare access to his daily life. In return, Mr. Coppins allowed Mr. Romney to read—but not to edit—a draft of the biography that emerged from their conversations.

The senator was not entirely pleased with the result. Nor should he be. The message of "Romney: A Reckoning" is not uplifting. As he prepares to retire from the Senate, the 76-year-old former Massachusetts governor and 2012 Republican nominee for president is disparaging of, frustrated by and estranged from the colleagues and voters to whom he's tried to appeal for 30 years.

What explains Mr. Romney's disillusionment? He is a successful businessman, an admirable public servant and an accomplished statesman. But his nonideological leanings, technocratic sensibility and patrician affect never gelled with the public.



His 1994 campaign for Senate set the tone. Having amassed a fortune and raised five sons with his wife, Ann, in Massachusetts, Mr. Romney felt called to high office. But which office? And would he run as a Republican or a Democrat? "Romney was not particularly partisan—a registered independent, he'd donated to candidates in both parties," Mr. Coppins writes, "but there was one Democrat he was tempted to take on: Ted Kennedy."

Mr. Romney's disdain for Edward M. Kennedy's personal conduct echoed decades later in his abhorrence of Donald Trump. Though Mr. Romney was determined to beat Kennedy, he had neither a firm message nor an agenda. The campaign trail wore him down. His pro-choice abortion position satisfied no one. And his career in private equity, long thought an asset, was in fact a liability. His willingness to modify his views depending on circumstances haunted him. Thus in 1994, when Republicans netted eight Senate seats and gained control of the House for the first time in 40 years, Mr. Romney lost to Kennedy by 17 points.

Rescuing the troubled 2002 Winter Olympics in Salt Lake City offered Mr. Romney a way back into politics. Yet he still couldn't decide where he belonged. "The only question," Mr. Coppins writes, "was whether he'd run as a Republican in Massachusetts or a Democrat in Utah." Mr. Romney stuck with the Bay State. He maneuvered the acting governor out of the GOP primary and won a 5-point victory over his Democratic opponent that fall.

Like his father, George Romney, who served as governor of Michigan in the 1960s, Mr. Romney hailed from the moderate-to-liberal wing of the GOP. "Though he was a Republican," Mr. Coppins writes, "he had no patience for Rush Limbaugh and never read the National Review." His bipartisan streak culminated in a plan for universal health coverage that included an individual mandate to buy insurance. That health bill and his position on abortion dogged Mr. Romney throughout his presidential campaigns in 2008 and 2012. Republican voters didn't fully accept his conversion to Ronald Reagan's philosophy of freedom. They also viewed his Mormonism with suspicion.

Running for president, Mr. Romney felt compelled to engage in activities he secretly loathed. He had to watch his words and defend his faith as he quested for a job he didn't really want. "I am not driven for the Presidency like those in history that are written about," he wrote in his journal.

In 2012, despite winning his party's nomination, he continued to feel constrained. For him, Mr. Coppins writes, "the life of a presidential nominee" was "suffocating." Among Mr. Romney's concessions to political exigency: accepting Mr. Trump's endorsement.

'I was accused of being inauthentic,' Mitt Romney says. 'That's just who I am . . . the authentic person who seems inauthentic.'

Mr. Romney had known him since 1995. "This guy is not fake—he says 100% of what he thinks," he wrote in his journal. By 2012, Mr. Trump's celebrity and advocacy of the "birther" conspiracy theory about Barack Obama had made him a force in the GOP. Mr. Romney needed his support.

Mr. Trump helped Mr. Romney win the Nevada caucuses, but at a price. The alliance with Mr. Trump, as well as secretly recorded comments to donors in which Mr. Romney wrote off the 47% of the electorate that doesn't pay income tax, contributed to the notion that he was an aloof plutocrat.

The former governor lost to Mr. Obama by 4 points. On Twitter, Mr. Trump demanded that he challenge the result. He declined. Mr. Trump said the nominee hadn't fought hard enough. Republican voters agreed. The GOP was changing from a party of insiders like Mr. Romney into a party of outsiders loyal to Mr. Trump.

For decades, Mr. Romney had tried to convince Republicans that he was something he was not. "I was accused of being inauthentic," he tells Mr. Coppins. "But in reality, that's just who I am. I'm the authentic person who seems inauthentic."

When Mr. Trump won the presidency in 2016, Mr. Romney looked for ways to check the disrupter-in-chief. An opportunity arrived when Orrin Hatch's retirement opened a Senate seat in Utah. In 2018 Mr. Romney won it and became the new president's most famous GOP antagonist.

Mr. Romney has introduced novel legislation and stood on principle against brutal headwinds. Yet his distaste for the GOP runs deep. Mr. Romney may have been right that Mr. Trump is unfit to serve, but was he right to tell Mr. Coppins that "a very large portion of my party really doesn't believe in the Constitution"? One problem with "Romney: A Reckoning" is that it's hard to tell the difference between frankness and hyperbole, between analysis and bitterness.

Mr. Coppins saw this project as a way for Mr. Romney to come to grips with his place in American history. That is not quite how things worked out. The book is instead a reminder that meritocratic success in business is not easily translatable into democratic politics. What lessons should one draw from a wealthy, talented and decent man who attempts to lead a political party in the throes of a populist revolt? Above all, take care not to sacrifice one's family, faith and integrity. "It's not worth it," Mr. Romney says. "Believe me."

Mr. Continetti is the director of domestic policy studies at the American Enterprise Institute.

How China Could Turn Crisis to Catastrophe



GLOBAL VIEW
By Walter Russell Mead

While the world's eyes were fixed on the unfolding horrors of the latest Middle East war, China was busy pushing the envelope in the South China Sea. On Sunday, a Chinese coast guard vessel and another Chinese ship rammed a Philippine supply boat and coast guard ship in international waters claimed by China around the Spratly Islands. The State Department gravely noted that the Chinese actions "violated international law," but China appears unimpressed.

As readers of this column know, the most important international development on President Biden's watch has been the erosion of America's deterrence. The war in Ukraine and the escalating chaos and bloodshed across the Middle East demonstrate the human and economic costs when American power and policy no longer hold revisionist powers in check.

Washington's attention is understandably fixed on the threat of a wider Middle East war. The human and economic toll would be significant, and the U.S. might be drawn into the conflict. But if the erosion of America's deterrent power leads China and North Korea to launch

wars in the Far East, it would be a greater catastrophe by orders of magnitude.

For the past two weeks I've been on the road—in Pearl Harbor, Tokyo and Seoul—and the American, Japanese and Korean officials and think-tankers I met with kept hammering two thoughts into my head. First, a war over Taiwan would be far more serious for the world economy than the war in Ukraine or even a wider regional war in the Middle East. Second, our margin of safety is shrinking: The power of American deterrence in the Far East is declining. While there are some favorable long-term trends, for the next few years at least, China and North Korea are likely to see more reasons to test the will and the power of the U.S. and its allies.

If China decides on forcible unification with Taiwan, it has two principal options. It can invade the island directly, or it can try to blockade it. Taiwan, which imports 97% of its energy supply and also depends on food imports, is vulnerable to such a blockade. But Taiwan would not be the only country affected. Whether China invades or blockades, the regional and global consequences would be the gravest shock to the global economy since World War II.

Regionally, the effect of closing the South China Sea and the waters around Tai-

wan to international trade would be calamitous. South Korea and Japan are both heavily dependent on imported fuel and food. Both economies depend on the ability of their great manufacturing companies to import raw materials and export finished goods. A suspension of maritime trade would effec-

A war over Taiwan would devastate the economies of both Asia and the globe.

tively put both economies on life support, while making it difficult for tens of millions of people to heat their homes, run their cars or feed their children.

It isn't unlikely that North Korea, seeing an opening in the global and regional chaos, would take the opportunity to attack at a time when U.S. forces would have enormous difficulty reinforcing and resupplying the South.

China would also be hit. Ships wouldn't travel through war zones to Shanghai, Qingdao or Tianjin. The U.S. would likely, in addition to sanctions, enforce a blockade against ships seeking to supply China with goods deemed important for war.

For the rest of the world this would mean a massive

supply-chain headache. From Taiwan's semiconductors, vital for many industries and consumer products, to all the things that China, Japan and South Korea produce, the products of the Far East would vanish from inventories and store shelves. Globally, makers of the raw materials for those countries, as well as growers of such agricultural commodities as soybeans and grain, would lose access to major markets.

Even as supply-chain bottlenecks and blockages throw goods markets into turmoil, the financial consequences of the war could pose insurmountable challenges for the world's central banks. Stocks would crash. Currencies would gyrate. Debt markets would implode as sovereign borrowers like China and Japan faced wartime conditions and corporations dependent on Asian economies struggled to manage their debts.

Lulled into complacency by a long era of peace, most of us have yet to appreciate fully the dangers we face. Vladimir Putin's invasion of Ukraine and the Hamas attack on Israel should have made clear that we live in an era when the unthinkable can happen overnight. These days, we must not only learn to think about the unthinkable, in nuclear strategist Herman Kahn's phrase. We also need to prepare for it.

America Needs a House Speaker

By John Shadegg

Rep. Matt Gaetz and the seven other Republicans who voted to remove Speaker Kevin McCarthy are endangering America and the world. Because of their action, Congress has lost the ability to function. Lawmakers are powerless to act on behalf of the constituents they were elected to represent. These eight members surrendered the power of the House Republican majority, betraying the voters and their Republican colleagues.

A motion to vacate the speaker's chair without the votes to elect a successor is foolish. At best it is pointless grandstanding. The eight dissidents claim to have acted to stop reckless spending. Over-spending is a serious threat, but Congress can't do anything about it without a speaker. Thus it's impossible to defend their conduct as an act of principle.

We face more existential

threats now than we have at any time since 9/11. The southern border is wide open, inflation is hurting every American family, and crime is rampant in our cities. The feckless foreign policy of the Biden administration, beginning with the humiliating and deadly exit from Afghanistan, has so weakened our standing

It's time for Gaetz to admit his gambit failed and reinstate Kevin McCarthy.

in the world that two wars are raging, either of which could spin catastrophically out of control.

Mr. Gaetz and his seven confederates claim they voted to vacate the chair because Mr. McCarthy had decided not to force another government shutdown because he wanted to allow more time for discussion in

the face of so many unprecedented threats to the nation. While they were entitled to disagree, the decision to shut down the government wasn't theirs alone to make.

True, Mr. McCarthy had agreed to a rule that any member could file a motion to vacate the chair. That doesn't make it right. No individual member of a legislative body is entitled to, or is ever going to find, a leader who precisely matches his views. The eight Republicans rendered themselves and the entire Republican conference impotent.

As members of the majority, they made an implicit promise to support its leaders and respect their colleagues. By choosing to associate themselves with other members of the Republican Party, they assume a duty not to harm the party's cause or their colleagues. No wonder the 210 Republican members who voted to keep Speaker McCarthy are livid. After numerous failed attempts to se-

lect a successor, no solution is in sight and Republican members are moving further apart.

It is clear now that no member other than Kevin McCarthy commands the respect to be elected speaker and that any further delay in choosing a speaker hurts the Republican Party and America. The course of the nation depends on the character of its leaders. Mr. Gaetz and all of his Republican colleagues—conservatives, moderates and others—owe it to the institution and the nation to set aside their individual ambitions, reinstate Mr. McCarthy, and move forward with the nation's business. If they refuse, responsibility for the consequences will fall squarely on them.

Mr. Shadegg, a Republican, served as a U.S. representative from Arizona, 1995-2011, and as chairman of the House Republican Policy Committee, 2005-06.

OPINION

REVIEW & OUTLOOK

Chevron Bets on Peak Green Energy

The climate lobby's pronouncements that the end of fossil fuels is nigh appear as premature as warnings two decades ago that supply would soon run out. Chevron on Monday announced a \$53 billion bid for Hess Corp. because it knows the world will need oil and gas for the foreseeable future no matter how much politicians subsidize green energy.

Chevron's Hess acquisition comes on the heels of Exxon Mobil's \$60 billion tie-up with Pioneer National Resources this month. Higher interest rates are prompting consolidation across the U.S. economy, as smaller, less-capitalized companies struggle to borrow. Oil and gas giants are flush with cash owing to the run-up in prices over the past two years.

As he tried to deflect blame for high gasoline prices last year, President Biden demanded that oil and gas companies spend their record profits on increasing production. That's what they're doing. Chevron says the combined company is "expected to grow production and free cash flow faster and for longer" than its current five-year guidance.

Hess will increase Chevron's footprint in the Gulf of Mexico and North Dakota's Bakken shale formation. Texas's Permian basin accounts for almost all of the U.S. oil supply growth over the past three years, but its production is expected to start tapering off by the end of this decade. Hess's Bakken assets could then become more valuable.

But Hess's most lucrative real estate may be off the coast of Guyana, where it holds a 30% share in an estimated 11 billion barrels of recoverable oil and gas resources, which it is developing with Exxon and China's Cnooc. That play currently produces 400,000 barrels a day and is expected to "deliver production growth into

the next decade," according to Chevron.

If Chevron believed that demand for hydrocarbons would soon peak and decline—as the International Energy Agency (IEA) claimed last month—it instead could have boosted investment in heavily subsidized green-energy ventures such as hydrogen or increased shareholder buybacks.

But oil and gas are yielding a higher return on capital than renewables, even with government's enormous green subsidies. This is why BP and Shell are scaling back wind and solar investment and sinking more capital into fossil fuels. Chevron CEO Mike Wirth says the company will make a double-digit return on capital.

Offshore wind projects around the world are being scrapped because they aren't expected to be profitable amid higher interest rates and material costs. Ford and General Motors are putting their electric-vehicle manufacturing plans in neutral amid slowing consumer demand. Tesla also recently dialed back plans to expand production.

Demand for green energy and EVs could peak sooner than demand for fossil fuels. Population and energy demand are growing mostly in low-income countries. Nigerians aren't going to drive Teslas or power their homes with solar panels. High costs and technological challenges also limit the widespread deployment of green energy and EVs in wealthy countries.

The climate lobby still isn't paying attention. The IEA last month proclaimed that the world is witnessing "the beginning of the end of the fossil fuel era." Green activists are demanding that companies disclose their "climate risks." The real threat to a more prosperous future, as Chevron well knows, is a world with too little oil and gas, not too much.

The oil giant invests \$53 billion to acquire Hess's oil and gas assets.

Greece's Great Economic Comeback

Talk about an economic comeback story. Less than a decade ago, Greece looked like it might never recover from its economic and political traumas. On Friday it won back an investment-grade credit rating from Standard & Poor's.

The upgrade on Greek debt achieves a goal set by Prime Minister Kyriakos Mitsotakis, although it also sells short the scale of the transformation Mr. Mitsotakis has brought about in Athens. S&P Global cited "significant budgetary consolidation" and the summer's electoral "mandate for policy continuity" to explain its decision—which, as so often with credit ratings, arrives behind the curve and for the wrong reasons.

Athens needed to get spending under control after the fiscal excesses of the early 2000s culminated in a debt crisis starting in 2009. But if a balanced budget were all the country required to be deemed investable, a credit upgrade would have happened by now. Greece agreed to three separate bailouts from its European peers between 2010 and 2015, all of which included punishing fiscal conditions.

Those conditions were never met because neither the bailout deals nor Greek politicians implemented a growth agenda. Voters grew exasperated with the first two bailouts-to-nowhere and in 2015 swung to the far left, electing Alexis Tsipras of the Syriza Party as Prime Minister.

Europe's former basket case is becoming a model fiscal citizen.

Mr. Tsipras nearly blew up the eurozone, refusing to honor bailout conditions and going so far as to stage a botched referendum on euro membership before stepping back from the brink. Then he signed a bailout deal with its own fiscal strictures.

Mr. Mitsotakis's innovation, since ousting Mr. Tsipras and bringing the center-right New Democracy party back to power in 2019, has been to focus on economic growth. He cut the corporate tax rate to 22% from 29%, has worked to rationalize government operations, and now is pushing ahead with privatizations.

The renewed optimism explains why the economy is expected to grow this year by about 2.5%. S&P expects government debt will fall to 146% of GDP from 189% in 2020, and investment is pouring in. All of this happened despite the pandemic, a migration crisis and several natural disasters. It also explains why Mr. Mitsotakis won re-election handily this summer.

Challenges remain for an economy that still is too dependent on a handful of industries such as tourism, and important regulatory reforms are needed to increase dynamism. But Mr. Mitsotakis has figured out that an economic growth agenda is the essential ingredient for building support for those reforms—and for balancing the books. That's a lesson the rest of Europe—and America—could learn from the Continent's former problem child.

The costs of a weaker deterrent are real, even if Iran was never honoring the rules. Iran will now obtain equipment for its drone and missile programs more easily.

The U.S. lets sanctions expire as Tehran's proxies fire away.

Expect its missile production to expand and do more damage in the hands of Iran's proxies in Lebanon, Syria, Iraq and Yemen, as well as Russia in its war on Ukraine. New markets will also open up in Venezuela, Belarus and beyond.

It's hardly a secret that Russia and Iran have been flouting the drone embargo. But the two states have thus far avoided trade in ballistic missiles. This latest demonstration of Western irresolution will encourage Iran to accelerate its missile testing and transfers, which could include supplementing the short-range ballistic missiles Russia has been using in Ukraine.

If the embargoes have long been halfhearted, the snapback mechanism was an intentional ruse. It was a token provision to help President Obama and the Europeans reassure their domestic audiences.

Nuclear, drone and missile violations stood no chance of triggering snapback, so long as the Obama and Biden Administrations could claim that talks were continuing and Iranian behavior might somehow change. The Biden policy has been to bribe Tehran, releasing frozen Iranian assets to buy peace and cooperation. See Israel for how that has worked.

What new catastrophe would cause President Biden to rethink his Iran policy? That's the broader question given that every escalation by Tehran seems to earn Supreme Leader Ayatollah Ali Khamenei another reprieve. The forbearance—none dare call it appeasement—makes a larger war even more likely. The U.S. better send more missile defenses to the region.

LETTERS TO THE EDITOR

Celebrate the Biden Economy? Keep Dreaming

In "The Economy is Great. Why Do Americans Blame Biden?" (op-ed, Oct. 19), Alan Blinder first turns to lags in perception, general grumpiness and the like. Then he hits on his core reason: lower inflation isn't price reduction, and people don't understand that "prices won't return to their old levels" without a severe recession.

Mr. Blinder is right in the abstract, but he leaves out a key point that explains why Americans feel the way they do: Wages have remained behind price increases for 22 of the past 30 months. People will accept higher prices if their buying power stays ahead of the curve. It's only now recovering.

DON RODRIGUES
Mansfield, Texas

Where I live, mortgage rates are the highest in 24 years. No one can buy a home. My grocery prices have risen by more than 25% since President Biden was elected, and I am paying more than double to fill up my car. My investment accounts have fallen by tens of thousands of dollars and my health-insurance premiums for next year are rising by 10%. Where is Mr. Blinder living? I would be grateful if he could reveal the location of his current economic utopia.

GARY C. MCKINNEY
North Myrtle Beach, S.C.

Mr. Blinder offers an excellent assessment of consumer perceptions, but he misses one crucial factor in the disconnect between Mr. Biden's low approval ratings and the favorable eco-

nomics reality: the media. The endless criticism and Chicken Little sky-is-falling stories about the Biden administration's economic policies present a warped view. Where there are problems, let's address them. Where there is success, let's celebrate it.

TOM PALMER
Wilmette, Ill.

Mr. Blinder relies on the assumption that "people's evaluation of the economy is backward looking." Not all of us. Some of us are forward looking. We are worried about the future taxes that will be needed to cover the trillions of dollars in debt that Mr. Biden has added, and we are concerned for our future generations, who will be saddled with debt before they even get started in life.

MARILYN MELTZER
Pittsburgh

Most people blame Mr. Biden's economic policies for a reason. When he took office, economists warned that additional federal spending wasn't needed and would lead to inflation. Mr. Biden did it anyway. People also know that fuel prices rose before Russia invaded Ukraine due to the Biden war on fossil fuels. Add to that regulations that increase the cost to consumers of stoves, heaters, appliances and the insult of taxpayer money being used to subsidize more expensive "renewable energy" and to try to forgive student loans. I hope this explanation helps Mr. Blinder understand.

MICHAEL RAAB
Sanibel, Fla.

Unrwa Responds on Humanitarian Aid to Gaza

At a moment when two million people in Gaza, mostly civilians, are poised to become victims of an unprecedented humanitarian catastrophe, it is shocking that your editorial "The Gaza Hospital and the Missing Aid" (Oct. 18) concludes that humanitarian aid may end up in the hands of Hamas.

The United Nations Relief and Works Agency for Palestine Refugees in the Near East is a principled humanitarian and human development agency providing assistance

directly to Palestine refugees. All Unrwa staff, Palestine refugees, contractors, vendors and nonstate donors are screened against the Consolidated U.N. Security Council Sanctions List. Unrwa has, to date, lost 16 of its staff in this tragedy. If only to respect their memory and work in the service of others, Unrwa deserves the opportunity to supply the real facts.

WILLIAM DEERE
Director, Unrwa Representative Office
Washington

The House Needs a Speaker, Any One Will Do

At this point, I don't care which GOP member becomes House speaker ("Nobody for Speaker of the House," Review & Outlook, Oct. 18). There are three major funding issues that need immediate attention but can't be voted on until a speaker is elected. Congress needs to pass a government spending bill before the end of the month and pass bills to support Ukraine's fight against Russia and Israel's fight against Hamas. Each one is important. Collectively, they are critical.

Blockchain Helps the Good Guys Track the Bad Guys

Regarding "Militants Boosted Holdings of Crypto Over the Past Year" (Page One, Oct. 11): Groups like Hamas, Palestinian Islamic Jihad and Hezbollah finance their operations through various means, including illicit finance via traditional banking systems, hawala networks and state sponsorship. Cryptocurrency makes up a small portion of that.

Blockchain, the technology underpinning cryptocurrency, provides a public and transparent ledger of all transactions. Law enforcement is well trained to track, trace and apprehend illicit actors abusing this technology, and it has a strong record of doing so. While new technologies are often exploited by bad actors, they often serve as more valuable tools for law enforcement than for criminals. The blockchain makes concealing illicit funds through cryptocurrencies ineffective. The record must reflect that cryptocurrency isn't the currency of choice for criminals.

PERIANNE BORING
CEO, Chamber of Digital Commerce
Washington

Putin, Xi and Khamenei

The situation in the Middle East puts pressure on the U.S. as it seeks to arm Israel and Ukraine at once ("Wake Up, Washington," Review & Outlook, Oct. 10). Europe appears impotent, having done too little for too long to build up its defenses and defense industry. I wonder if Vladimir Putin, Xi Jinping and Ali Khamenei saw an opportunity to stress the Western defense system and draw down our reserves. Is Taiwan next?

JAY PRAGER
Groton, Mass.

After these three are signed into law, then Republicans can decide to vacate the newly elected speaker or stick with him or her.

DENNY FREIDENRICH
Laguna Beach, Calif.

It doesn't matter a whole lot who the GOP chooses as speaker. The speaker's job isn't to impose his ideology on Congress but to discern the sense of Congress and organize efforts to implement its agenda. Besides, when the GOP has such a small majority, as it does today, the speaker isn't able to exert much personal influence.

DAVID PETERSON
Orlando, Fla.

Your editorial notes that Rep. Patrick McHenry, the speaker pro tempore, is well respected and could perhaps be convinced to take the job for the good of the country. The last well-respected member of the House convinced to take the job for the good of party and country was Paul Ryan, and look what happened to him.

RICHARD WOLFF
Somers, N.Y.

Hamas Doesn't Hide Its Goal

In trying to figure out what the Hamas "sadism . . . was intended to do," Peggy Noonan overlooks the most obvious explanation ("The October Horror Is Something New," Declarations, Oct. 14). Hamas's strategy is to kill as many Jews, in as cruel a manner, as possible, and to spread fear and terror to break the spirit of those Jews whom it is unable to kill.

MARTIN STEIN
Teaneck, N.J.

Pepper ... And Salt

THE WALL STREET JOURNAL



"I didn't say he was an interesting person. I said he was a person of interest."

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OPINION

Israel Needs Unconditional Surrender

By Jerome M. Marcus

Israel needs to declare the precise goals of its Gaza campaign—for its own citizens and soldiers, and to establish the credibility of its efforts in the world's eyes. The “destruction” of Hamas has no meaning in international law and is too vague for Israelis being asked to sacrifice everything.

History provides an example of what Israel should do. At the end of World War II, the Allies' goal was clear: The German Third Reich must agree to an “unconditional surrender.” The Allies' demand for Germany should be the model for Israel now. Hamas's war crimes are equal in depravity to those of the Nazis; their magnitude is far less only because Jews now have a fortified homeland and an Israeli army. Hamas and the Nazis also shared the goal of Jewish genocide. Following the Allies' example, Israel should announce that it will obtain Hamas's unconditional surrender.

The Jewish state's goal in Gaza should be the same as the Allies' in Germany after World War II.

In 1945, in the presence of representatives of the Allied Powers, German High Command officials signed military surrender documents—the Reims accord in France on May 7 and the Act of Military Surrender in Berlin on May 9. The documents required German soldiers to cease military op-



German commanders sign the Reims accord, May 7, 1945.

erations. The Allies' control of German territory enabled them to enforce that order, which they did.

At the Potsdam Conference in the summer of 1945, the Allies agreed on a complete disarmament and demilitarization of Germany, the transfer of land from Germany to Poland and the Soviet Union, and the expulsion of German populations from the countries Germany had attacked. The Allies also provided for “de-Nazification”—removing Nazis from positions of authority, eliminating Nazi political organizations, and the arrest and trial of war criminals.

The Allies pursued the removal of Nazis from positions of authority only halfheartedly; but Nazi political parties and organizations were effectively suppressed, and the highest-ranking Nazi leaders were arrested, tried and punished, including by death.

Israel should follow in the Allies' steps. It must demand unconditional surrender. It must capture and, at least in the war's immediate aftermath, take complete control of Gaza. It must crush Hamas, killing or capturing its top leaders. Israel must announce that it will try Hamas's leaders in courts that it convenes for the trial of war crimes—similar to the Jerusalem District Court's 1961-62 trial of Adolph Eichmann, a Nazi official who played a central role in implementing Hitler's “Final Solution.” If found guilty, defendants must be executed, and Israel must carry out those sentences. (Israeli law provides for the death penalty in cases involving genocide or Nazi collaboration, and Eichmann is the only prisoner the state of Israel has executed.)

Prime Minister Benjamin Netanyahu has already made it clear that

Israel has no desire to govern those who live in the Gaza strip. Just as the Allies worked together to govern Germany immediately after VE Day, Israel can seek partners in the initial government of Gaza. Its Abraham Accords allies—the United Arab Emirates, Bahrain and Morocco—are the natural source for such help. These Arab states have much to gain from a Gaza that is at peace with its neighbors and free from the sickness Iran seeks to spread throughout the Middle East.

Germany's surrender enabled French citizens, even those just across the border from the Germans, to live securely and without fear. Israelis in Sderot and other border towns deserve the same. Israel should take a section of Gaza along the border and turn it into a security corridor to ensure the safety of its own citizens. Egypt should do the same on its border with Gaza to end the smuggling of commercial goods and weapons by the Muslim Brotherhood and other illegal groups that could again enable Iran to destabilize the region. Israel and the other Abraham Accords signatories should similarly declare such Islamist organizations out of bounds in a peaceful Gaza.

Israel has a 75-year history of improvising brilliantly as it goes. But clarifying and announcing its plans now for Gaza's future will promote the legitimacy of Israel's actions and help it garner support for the steps it must take to secure peace. History teaches us what Israel needs to do.

Mr. Marcus is a Philadelphia lawyer and a fellow at George Mason University's Center for the Middle East and International Law.

How Campus Politicization Fed Today's Hatred

By Danielle Shapiro And Yonah Berenson

Princeton, N.J.

As college campuses erupted in support of Hamas's atrocities, many administrators responded equivocally. Often they took refuge in the principles of free speech and institutional neutrality, saying universities have no business taking positions on controversial issues. That would have been convincing if they had adhered to those principles before this month, but many didn't. Officials often took strong positions on far less significant and more debatable issues. This politicization set the stage for the morally and intellectually bankrupt protests that have caused administrators such embarrassment.

Universities are supposed to be places of truth-seeking and open debate. When they enforce dogmas instead, they do a disservice by intimidating students who disagree and by absolving those who agree from the responsibility to defend their views.

In January 2022, the dean of Princeton's School of Public and International Affairs, Amaney Jamal, wrote in a memo to students that Kyle Rittenhouse's acquittal set “a dangerous precedent” and that “we . . . know without a doubt” that “there are racial inequities in nearly every strand of the American fabric.” After the Supreme Court decided *Dobbs v. Jackson Women's Health Organization* in June 2022, Princeton's Gender and Sexuality Resource Center announced on its Instagram page that it “actively resists sexism, cissexism, heteronormativity and other intersecting forms of oppression” and that “abortion is an essential and fundamental right that needs to be protected.”

These opinions can be defended, but they weren't. Princeton administrators instead classified the topics as outside the realm of debate. That discourages students from thinking critically about their own opinions and prejudices and stifles the free exchange of ideas, even on campuses that don't directly punish speech.

Enforcing orthodoxy and suppressing speech and thought taught students to be cowardly and foolish.

That leaves students intellectually unprepared. If administrators stepped back and encouraged students to debate, students would subject their ideas to the rigor of the intellectual marketplace and be more apt to reject those that failed. Reasonable arguments can be made for or against a two-state solution—but not for mass murder.

Students sometimes seem to have an inkling that they're defending the indefensible. When Princeton's chapter of Students for Justice in Palestine held an outdoor vigil for “Occupied Palestine, Gaza and the West Bank,” it told attendees masks were mandatory. Friends of ours who tried to film the vigil were harassed into putting down their cameras. SJP sent an email to all Princeton students on campus with a statement that listed no individual signers and was linked to an anonymous Google account under the name “River Sea.”

Similarly at Brown, pro-Hamas protesters were told not to “wear identifiable clothing” and that photographs were strictly prohibited. At Arizona State, students were told to “bring signs, flags, water, and please wear a mask.” At Harvard Law School, a statement that held “the Israeli regime entirely responsible for all the unfolding violence” listed 31 student groups as signatories. But as soon as members' identities were revealed, many groups revoked their support, in part because students feared for their employment prospects. Apparently the desire for lucrative jobs outweighs these activists' commitment to the Palestinian cause.

As for the administrators, their sudden embrace of free speech and institutional neutrality is craven at best and anti-Semitic at worst. But these principles are crucially important. The campus reaction to Hamas's atrocities is the most glaring evidence to date that in abandoning them, universities have deprived their students of a good education.

The Enemies of Freedom Are Deadlier Than Ever



FREE EXPRESSION
By Gerard Baker

Central to the West's idea of its modern historic supremacy has been the comforting myth that we have prevailed because of the superiority of our ideas.

Might in the end can't overcome right, we think. The brute force of tyranny and totalitarian terror can succeed for a while—even a long while—but eventually, the human yearning for freedom and justice has an inescapable logic. It is not so much that right will always overcome might, as that being “right” confers on us a power that is mightier than any dictator could ever muster.

This is a geopolitical version of Whiggish history, the idea that the world is evolving on some great hidden trajectory toward liberty, democracy and enlightenment. “The arc of the moral universe . . . bends toward justice,” as Martin Luther King Jr. put it.

But what if it doesn't? Looking back, not only to the last century or two but to earlier epochs, history can seem more like a random walk through periods of progress and retreat, light and darkness, civilization and tyranny, than a straight arrow aimed at freedom and peace.

In the 16th century, more than 2,000 years after the citizens of Ath-

ens had been meeting to make policy, spend public money and elect leaders in the form of government that gave us the word “democracy,” the city and its residents covered under the heel of a distant ruler, a subjugated outpost of a vast foreign empire.

The Roman Republic may not have been democratic in our understanding of the term, but its constitutional order and many of its institutions served as templates for the modern American republic. Yet it was soon enough replaced by imperial rule that, while it retained the trappings of republicanism, was for centuries a personal autocracy that was in turn eventually replaced by barbarous chaos.

Western liberal ideas aren't guaranteed to prevail, and comforting myths breed complacency.

You could argue that the almost innate sense we have that justice and freedom will prevail in the end is merely the most recent example of winners' history: that the world as it exists is the product of the military and strategic victory of the U.S. and its allies in World War II and the Cold War. We won. So in our telling of the story we insist that there was something inevitable about the ultimate righteous triumph of freedom.

Our confidence is so complete we even declare that history is over.

But history is alive and well, and as unpredictable as ever. It turns on hinges. Time, chance and the application of human genius or folly can—for long periods—supersede vast impersonal forces. If Adolf Hitler hadn't invaded the Soviet Union in 1941, there's a reasonable chance that most of Europe would today be preparing to celebrate the centenary of the thousand-year reich (though when you witness the anti-Semitic demonstrations across European cities taking place right now, you could be forgiven for wondering whether many of those countries didn't embrace some Nazi values after all).

The impact of the so-called soft power the U.S. exercised during the Cold War was critical to our success—and in that sense the idea that values, as well as simple force, can be historically determinative isn't wholly wrong.

But the power of our example would never have been enough without the example of our power. In the absence of sustained military commitments, strategic engagement and repeated sacrifice, there was nothing guaranteed about the victory of our ideas.

We need to remember that truth as we survey the world today. Not since the worst days of the Cold War, perhaps not since the 1930s, have we faced such a combination of threats to our freedom and prosperity, to our very existence. A touching faith in the supposed universality of

our ideals and the inevitable righteousness of our cause won't save us.

A modern de facto alliance of tyrannies—we might call it an axis of evil opportunism—advances across the globe. China, Russia, Iran—and you can probably add, if only because of the sheer malevolent volatility of its leader and its possession of weapons of unfathomable destruction—North Korea.

They don't see the triumph of the West and its values. They see a weakened and declining West, an America at odds with itself over its identity and its leadership in the world, a nation enfeebled by deepening self-doubt, widening division, widespread mistrust, timid leadership, institutional paralysis and soaring debt. They see, as we have seen this last week, a culture—in the media, educational institutions, public discourse—that increasingly does their work for them, willfully propagating falsehoods that advance their cause, always eager to attribute evil to us and not to our enemies.

If there is one benefit we can draw from the atrocities we have witnessed by Iran's proxy Hamas in Israel this month it is this: It is a heart-stopping reminder of what is at stake, a brutal warning that we take for granted what we have earned and what we have fought for at our own peril.

It isn't our values and our ideas that may ensure we prevail in this struggle, but the terrifying recognition of how fragile those values and ideas are.

Get Ready for a Short-Lived Economic Boom

By Stephen Miran

The Bureau of Economic Analysis will release its third-quarter economic-growth estimate Thursday, and expectations are stratospheric. The Atlanta Federal Reserve suggests gross domestic product might have grown at an annual rate of more than 5%. Given persistent expectations for a slowdown, how is that possible? The answer lies in the unexpected loosening of fiscal and monetary policy in 2023.

The fiscal story is straightforward. After taking account of the Biden administration's unsuccessful attempt to forgive student loans, the deficit unexpectedly doubled this year to about \$2 trillion, according to the

Congressional Budget Office. A deficit more than 7% of GDP can lift growth, but outside war or severe recession, it is irresponsible fiscal management, for which we are paying the price through higher interest rates.

Not all that extra \$1 trillion boosts growth. Lower capital-gains-tax revenues, which reflect poor asset-market performance, won't raise GDP. Neither will reimbursements from the Federal Reimbursement Corp. for the springtime bank bailouts.

Yet Americans have received considerable real stimulus in the past year, albeit indirectly. Lower average tax rates, for instance, resulted in an effective tax cut. Because tax brackets adjust to inflation with a lag, average rates were higher during last

year's pocketbook-crushing inflation. They have since moved up by 7% and brought effective rates down. All told, \$300 billion to \$500 billion of the deficit expansion amounted to GDP stimulus from various sources, mostly between February and July.

The monetary side is subtler. Notwithstanding the Fed's rate hikes, some aspects of monetary policy loosened this year. The confrontation over the debt limit led the Treasury to pause debt issuance, draw down its accounts at the Fed, and borrow from other government pools of savings. This combination counteracted the Fed's balance-sheet reductions—so-called quantitative tightening—as decreased bond demand from the Fed was offset by decreased offerings from the Treasury. Financial liquidity eased as the government spent its deposits, which became household or corporate deposits and increased the money supply.

Monetary policy works through financial conditions, which eased as stocks remained buoyant. Growth in the third quarter—potentially a source of momentum for the fourth—is a result of the unexpected easing of both monetary and fiscal policy. With memories of 9% inflation seared in the public's mind, this was the worst timing for more stimulus.

This double easing won't be repeated. The deficit will likely be reduced slightly in fiscal 2024 thanks to the Fiscal Responsibility Act, which resolved the debt-ceiling showdown in June. In other words,

fiscal policy will become less stimulative and a hair more restrictive.

The same applies on the monetary side. The Treasury informed the market in its Aug. 2 Quarterly Refunding Announcement that it would auction more than \$1 trillion of debt in the third quarter to fund deficits and refill the accounts it drained in the spring. The huge supply of bonds has pushed yields higher, reversing the easing of financial conditions, and the market is on tenterhooks over the agency's next refunding announce-

Third-quarter economic growth may run at 5%, but the bubble is sure to deflate quickly after that.

ment, due Nov. 1. The Treasury interdicted quantitative tightening until August, but it has come back with a vengeance, reversing the earlier loosening of monetary policy.

We are starting to see the effects of that transition in the bond and stock markets. How long until these changes in policy hit the economy? One thing seems clear: The economy's performance in the third quarter will be difficult to repeat.

Mr. Miran is an adjunct fellow at the Manhattan Institute. He served as a senior adviser at the U.S. Treasury, 2020-21.

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WORLD NEWS

Argentine Markets Plunge After Vote

Bonds fall 10% after economy minister's first-round lead drives spending fears

By RYAN DUBÉ

Argentine stocks, bonds and currency traded sharply lower on Monday after the ruling party's presidential candidate came out on top in the first round of voting, surprising investors and creating concerns about the continuation of free-spending policies driving triple-digit inflation.

Argentina's bonds fell as much as 10% and were trading around 25 cents on the dollar before bouncing back slightly.

The benchmark Merval index of Argentine stocks was down 12%. Shares of state-owned energy company **YPF** fell 6.5% and agriculture firm **Cresud** was also 6.5% lower.

The Argentine peso's black-market exchange rate, which is widely used by locals to buy scarce dollars, was trading at about 1,100 per dollar, from around 900 before the vote.

On Sunday, Sergio Massa, the current economy minister and ruling Peronist coalition's candidate, surprised pollsters by finishing first in the election with about 37% support. Javier Milei, a libertarian economist and political outsider who has pledged to drastically cut spending and taxes, came in second with 30% sup-

port, with 99% of the votes counted. Both men advanced to a runoff vote in November. The winner will take office on Dec. 10.

The Peronists' strong showing reduces chances of market-friendly overhauls if they remain in power, investors say, as the country grapples with an economic crisis that includes 138% inflation, a sharply depreciating currency and rising poverty. But Milei's proposals to drastically upend Argentina's economic and political foundations also risk sparking social unrest.

"You have someone who can predictably manage Argentina's decline and someone whose attempts to revolutionize economic management can

burn down the house," said Benjamin Gedan, an Argentina expert and director of the Latin America program at the Wilson Center, a Washington-based think tank. "That is basically what is on the menu."

Ahead of the vote, Massa eliminated the income tax for nearly all Argentines, while showering people with cash bonuses, in what some analysts said was an attempt to gain traction against a surging Milei.

"I've never seen anything like that in my professional life, not only in Argentina but anywhere else," said Claudio Loser, an Argentine economist and former Western Hemisphere director at the International Monetary Fund. "From

an economic and fiscal point of view, it is highly irresponsible."

Economists said the measures, paid for through money printing, will have a cost of about 1% of gross domestic product, deepening the country's large fiscal deficit and indebtedness.

Massa will have the incentive to continue increasing government spending to strengthen his electoral chances at the expense of future economic growth, said Bruno Gennari, an economist who tracks Argentina at London-based investment bank KNG Securities.

"Those kinds of policies proved to be efficient in getting votes," he said. "And I

don't expect it to change gears ahead of the second round."

Jared Lou, portfolio manager at William Blair Investment Management in Chicago, said the increased public spending would create an even more challenging economic scenario in the next two years.

"For bondholders, this is a negative outcome," Lou said of Sunday's vote. "The economy is already in a very precarious situation, and there is not a lot of space for expansionary policy."

Both candidates will compete to attract votes from third-place candidate Patricia Bullrich, a former lawmaker from the traditional conservative establishment. She received about 24%.

China Looks to Charm U.S. to Pave Way for Xi Trip

By JAMES T. AREDDY

China hasn't said yet whether its leader, Xi Jinping, will accept President Biden's invitation to visit the U.S. in November, but Beijing is gearing up an American charm offensive that appears designed to prepare the way for what would be Xi's first U.S. trip in 6½ years.

Chinese Foreign Minister Wang Yi is scheduled to meet Secretary of State Antony Blinken in Washington this week, Biden administration officials said Monday. Other people briefed on the plans said Wang's role includes preparing for a Xi-Biden summit.

Also this week, a delegation of Chinese business, cultural and sports figures, including basketball star Yao Ming, is expected in New York for public engagements. That follows an uptick in academic exchanges, and Vice President Han Zheng's efforts to drum up investment in China when he attended the United Nations General Assembly in September.

The administration officials who confirmed Wang's Washington visit declined to say if a summit is in the works. They said Blinken's talks would cen-

ter on the Middle East, Ukraine, fentanyl, North Korea, the East and South China seas.

Asked if China's envoy would meet Biden, as Blinken did with Xi during a visit to Beijing in June, the officials said they didn't have scheduling information to offer. China's embassy in Washington said it couldn't comment on agendas, but said the Chinese and U.S. leaders agreed on the importance of people-to-people exchanges.

"For the past several weeks, I've seen the Chinese side gearing up" for an expected U.S. visit by Xi, said Daniel Russel, a vice president for international security and diplomacy at the Asia Society Policy Institute.

Russel, a former senior State Department official, said it is typical of Beijing to dispatch academics, former officials and other envoys to warm the atmosphere and tap U.S. sentiment ahead of summits. He has had several such meetings in recent weeks. "They want the environment Xi Jinping enters to be less highly charged," he said.

A group of nongovernmental representatives of both nations held four hours of virtual talks Thursday organized by the Asia Society, which included a



Chinese leader Xi Jinping, who hasn't visited the U.S. in 6½ years, is considering whether to attend a November summit.

senior Chinese Communist Party official, Liu Jianchao, who heads its international liaison department.

China's Xinhua News Agency termed Thursday's talks as "Track 1.5"—meaning quasiofficial—and said they were "candid and constructive exchanges focusing on strengthening communication and cooperation, managing conflicts and differences."

One participant on the U.S. side said the Asia Society talks compared favorably with a more testy tone during some

recent bilateral engagements, which often featured U.S. complaints about treatment of business in China and what the person termed Chinese "haranguing" about U.S. policy.

The pickup in bilateral talks appears to signal Xi's interest in accepting Biden's invitation to attend November's leadership summit of the Asia Pacific Economic Cooperation grouping set for San Francisco, talk participants said.

Xi this month told visiting Senate Majority Leader Chuck Schumer there are "a thou-

sand reasons" for the U.S. and China to cooperate.

Despite the pre-summit niceties, Xi has sent other strong signals that suggest a limited appetite for a fundamental reset in relations. Most notably, Beijing last week offered a red-carpet reception for Russian President Vladimir Putin.

Xi's appearance at APEC has been in doubt in part because of the meeting's location in San Francisco, a hotbed of political activism with large Chinese and Tibetan populations that Beijing officials fear could stage embarrassing protests.

Beijing was rattled this month when a man with a Chinese name drove a sedan into the lobby of China's visa office in San Francisco, where police fatally shot him.

Xi last set foot in the U.S. in April 2017, when he visited then-President Donald Trump in Florida. Biden hasn't traveled to China as president. Xi and Biden met in Indonesia last November in a bid to halt a slide in relations, though a Chinese balloon's path over the U.S. weeks later soured the mood.

Disputes between the nations cover a multitude of sec-

tors, from trade to the military. Biden has called Xi a dictator and warns that "China harbors the intention and, increasingly, the capacity to reshape the international order," while Xi accused the U.S. of leading a program of "all-round containment, encirclement and suppression against us."

Scott Kennedy, a senior adviser at the Center for Strategic and International Studies, says the impetus for some of the recent academic exchanges in which he has been involved doesn't necessarily mean a Xi visit is on, though he expects one to go ahead. The resumption of dialogue, he said, also reflects a broader desire in China to signal a return to normalcy after the Covid-19 pandemic and amid the country's economic slowdown.

While Michael Froman, president of the New York based Council on Foreign Relations, said there is little sign in the talks he has been engaged in that Biden and Xi can produce agreements, as leaders have at past summits, he added that "the meeting itself is the most important deliverable."

—Lingling Wei and Liyan Qi contributed to this article.

WORLD WATCH



A BEACON OF LIGHT: Flowers were handed out Monday to Hindu devotees at a temple in Nepal for the 15-day Dashain festival.

EUROPEAN UNION Global Tax on Billionaires Pitched

A global minimum tax on billionaires, equal to 2% of their wealth, could raise nearly \$250 billion a year, according to a think tank co-funded by the European Union.

The EU Tax Observatory proposed such a tax in a report released Sunday and said it would affect fewer than 3,000 billionaires. Billionaires have effective tax rates equivalent to zero to 0.5% of their wealth because they use shell companies to dodge income taxation, said the think tank, which is located at the Paris School of Economics.

Joseph Stiglitz, a Nobel Prize-winning economist, wrote in the report that citizens would begin to reject taxation if they didn't believe everyone was paying their fair share of taxes.

—Alyssa Lukpat

TURKEY Sweden's NATO Bid Moves Forward

Turkish President Recep Tayyip Erdogan has submitted a protocol for Sweden's admission into NATO to Turkey's parliament for ratification, his office said Monday, bringing the Nordic country a step closer to membership in the military alliance.

Erdogan had been delaying ratification of Sweden's membership, accusing Stockholm of being too soft on Kurdish militants and other groups his country considers to be security threats. Turkey also was angered by Quran-burning protests in Sweden.

All 31 NATO allies must endorse Sweden's membership. Turkey and Hungary are the only two allies that have yet to ratify it. It wasn't known when Sweden's membership would come to the floor.

—Associated Press

BANGLADESH Two Trains Collide, Killing at Least 15

A cargo train hit a passenger train outside the Bangladeshi capital Monday, leaving at least 15 people dead and scores more injured, fire officials said.

Rescuers joined residents in extracting passengers from the wreckage, said fire official Mosharraf Hossain at Bhairab, in the central district of Kishoreganj, where the collision occurred at 3:30 p.m.

He said the bodies of at least 15 people had been recovered, and the number of casualties could increase.

The crash occurred when two rear coaches of the Dhaka-bound Egarosindur Godhuli Express passenger train were hit by a cargo train heading to Chattogram, Azizul Haque Rajon, a senior fire official, said.

—Associated Press

SWITZERLAND Anti-Immigration Party Rebounds

Switzerland's anti-immigration Swiss People's Party rebounded from searing losses four years ago to become the largest parliamentary faction after the election, official results showed, as two environmentally-minded parties lost ground despite record glacier melt in the Alpine country.

The final tally late Sunday showed the People's Party, known as SVP by its German-language acronym, gained nine seats compared with the last vote in 2019, and climbed to 62 seats overall in parliament's 200-member lower house. The Socialists, in second, added two seats to reach 41. The Greens shed five seats and will now have 23, while the more centrist Liberal-Greens lost six, and will have 10.

—Associated Press

Russian Court Arrests American Journalist

By ANN M. SIMMONS

A Russian court formally arrested a U.S. journalist for Radio Free Europe/Radio Liberty in a case that is exacerbating tensions between Washington and Moscow, ordering her to be held in pretrial detention on an allegation she failed to register as a "foreign agent."

A representative of the Sovetsky District Court in Kazan, a city in southwest Russia, said Alsu Kurmasheva, who holds U.S. and Russian citizenship, would be held until at least Dec. 5.

Kurmasheva, an editor for the Prague-based news organization, initially was detained in Kazan on Oct. 18, her employer said. "We are deeply disappointed by the outcome of today's hearing," said Jeffrey Gedmin, RFE/RL's acting president. "We call for Alsu's immediate release."

Kurmasheva's lawyer, Edgar Matevosyan, said he plans to appeal the court's ruling. He said Kurmasheva hasn't been charged and hasn't entered a plea. Prosecutors have up to 10 days to file charges, he said.

Kurmasheva is the second U.S. journalist to be detained in Russia this year. Wall Street Journal reporter Evan Gershkovich was detained in March,

while on a reporting trip. He is being held on an allegation of espionage that he, the Journal and the U.S. government vehemently deny.

Kremlin spokesman Dmitry Peskov on Friday said Russia is taking appropriate measures against those who violate the law. Russian law requires that individuals and organizations receiving funding from abroad and those deemed to be engaged in certain activities, such as gathering and distributing information about the Russian military, register as foreign agents.

RFE/RL receives funding from the U.S. government. The Tatar-Bashkir language service, for which Kurmasheva is an editor, and eight other branches were designated as foreign agents in 2017, said an RFE/RL spokeswoman. Conviction on a charge of failing to register as a foreign agent carries up to five years in prison.

According to RFE/RL, Kurmasheva, who has two children, traveled to Russia for a family emergency on May 20. She was temporarily detained while waiting for her return flight on June 2.

Russia's Foreign Ministry, which issues journalist accreditation, didn't respond to a request for comment on Kurmasheva's case.



Alsu Kurmasheva, who has U.S. and Russian citizenship, will be held in pretrial detention until at least Dec. 5.

BUSINESS & FINANCE

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THE WALL STREET JOURNAL.

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UAW Strike Hits Big Stellantis Plant

Walkout sends 6,800 workers to picket lines at key pickup-truck factory

By RYAN FELTON

The United Auto Workers on Monday expanded its continuing strike against Detroit's car companies by shutting down a pickup-truck plant, a surprise action that hit Chrysler-parent Stellantis's largest U.S. factory.

The 6,800-worker plant, located in Sterling Heights, Mich., in suburban Detroit, makes the Ram 1500 pickup truck, among the automaker's most profitable vehicles. The walkout brings the total number of UAW-represented workers on strike at the Detroit automakers, including Ford Motor and General Motors, to more than 40,000, the UAW said.

"We are outraged that the UAW has chosen to expand its strike action against Stellantis," the company said in a

statement Monday.

Stellantis presented a new offer to the union on Thursday that included a 23% wage increase over the life of the contract and a nearly 50% bump in its contribution to employee retirement plans, along with added job security, the company said. "We left the bargaining table expecting a counterproposal, but have been waiting for one ever since."

The decision to target the Stellantis facility comes days after UAW President Shawn Fain told members that the car

companies have made some progress in meeting the union's demands, but he still believes the UAW can get more. He said both GM and Ford also are offering 23% wage increases.

Stellantis, which has the highest revenue and profit among the automakers, lags behind both Ford and GM in addressing the UAW's demands, the union said Monday. The global car maker's proposals for cost-of-living adjustments, pay for temporary workers and the number of

years it is offering to have workers earn a top wage in a new contract were "the worst proposal on the table," the UAW said in a statement.

The 88-year-old union is in its sixth week of a strike in which for the first time the UAW has simultaneously targeted all three car companies at once. Rather than call an all-out strike at one company, the UAW has been gradually expanding the strike at targeted facilities, a strategy aimed at keeping companies

Please turn to page B2

Roche Sets \$7 Billion Deal With Roivant

By ADRIÀ CALATAYUD

Roche Holding has agreed to buy the developer of a bowel-disease treatment from Roivant Sciences, a company started by Republican presidential candidate Vivek Ramaswamy, and Pfizer in a deal worth more than \$7 billion.

The Swiss pharmaceutical giant said Monday it would pay \$7.1 billion upfront for Telavant Holdings, and make a near-term milestone payment of \$150 million. Roche said the deal gives it rights to commercialize Telavant's RVT-3101 drug candidate, which has shown promise for inflammatory-bowel disease and could have potential in other indications, in the U.S. and Japan.

The deal is the latest example of a big pharma company turning to the deal table to bolster its pipeline of autoimmune drugs. Merck earlier this year agreed to pay more than \$10 billion to buy Promethis Biosciences, which is developing a drug for bowel disease that would compete with Telavant's candidate.

The Wall Street Journal reported in July that Roivant, which was started by Ramaswamy in 2014, was in talks to sell the bowel-disease drug to Roche.

Roivant has focused on acquiring drugs stalled in development, creating subsidiaries to develop and commercialize them. Ramaswamy said in February he would step down from Roivant's board to focus on his presidential campaign.

Roivant formed Telavant with Pfizer last year to develop and commercialize RVT-3101, with Roivant owning a 75% stake and Pfizer holding 25%.

In January, Roivant reported results from a Phase 2 clinical trial for RVT-3101 in ulcerative colitis, one of the two main types of inflammatory bowel diseases, that showed meaningful efficacy and a favorable safety profile.

Roche's pharma chief, Teresa Graham, said in an interview the company planned to move the drug quickly into Phase 3 trials once the deal closes.

"There is very large unmet medical need and significant commercial opportunity" in inflammatory bowel disease, Graham said, adding that more than eight million people globally suffer from the condition.

Stock-Trading Amateurs Come Up Winners

By HANNAH MIAO

Jeff Beckman knew he wouldn't get rich working at a nonprofit, so he invested in the stock market.

For nearly four decades, Beckman has steadily contributed to an employer-sponsored retirement plan allocated almost entirely to stock funds. He also bought shares of Apple, Berkshire Hathaway and Meta Platforms through a brokerage account. Now, the 63-year-old's portfolio is worth roughly \$1 million—and he has no plans to sell his stocks or rotate toward safer assets, such as bonds, anytime soon.

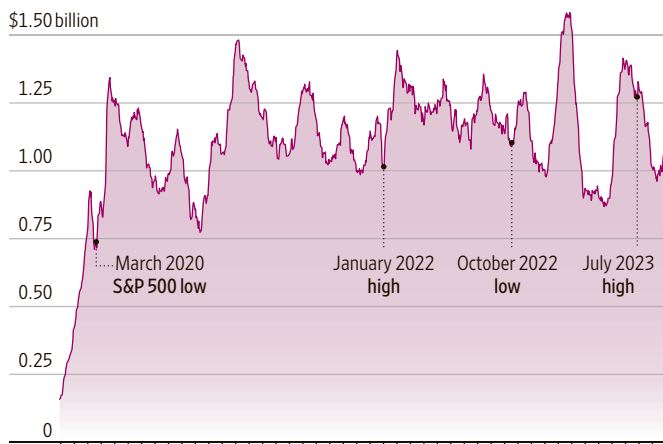
"If you're too conservative in your approach, you may outlive your savings," said Beckman, a nonprofit executive in Omaha, Neb.

Wall Street has long derided amateur investors as unsophisticated market participants, prone to buying high and selling low. But the typical individual investor's long-term mindset and penchant for risk-taking has proved fruitful in the technology-driven market of the past decade, defying the "dumb money" caricature.

The average individual-investor stock portfolio has risen about 150% since the beginning of 2014, according to investment research firm Vanda Research, which began tracking the data nine years ago. That beats the S&P 500's roughly 140% gain during the same period. Vanda calculates the average portfolio by analyzing individual investors' brokerage-account trading activity in U.S.-listed single stocks. The firm's analysis excludes purchases of exchange-traded funds and mutual funds, along with transactions made through retirement accounts.

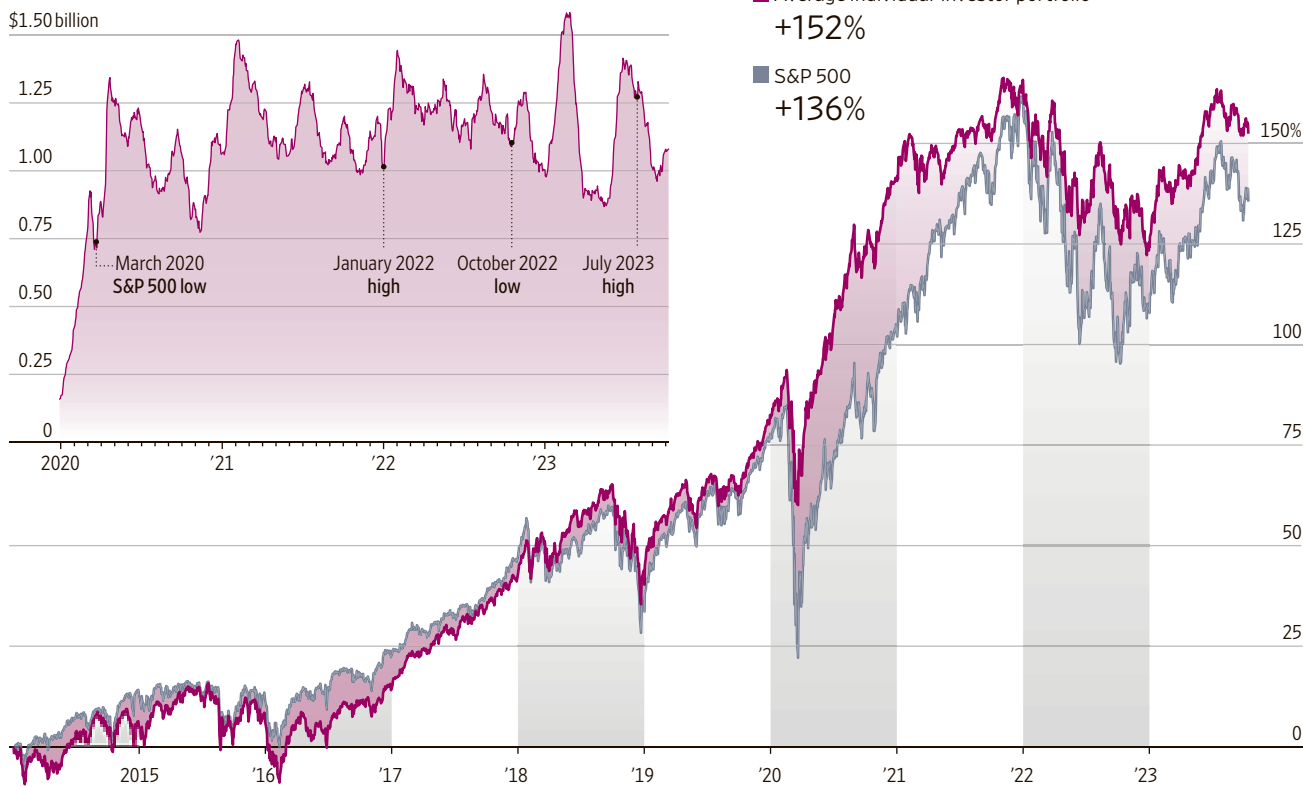
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Individual investors' net purchases of U.S.-listed stocks and ETFs, 21-day moving average*

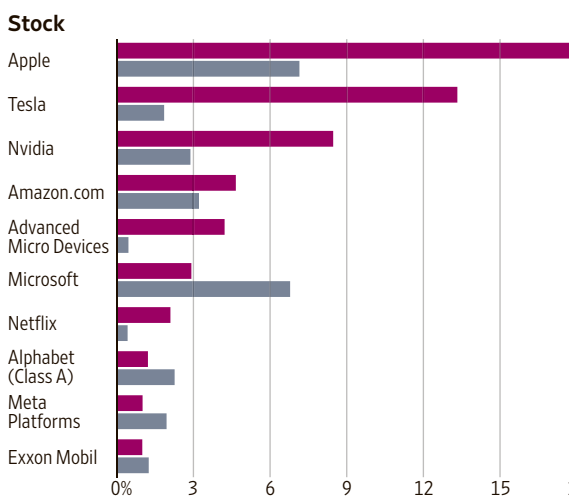


Price performance, Jan. 2, 2014-Oct. 18, 2023

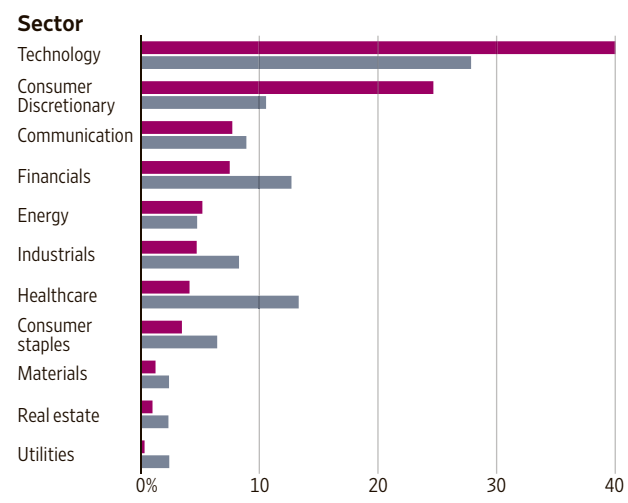
Average individual-investor portfolio* +152%
S&P 500 +136%



Stock and sector weighting as of Oct. 18, 2023



Average individual-investor portfolio* S&P 500



*Data through Oct. 10. †Based on individual investors' brokerage-account trading activity in U.S.-listed single stocks. Sources: Vanda Research (Individual investors' net purchases, average individual-investor portfolio); S&P Dow Jones Indices; FactSet (S&P 500)

WPP Fires Detained Staffer of China Unit

By PATIENCE HAGGIN

WPP said it terminated the executive currently detained in China on charges of bribery and is conducting its own investigation into the matter.

On Saturday, the Shanghai police's economic crimes investigation division said that three suspects at an unnamed advertising company had been detained on criminal charges of accepting bribes as nonpublic officials. That statement referred to one current and two former employees of GroupM, an ad-buying unit of WPP, The Wall Street Journal previously reported.

"We cannot comment on the

details of an active police investigation," WPP said in a statement Monday. "However, we are terminating the executive's employment with the company."

WPP also said GroupM was suspending trade with any external organization it understood to be part of the police inquiries.

The detainee who was still employed by WPP at the time of his detention is Rycan Di, the Journal previously reported. The two other executives had already parted ways with GroupM before the authorities raided GroupM's office in Shanghai last week.

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AUTOS

Justice Department subpoenas Tesla for information on its autopilot system. **B2**

APPAREL

Kim Kardashian's shapewear empire is expanding to include items for men. **B3**

Smaller Banks Try Shrinking Their Way Back to Health

By GINA HEEB

Regional banks have shelled out more and more to depositors to get them to stick around. For many, that still hasn't been enough.

After an ugly third quarter, banks rolled out plans last week to try to shrink themselves back to health. Profits dropped by double digits from a year earlier at a number of them, including 44% at KeyCorp, 32% at Citizens Financial and 28% at Truist Financial.

KeyCorp said it would become a "smaller, simpler company." PNC Financial disclosed

that it would lay off thousands of employees. Truist, which sold its student loan portfolio this summer, said it would downsize other books with lower returns. Citizens recently said that it would exit the auto loan business and continue to scale back its mortgage business.

"When deposits are more dear and they're more costly, then you say, well, I really don't want to be funding that," Citizens Chief Executive Bruce Van Saun told The Wall Street Journal.

Investors are getting nervous. Citizens shares slid nearly 6% last Wednesday after

it reported earnings, and U.S. Bancorp shares were down more than 4%. Shares of Zions Bancorp sank almost 10% on Thursday. Regions Financial slid more than 12% on Friday.

Megabanks also have had to pay more for deposits, but so far it hasn't been nearly as painful for them. JPMorgan Chase, Bank of America, Wells Fargo and Citigroup collectively earned about \$30 billion in the third quarter, a 27% increase from a year earlier. They have the cushion of big operations in businesses such as trading, investment banking and wealth management.

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Smaller Banks Try Shrinking

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The Federal Reserve has raised interest rates 11 times since last year in an attempt to curb inflation. Higher rates are usually a boon for banks since they can charge more for loans. But the pace of the rate increases, the fastest in decades, has made it more expensive than expected for banks to get and keep deposits. High rates also drove down the value of bonds that banks bought when rates were low.

"Bank balance sheets weren't built for that," said Tom Michaud, chief executive at Keefe, Bruyette & Woods, a unit of the investment bank Stifel Financial. Banks will "have to have a franchise that can operate in this environment," he said, "and if they don't, they're likely to find a partner."

Some of the smaller ones are already merging. There were 34 bank deals announced in the third quarter, according to S&P Global Market Intelligence, with a collective value of nearly \$3 billion. The value of bank deals announced in the first and second quarters combined was about \$630 million.

The banks say it could be worse. They are still making money, just much less of it. Many said their deposit levels were more stable in the third quarter, at least compared with the chaotic first quarter when a string of bank failures led many customers to flee for the perceived safety of the megabanks.

Banks paid peanuts for deposits for a long time, includ-

ing in recent years when customers had tons of extra cash from the pandemic. Now they have to compete with Treasuries and other investments that can yield 5%, or else find other ways to fund themselves.

The average rate many of the big regional banks paid on deposits rose to around 2% or higher in the third quarter, from next to nothing a year earlier. Some have had to lean on even more costly alternatives, such as deposits brokered through a third party or loans from the Fed or the Federal Home Loan Bank system.

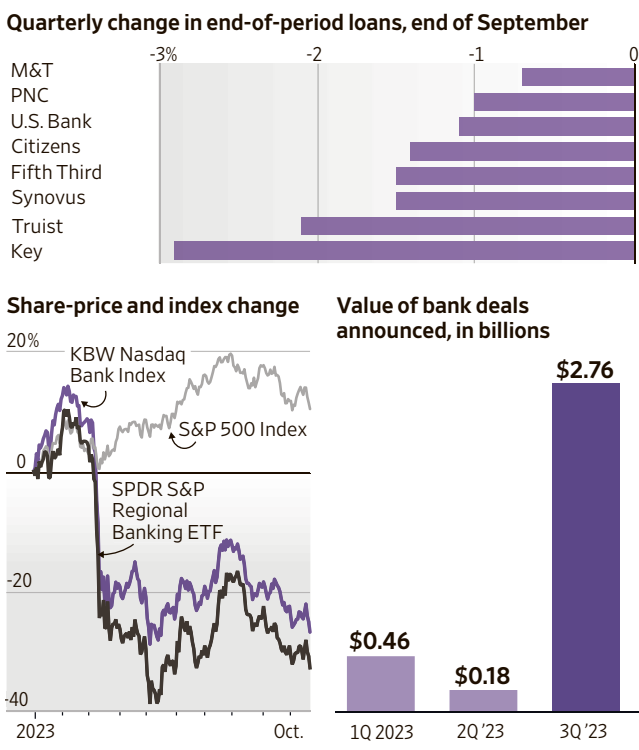
Interest expenses jumped roughly 300% from a year earlier at U.S. Bank, PNC, Truist and KeyCorp.

Americans continue to spend, borrow and pay back loans. But there are signs of potential trouble ahead. Consumers are still strained by high costs. A surge in interest rates has priced many out of the market for homes and cars. Lower-income households have spent much of what they were able to save during the pandemic.

"If you look underneath the aggregate, that suggests not all U.S. consumers are as healthy as they appear," said Tim Spence, CEO of **Fifth Third Bancorp**. "I am still worried."

Consumer books aren't the only concern: Regional banks hold large concentrations of commercial real estate, including office buildings that have come under pressure since the pandemic.

M&T Bank said net charge-offs rose by more than 50% to \$96 million in the third quarter, driven by three large office buildings in Washington, D.C., Boston and Connecticut and a healthcare provider with multiple properties in New York state and Pennsylvania. The bank said it could charge off more from that portfolio in the fourth quarter.



Sources: the companies, Autonomous Research (quarterly change loans); FactSet (share price); S&P Global Market Intelligence (bank deals)

BUSINESS & FINANCE

Tesla Subpoenaed Over Autopilot

By DENNY JACOB

The Justice Department has requested additional information, including through subpoenas, from **Tesla** as it investigates the electric-vehicle manufacturer's autopilot technology.

The Justice Department also requested information through subpoenas from Tesla regarding matters involving personal benefits, related parties, vehicle range and personnel decisions, the company disclosed in a regulatory filing on Monday.

The Wall Street Journal reported in October 2022 that the Securities and Exchange Commission and federal prosecutors in Washington and San Francisco were investigating whether Tesla misled consumers and investors about the performance of its advanced driver-assistance system known as Autopilot. The probe comes after a series of crashes involving the feature.

In September, the Journal reported that federal prosecutors are scrutinizing personal



The Justice Department also requested information on personal benefits and vehicle range.

benefits Tesla may have provided Elon Musk since 2017 in a criminal investigation examining issues including a proposed house for the chief executive.

Tesla didn't respond to a request for comment.

The Austin, Texas-based EV manufacturer said on Monday

that to its knowledge, no government agency in any continuing investigation has concluded any wrongdoing occurred.



The 6,800-worker plant, located in Sterling Heights, Mich., in suburban Detroit, produces the Ram 1500 pickup truck.

Strike Hits Stellantis U.S. Plant

Continued from page B1

off balance while also preserving a fund to pay workers on the picket line.

Workers made about 221,500 pickups at the Sterling Heights facility in the first nine months of the year, around 27% of Stellantis's overall U.S. output, according to data from research firm Wards Intelligence. The company also makes Ram pickups at another suburban Detroit factory as well as at a plant in Mexico.

Stellantis was formed in January 2021 through the merger of Fiat Chrysler Automobiles and France's PSA Group, making it the fourth largest in the world by sales. Unlike Ford and GM, which generate nearly all of their profits in North America, Stel-

lantis has a strong presence in South America and established European brands such as Peugeot and Opel.

The automaker's operating-profit margin for the North American region in 2022 was 16.4% compared with 10.1% for GM and 8.4% for Ford.

Stellantis Chief Executive Carlos Tavares also has a reputation in the auto industry as a cost-cutter who has turned around money-losing brands in France and Germany, in part by winning concessions from Europe's tough union heads.

Ram is one of the company's main profit drivers in North America. At the end of September, Ram had 71 days of unsold supply on or en route to dealership lots, a measure of how much stock is available if the company's plants were immediately shut down, according to data from Motor Intelligence, an industry-research firm.

Fain's fiery rhetoric at the UAW has been a source of consternation among Detroit's top car executives. Last week, Ford Executive Chairman Bill Ford

called for an end to the "acrimonious" round of talks, saying the escalating strike threatens the industry's future. GM Chief Executive Mary Barra has accused the UAW of not having real intent of getting a deal finished.

Tavares hasn't spoken on the talks since before the strike began, deferring to his North American team.

Fain dismissed the executives' concerns on Friday, saying there would be consequences if the companies don't continue to move closer to the UAW's demands.

The union leader said he wanted the automakers to come up more on wages. Until

recently, Ford was the only one of the three companies to have a 23% wage increase on the table, while the other two had been at 20%. The companies began talks in the summer with offers of around 10%.

Fain also said he wanted the carmakers to move temporary workers to full-time status faster, while also boosting their matching contributions to employee retiree plans.

The companies have agreed to eliminate certain wage tiers that pay workers in some areas at lower rates, and they would cut the time it takes to reach the top wage roughly in half, from the current period of eight years.

WPP Fires Detained Employee

Continued from page B1

Di didn't respond to a request for comment Monday.

WPP said it had no further comment beyond its statement.

The detentions come as concerns grow broadly among foreign companies in China over police raids, detentions, moves to block employees from leaving the country and various investigations involving foreign firms. The worries have been partly driven by China's updated anti-espionage law enacted in July.

All three former WPP employees detained in China are Chinese nationals, according to a person familiar with the matter.

The government hasn't invoked espionage in the GroupM situation, but described the case as one concerning com-

mercial bribery.

This year, Chinese authorities have raided the offices of due-diligence firm **Mintz Group** as well as expert-network consulting firm **Capvison**, which worked closely with foreign consulting firms in China.

Mintz Group said at the time that five Chinese nationals employed in its Beijing office were detained without notice, that the office is closed and that its priority is the "safety and well-being of our colleagues in China," where it has retained legal counsel. Capvison said earlier this month that it overhauled its internal operating systems to comply with China's national-security laws.

GroupM is the world's largest ad-buying firm and was responsible for purchasing roughly \$63.9 billion in advertising on behalf of advertisers last year, according to research firm Convergence. The agency also is the largest ad buyer in the Asia-Pacific region. It controlled about \$22.5 billion in ad dollars in the region last year, Convergence data show.

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BUSINESS NEWS

SpaceX Lands Deal for Key Europe Mission

Company to launch up to four Galileo satellites into orbit as rivals face delays

By MATTHEW DALTON
AND MICAH MAIDENBERG

PARIS—SpaceX has signed a deal to launch up to four of Europe's flagship navigation and secure communications satellites into orbit, reinforcing the Elon Musk-led company's growing foothold in the region as local rivals struggle to get rockets off the ground.

SpaceX and the European Space Agency recently signed an agreement for two launches next year, each carrying two Galileo satellites, said Javier Benedicto, the agency's director of navigation. The European Commission, the European Union's executive arm, along with EU member states, must still give final approval for the deal. That is likely to happen before the end of the year, officials said.

The agreement calls for the satellites to be launched on SpaceX's Falcon 9 rocket from the U.S., Benedicto said. SpaceX didn't respond to a request for comment. A spokesman for the European Commission said it is "taking all necessary steps to ensure that the Galileo constellation continues to provide outstanding services in the coming months



Elon Musk's company blasted off Europe's Euclid space telescope on a Falcon 9 rocket in July.

and years."

European officials have been reluctant to use SpaceX for Galileo satellites, saying the bloc shouldn't depend on a U.S. company, launching critical infrastructure into space. But delays in Europe's Ariane rocket program and a decision not to use Russian rockets because of the war in Ukraine have left the continent with no other choice, officials say.

Galileo satellites are strategically important for the EU. They power the bloc's satellite-navigation system, giving it autonomy from the U.S.

Global Positioning System and China. They also handle encrypted communications used by European governments.

The SpaceX Galileo contract is the first time Musk's company has been tapped to launch a satellite by EU institutions containing classified equipment. It is also the first time Galileo satellites would be launched from outside EU territory since test devices were launched from Kazakhstan 15 years ago; the rockets normally lift off from French Guiana. That has prompted the U.S. and the EU to start talks on an agreement to protect classified information in

the satellites, officials said.

Musk himself has had an up-and-down relationship with European governments this year. In May, he toured the continent, meeting with French President Emmanuel Macron and other leaders. Musk said afterward that Tesla would likely make "significant investments" in France.

But the entrepreneur has also clashed with the EU over posts on his social-media platform X, formerly known as Twitter, that officials say violate the bloc's new rules against misinformation and harmful content. This month,

Thierry Breton, the EU commissioner charged with enforcing the rules, said X was being used to disseminate violent and misleading content about the battle between Israel and Hamas. Musk asked him to identify the posts publicly. Breton is also the commissioner who is leading the decision on whether to use SpaceX.

Hawthorne, Calif.-based SpaceX has been gaining ground in Europe as local rivals confront various challenges.

After Russia invaded Ukraine last year, French launch operator Arianespace stopped using Russian Soyuz rockets. Technical challenges, which aren't uncommon during rocket developments, have delayed a forthcoming rocket, Ariane 6, that Arianespace plans to use. Its predecessor, Ariane 5, was retired this year, leaving Europe without a larger rocket.

A different European rocket, Vega C, failed during a launch last December, leading to the loss of two Airbus satellites. Separately, newer would-be launch providers, including the Spanish company PLD Space and Rocket Factory Augsburg in Germany, are still developing their technology.

Against this backdrop, Europe's space agency has turned to SpaceX, which has established itself as the dominant rocket company.

SpaceX blasted off Europe's Euclid telescope on a Falcon 9 rocket in July and is set next year to launch a European spacecraft that will survey an asteroid. Officials also have moved to launch the Earth-CARE mission, which aims to study clouds, aerosols and radiation, with SpaceX. All three flights were originally slated for rockets operated by Arianespace.

Galileo satellites already in orbit aren't at risk of failure in the near future, but launching additional ones would shore up the network against unexpected malfunctions, Benedicto said. "It is a matter of robustness," he said. "We have 10 satellites that are ready to be launched, and those satellites should be in space, not on the ground."

Still, Benedicto said he didn't think that SpaceX would be used to launch additional Galileo satellites after the first four.

That may depend on the development of Ariane 6, which was meant to blast off eight of the Galileo satellites in 2023 and the following two years. The ESA recently said that it and the companies working on the rocket are still doing so, with an inaugural launch expected in 2024.

When it is ready, Ariane 6 is set to also handle commercial missions, including a series of launches for Amazon.com's Project Kuiper satellite-internet business.

Kardashian Extends Shapewear Line Skims to Men

By CHAVIE LIEBER

Kim Kardashian's shapewear empire is stretching toward a new kind of customer.

This week Skims is adding men's boxers, briefs, T-shirts, tank tops and leggings to its online store, building on its popular collection of nude-toned bras, bodysuits and underwear for women.

Kardashian said she sees an opportunity to bring higher-end products to a men's category dominated by mass brands. "There really is a niche in the marketplace for our designs, our color tones and our materials," she said in an interview.

Numerous upstart companies, including Skims, have sought to grab market share from giants like Victoria's Secret in recent years with products that promised a better fit and more comfort. Skims co-founder and CEO Jens Grede believes men's underwear is ripe for that sort of disruption.

"The men's category as a whole, has really been a race to the bottom, of multi-packs and discounts," said Jens Grede. "We're trying to excel and show men that there's just a different level of comfort and

performance you can have in your first layer." Pieces will range in price from \$16 to \$54, and packs from \$42 to \$98. The items will feature cotton, stretch and compression fabrics. Sizes run from XS to 5X.

Kristen Classi-Zummo, an apparel-industry analyst at market-research firm Circana, said men's underwear has become a competitive category, with \$5.7 billion in sales over the last 12 months.

"Traditional giants like Hanes and Fruit of the Loom

continue to hold their ground, but the landscape is evolving," said Classi-Zummo. "Active brands, private labels, and direct-to-consumer players are fiercely competing for a spot in every man's underwear drawer." The Skims men's line features shape-hugging underwear and minimalist athleisure that hews to a neutral palette of brown, khaki, gray and black.

To attract male customers, Skims is relying on star ath-

letes. The brand has tapped Brazilian soccer star Neymar, NBA player Shai Gilgeous-Alexander of the Oklahoma City Thunder and NFL defensive end Nick Bosa of the San Francisco 49ers for its first ad campaign.

"If you really want to communicate with hundreds of thousands of men, sports is the platform to do it," Grede said.

Kardashian said she hoped the athletes will help Skims show that its pieces can fit a range of body types. "They're all just individually so great in their fields, but also all three are so different," she said.

Skims launched in 2019 with lingerie and compression shapewear available in a range of nude tones. Today the brand has a \$4 billion valuation.

Grede said the brand is projected to reach \$750 million in net sales this year. Grede didn't share a timeline for an IPO but said "I believe Skims deserves to be a public company when the time is right."

Royal Philips Raises Guidance After Logging Quarterly Profit

By IAN WALKER

Royal Philips raised its full-year guidance after swinging to net profit for the third quarter of the year on higher sales, with growth in all segments and geographies.

The Dutch health-technology company said Monday that it now expects to report a rise of 6% to 7% in comparable sales this year compared with previous guidance for mid-single-digit comparable growth.

Adjusted earnings before interest, taxes and amortization margin are seen at 10% to 11% compared with previous guidance at the upper end of the high single-digit range for 2023.

Net profit attributable to shareholders for the quarter was €88 million, or about \$107.1 million, compared with a loss of €1.33 billion for the comparable period a year earlier and a company-compiled consensus profit of €82 million.

Sales rose to €4.47 billion compared with €4.31 billion, and a consensus of €4.415 billion. Sales were up 11% on a comparable basis. The diagnosis-and-treatment and connected-care segments recorded double-digit growth,



Philips expects comparable sales to grow 6% to 7% this year.

and the personal-health segment logged high-single-digit growth, Philips said.

Adjusted earnings before interest, taxes and amortization—a company-preferred metric which strips out exceptional and other one-off items—was €457 million compared with €209 million and a consensus of €389 million.

Ebita margin was 10.2% compared with 4.8%, mainly driven by increased sales, pricing and productivity measures.

The company said its restructuring and productivity plans are on track with total

savings of €258 million in the quarter.

"Our improved operational performance was driven by our focus on execution to enhance patient safety and quality, strengthen our supply chain reliability and establish a simplified operating model," Chief Executive Roy Jakobs said.

He added that completing the Philips respirator recall remains the board's highest priority, with the remediation of the sleep-therapy devices almost complete and remediation of the ventilators continuing.

Star athletes will help pitch the higher-end underwear and T-shirts.

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Intuit Looks to Humans to Rein In AI

Software maker hires content moderators to keep bad behavior off its systems

BY BELLE LIN

Businesses are running up against a challenge social-media platforms have long wrestled with: preventing generative artificial intelligence from being hijacked for malicious ends.

Taking a page from those platforms, business-technology leaders are turning to software-based “guardrails” and human moderators to keep its use within prescribed bounds.

Intuit, the Mountain View,

Calif., maker of TurboTax software, recently released a generative AI-based assistant that offers customers financial recommendations. Intuit Assist, which is available to a limited number of users, relies on large language models trained on internet data and models fine-tuned with Intuit’s own data.

The company is planning to build a staff of eight full-time moderators to review what goes in and out of the large language model-powered system, including helping prevent employees from leaking sensitive company data, said Atticus Tysen, chief information security officer.

“As we go into trying to make really meaningful, specific answers around financials, we just don’t know how

well these models are going to do,” Tysen said. “So it was important to us that we built a human into the loop.”

AI models like OpenAI’s GPT-4 are trained on vast amounts of internet content. Given the right prompts, a large language model can generate reams of toxic content inspired by the Web’s darkest corners. That means content moderation needs to happen at the source—when AI models are trained—and on the outputs they churn out.

Intuit’s homegrown content-moderation system, which is in its early stages, uses a separate large language model to automatically flag what it considers objectionable content, like profanity, Tysen said. For instance, a customer asking questions

unrelated to financial guidance, or trying to engineer a prompt injection attack, will be automatically blocked by the system, he said. Those attacks could include tricking a chatbot into revealing customer data or how it works.

Human moderators will then be alerted to review the text and can send it to the model-building team—improving the system’s ability to block or pick up on harmful content. Intuit’s customers will be able to notify the company if they believe their prompts were wrongly flagged and if they think the AI assistant has generated something inappropriate.

While there aren’t yet firms that specialize in AI content moderation, Intuit is supple-

menting its staff with contractors trained in moderating social-media posts. Like so-called prompt engineers, AI content moderators could become part of a category of new job opportunities created by AI.

Intuit’s goal is to let its moderation AI model do the bulk of the content review for its AI assistant, Tysen said, lessening the amount of toxic content to which humans are exposed. But for now, he said, generative AI isn’t good enough to replace human reviewers.

Watch a Video



Scan here to see an interview with Vinod Khosla on the tech economy.

James, Manning Team Up On Series

BY JESSICA TOONKEL AND ISABELLA SIMONETTI

Two of the biggest legends in sports, LeBron James and Peyton Manning, are looking to join forces in the entertainment world.

James’s entertainment company, SpringHill, is in talks with Manning’s Omaha Productions to create a show—modeled on the hit Netflix series “Quarterback”—that would follow the lives of professional basketball players, according to people familiar with the situation.

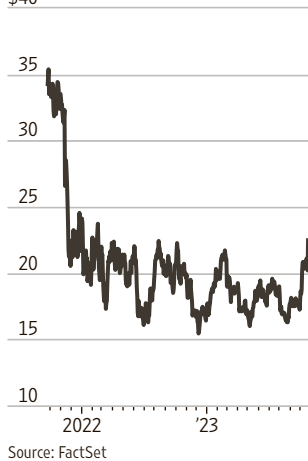
Higher Ground Productions, the production company of former President Barack Obama and former first lady Michelle Obama, is involved in the discussions, as is the National Basketball Association. The basketball show is expected to appear on Netflix, according to some of the people.

Omaha’s “Quarterback” followed three NFL quarterbacks during the 2022-2023 season. Manning, a former quarterback and two-time Super Bowl winner, started his media company in 2020.

Among its other programming is “Monday Night Football With Peyton and Eli,” an alternative broadcast primarily on ESPN2 that features Manning and his younger brother.

Vista Equity Agrees to \$4 Billion Buyout of EngageSmart

EngageSmart’s share price



BY LAURA COOPER AND BEN DUMMETT

Vista Equity Partners struck a \$4 billion deal Monday to acquire business-software company EngageSmart, a sizable buyout at a time when many private-equity firms are sitting on the sidelines.

Vista is offering shareholders in the customer-engagement and payments-software specialist \$23 a share.

EngageSmart stock jumped more than 10% in premarket trading to trade near the bid price. It closed at \$22.60, up 12% on Monday.

Based in Braintree, Mass.,

EngageSmart develops cloud-based software used by clinicians to manage their practices. It offers electronic-invoice technology that helps governments, utilities and financial-services firms bill clients more efficiently. Nonprofits and other organizations that rely on donations, meanwhile, use the company’s products to bolster their fundraising efforts, its website says.

The New York-listed software developer is controlled by General Atlantic, another investment firm. Vista is buying about 65% of EngageSmart, while General Atlantic will retain the rest.

EngageSmart services more than 100,000 customers, mostly among small and midsize businesses, and generated a profit of \$20.6 million last year, its latest annual report said. Vista manages more than \$100 billion of assets, focused on enterprise software, data and other technology companies. The take-private would be one in a string of recent deals for Vista. In February, the firm completed the \$4.6 billion purchase of cybersecurity firm KnowBe4, and more recently closed the \$2.6 billion acquisition of software company Duck Creek. The Austin, Texas, firm recently sold its

portfolio company Apptio to IBM for \$4.6 billion.

Deal making has suffered this year amid political and market volatility. Private-equity buyers have been hit hard because higher interest rates have made it more expensive to fund deals. Leveraged buyouts are down almost 40% in the U.S. this year, according to Dealogic, while mergers and acquisitions overall have dropped some 20%.

Vista’s bet on EngageSmart, along with several other deal announcements to start the week, suggests buyers and sellers may be growing more willing to agree on sale prices.

BUSINESS & FINANCE

Food Earnings Show Buyers Want More for Their Money

BY HARDIKA SINGH

U.S. consumer spending remains resilient, but third-quarter earnings reports from food-focused companies indicate that some customers are trying to maintain their eating habits without paying higher prices. Here’s a roundup of some examples:

◆ **They’re passing up delivery to pick up pizzas.**

Domino’s said its carryout business, for which customers generally don’t pay fees or tips, grew in its latest quarter, while delivery business fell.

To support delivery volumes, the company has reversed a long-held stance against working with food-delivery companies: It plans to launch a partnership with Uber Eats by the end of the year.

Domino’s also recently launched an “emergency pizza” promotion—customers who buy a pizza can get a free second pizza at another time. The company also lowered the threshold for earning and redeeming loyalty-program rewards.

◆ **They are trying to make more meals stretch further.**

Conagra, which owns brands including Birds Eye vegetables and Chef Boyardee canned pasta, said shoppers have turned toward more hands-on food prep from convenience-oriented items—and from meals for one to meals for many, even if not everyone will be eating the same meal together.

Similarly, McCormick said value-minded shoppers are purchasing larger containers of spices and flavorings at a time—though the purchase rate is just as fast as it was

with smaller sizes.

“These short-term behavior shifts act as a sort of cheat code to help these consumers spend within their means,” said Conagra’s Chief Executive Officer Sean Connolly.

◆ **They’re shifting to quick-serve chains—but they aren’t holding the fries.**

Lamb Weston, the Idaho-based frozen potato seller, said there is higher traffic at quick-service restaurants compared with full-service restaurants, since the latter is usually more expensive.

Though the company has raised prices recently, America’s “fry attachment rate”—the measure at which consumers add fries to their order—remains above prepandemic levels.

◆ **They’re looking to snack more cheaply, which can mean eating less.**

PepsiCo, seller of Gatorade and Frito-Lay chips, said sales at convenience stores and food-service locations—places which are more vulnerable to pullback from economic pain—have remained robust.

But there are signs of trouble brewing. Chief Financial Officer Hugh Johnston said he was cautious on consumer spending ahead, as some consumers were shifting to cheaper items and smaller packs.

* * *

More food-oriented companies are releasing their latest quarterly results in the coming days and weeks. Beverage company Coca-Cola’s results are due Tuesday and chocolate maker Hershey and burrito chain Chipotle are reporting their results on Thursday.



Apple, along with Tesla and Nvidia, make up about 40% of the average individual’s stock portfolio, according to Vanda Research.

Individual Investors Win Out

Continued from page B1

counts or investment advisers. The typical small investor holds an outside position in megacap tech companies. Apple, Tesla and Nvidia alone make up about 40% of the average individual’s stock portfolio, according to Vanda. Although big tech stocks plunged last year, those investments have dominated the market for most of the past decade and have helped fuel the S&P 500’s 10% advance this year.

Apple shares have surged nearly 800% since 2014, while Tesla has soared about 2,000%. Nvidia is up more than 10,000%. Those price returns adjust for stock splits.

Arash Abbasi, 41, started investing in stocks when he got his green card about five years ago. His top holdings are Alphabet, Amazon.com, Apple, Meta Platforms and Microsoft. An artificial-intelligence scientist for a biotech company, Abbasi is no stranger to technology. But as a self-proclaimed amateur investor, he isn’t worried about going all in on tech stocks.

“I’d rather take the risk and go down and up than stay flat,” said Abbasi, who lives in Boston. “I always look long term.”

Online brokerage Robin-

hood Markets created an index tracking the 100 most popular stocks among its roughly 23 million users. The top investments in the index recently include several megacap tech stocks, as well as shares of companies such as Ford Motor, Walt Disney and, of course, meme stocks GameStop and AMC Entertainment Holdings.

Robinhood users tend to “invest in what they know and use,” according to Stephanie Guild, head of investment strategy at Robinhood and a JPMorgan Chase veteran of about two decades. “That’s really no different than generations before and no different than some of the famous investors out there.”

Warren Buffett, perhaps the most well-known investor of all time, preaches a similar strategy. He famously shunned tech companies and specifically ruled out investing in Apple before a deputy added a stake in the tech giant to Berkshire’s stock portfolio. After studying the company, Buffett decided he could understand Apple as a consumer company and traded in his flip phone for an iPhone. Now Apple is Berkshire’s biggest stockholding by far, worth more than \$177 billion at the end of June.

Most U.S. households that own stocks do so indirectly, such as through equity funds. About 58% of American fami-

lies have stockholdings, while about 21% of U.S. households directly own stocks, according to a 2022 Federal Reserve survey. Roughly half of American families have assets in retirement accounts.

One advantage small investors have over professionals is that they don’t have to worry about reporting performance to clients. That helps some individuals feel comfortable riding out market downturns.

“I don’t have to beat the S&P every quarter,” said John Cough, a 57-year-old lawyer in Springboro, Ohio, who invests in a 401(k) retirement plan and a Robinhood brokerage account. He bought Apple and Amazon last summer when those stocks were down.

Even professional money managers often have a hard time beating their benchmarks. Over the past decade, about 86% of all large-cap U.S. equity funds have underperformed the S&P 500, according to S&P Dow Jones Indices.

Everyday investors are known to buy the dip, piling into markets during weak periods. Many jumped into stocks in March 2020 when the market plunged at the onset of the Covid-19 pandemic, and rode the high as shares rebounded.

Of course, many newbie investors also got burned when the pandemic-era bull market

sputtered. Many day traders were left holding the bag when speculative bets came crashing back to earth. GameStop shares soared above \$480 intraday in January 2021 and are now just above \$13, equivalent to under \$54 before a stock split last year. AMC shares are down about 97% from their record after adjusting for a reverse stock split this year.

Trading activity among everyday investors keeps dropping from pandemic highs. At Charles Schwab, daily average trades fell to about 5.2 million in the third quarter, the lowest level since the company started incorporating data from TD Ameritrade, which it acquired in October 2020. Daily average trades among self-directed customers at Morgan Stanley, which owns E*Trade, more than halved from their peak in the first quarter of 2021.

Still, individuals’ net purchases of U.S.-listed stocks and exchange-traded funds remain well above prepandemic levels, according to Vanda. And many on Wall Street now pay attention to small investors as a key constituent behind stock-market moves.

Jully-Alma Taveras, a 34-year-old in the Bronx, credits social media and online resources for empowering everyday people to jump into stocks. A self-taught investor, Taveras founded online educational platform Investing Latina to help others learn about markets.

“Times are changing,” said Taveras. “We are becoming smarter.”



Pam maker Conagra says consumers have turned toward more hands-on food prep from convenience-oriented items.

#

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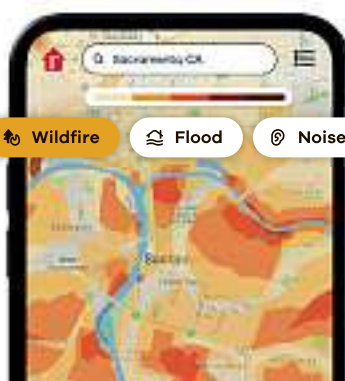
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COMMODITIES

Futures Contracts

Table of Metal & Petroleum Futures, Copper-High (COMX), Gold (COMX), Palladium (NYM), Platinum (NYM), Silver (COMX), Crude Oil, Light Sweet (NYM), NY Harbor ULSD (NYM), Gasoline-NY RBOB (NYM), Natural Gas (NYM).

Table of Agriculture Futures, Corn (CBT), Oats (CBT), Soybeans (CBT), Soybean Meal (CBT), Soybean Oil (CBT), Soybean Meal (CBT), Soybean Oil (CBT), Soybean Meal (CBT), Soybean Oil (CBT), Soybean Meal (CBT), Soybean Oil (CBT).

Table of Interest Rate Futures, Ultra Treasury Bonds (CBT), Treasury Bonds (CBT), Treasury Notes (CBT), 5 Yr. Treasury Notes (CBT), 2 Yr. Treasury Notes (CBT), 30 Day Federal Funds (CBT), Three-Month SOFR (CME).

Table of Currency Futures, Japanese Yen (CME), Canadian Dollar (CME), British Pound (CME), Swiss Franc (CME), Australian Dollar (CME), Mexican Peso (CME).

Table of Index Futures, Mini DJ Industrial Average (CBT), Mini S&P 500 (CME), Mini S&P Midcap 400 (CME), Mini Nasdaq 100 (CME), Mini Russell 2000 (CME), Mini Russell 1000 (CME), U.S. Dollar Index (ICE-US).

Table of Bonds, Broad Market Bloomberg Fixed Income Indices, U.S. Corporate Entities Bloomberg Fixed Income Indices, U.S. Agency Bloomberg Fixed Income Indices, High Yield Bonds ICE BofA, Global Government J.P. Morgan.

New Highs and Lows

The following explanations apply to the New York Stock Exchange, NYSE Arca, NYSE American and Nasdaq Stock Market...

Table of New Highs and Lows, listing various stocks and their 52-week high and low prices.

Table of Stock prices, listing various companies and their current stock prices.

Bonds | wsj.com/market-data/bonds/benchmarks

Tracking Bond Benchmarks

Table of Bond Benchmarks, comparing return on investment and spreads over Treasuries and yields paid to investors.

Mortgage-Backed Bloomberg Fixed Income Indices

Table of Mortgage-Backed Bonds, listing various indices and their performance metrics.

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NOTICE OF SALE

PLEASE TAKE NOTICE that on December 7, 2023 commencing at 10:00 a.m. Eastern Standard Time (the "Sale Date")...

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DEA

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PUBLIC NOTICES

NOTICE OF PUBLIC DISPOSITION OF COLLATERAL UNDER UNIFORM COMMERCIAL CODE, OCTOBER 23, 2023

PLEASE TAKE NOTICE THAT, pursuant to Section 9-610 of the UCC and certain loan documents, this is notice that Spaco Odyssey, Inc. (the "Lender") will conduct a public sale of the assets of LBRV, Inc. (the "Borrower")...

BANKRUPTCIES

UNITED STATES BANKRUPTCY COURT DISTRICT OF NEW JERSEY, In re: RITE AID CORPORATION, et al., Chapter 11, Case No. 23-18993 (MBK) (Jointly Administered)

NOTICE OF ENTRY OF AN ORDER ESTABLISHING A RECORD DATE FOR POTENTIAL NOTICE AND SELL-DOWN PROCEDURES FOR TRADING IN CERTAIN CLAIMS AGAINST THE DEBTORS' ESTATES, AND (II) GRANTING RELATED RELIEF TO: ALL ENTITIES (AS DEFINED BY SECTION 101(15) OF THE BANKRUPTCY CODE) THAT HOLD CLAIMS AGAINST THE DEBTORS.

PLEASE TAKE NOTICE that on October 15, 2023 (the "Petition Date"), the above-captioned debtors and debtors in possession (collectively, the "Debtors") filed a petition with the United States Bankruptcy Court for the District of New Jersey (the "Court") under chapter 11 of title 11 of the United States Code (the "Bankruptcy Code")...

PLEASE TAKE FURTHER NOTICE that on October 15, 2023, the Debtors filed the Debtors' Motion for Entry of an Order (i) Establishing a Record Date for Potential Notice and Sell-Down Procedures for Trading in Certain Claims Against the Debtors' Estates, and (ii) Granting Related Relief (Docket No. 138) (the "Record Date Order")...

PLEASE TAKE FURTHER NOTICE that pursuant to the Record Date Order, claimholders and potential purchasers of claims against the Debtors are hereby notified that claimholders that acquire claims after the Record Date in an amount that would entitle them to receive more than a 4.75 percent of the stock of the reorganized Debtors under the Debtors' plan of reorganization may be subject to a required sell-down of any claims purchased after the Record Date.

PLEASE TAKE FURTHER NOTICE that all persons or Entities that acquired debt claims against the Debtors after the Record Date and currently hold or come to hold such claims in such an

amount that the persons or Entities holding such claims would be entitled to receive more than 4.75 percent of the equity of the reorganized Debtors under the Debtors' plan of reorganization shall be required to identify themselves to the Debtors after the Court's approval of a corresponding motion.

PLEASE TAKE FURTHER NOTICE that upon the request of any person or entity, the Debtors' proposed claims and noticing agent, Kirkland & Ellis LLP, will provide a copy of the Record Date Order in a reasonable amount of time. Complete copies of the Motion and Record Date Order (including the exhibits attached thereto), are available via PACER on the Court's website at https://www.nj.uscourts.gov for a fee, or free of charge by accessing the Debtors' restructuring website at https://restructuring.ra.kroll.com/Releasid.

PLEASE TAKE FURTHER NOTICE that the entry of the Record Date Order shall in no way prejudice the rights of any party to oppose the entry of a Sell-Down Order, on any grounds, and that all parties' rights are expressly preserved hereby.

PLEASE TAKE FURTHER NOTICE that the requirements set forth in this notice are in addition to the requirements of applicable law and do not excuse compliance therewith.

The last four digits of Debtor Rite Aid Corporation's tax identification number are 4034. A complete list of the Debtors in these chapters 11 cases and each such Debtor's tax identification number may be obtained on the website of the Debtors' proposed claims and noticing agent at https://restructuring.ra.kroll.com/Releasid. The location of Debtor Rite Aid Corporation's principal place of business and the Debtors' service address in these chapters 11 cases is 1200 Interpied Avenue, 2nd Floor, Philadelphia, Pennsylvania 19112.

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Global Government Bonds: Mapping Yields

Table of Global Government Bonds, listing yields and spreads over U.S. Treasuries on benchmark two-year and 10-year government bonds in selected other countries.

Corporate Debt

Prices of firms' bonds reflect factors including investors' economic, sectoral and company-specific expectations

Investment-grade spreads that tightened the most...

Table of Corporate Debt, listing issuer, symbol, coupon, yield, maturity, and spread in basis points.

High-yield issues with the biggest price increases...

Table of High-yield Issues, listing issuer, symbol, coupon, yield, maturity, and spread in basis points.

...And spreads that widened the most

Table of Corporate Debt, listing issuer, symbol, coupon, yield, maturity, and spread in basis points.

...And with the biggest price decreases

Table of Corporate Debt, listing issuer, symbol, coupon, yield, maturity, and spread in basis points.

*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 2-spread. Note: Data are for the most active issue of bonds with maturities of two years or more

Source: MarketAxess

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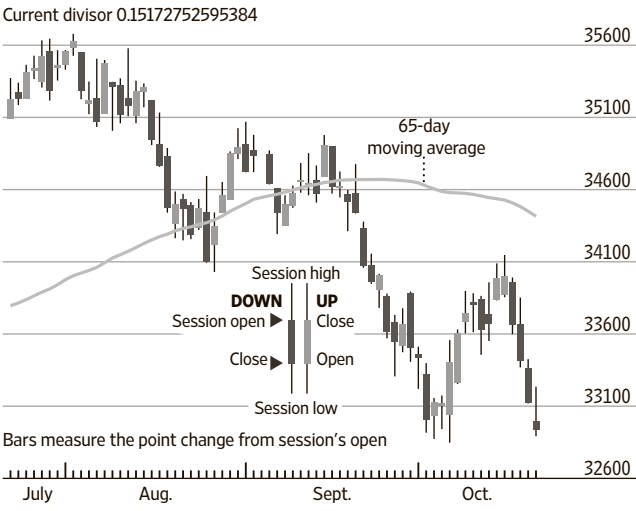


MARKETS DIGEST

EQUITIES

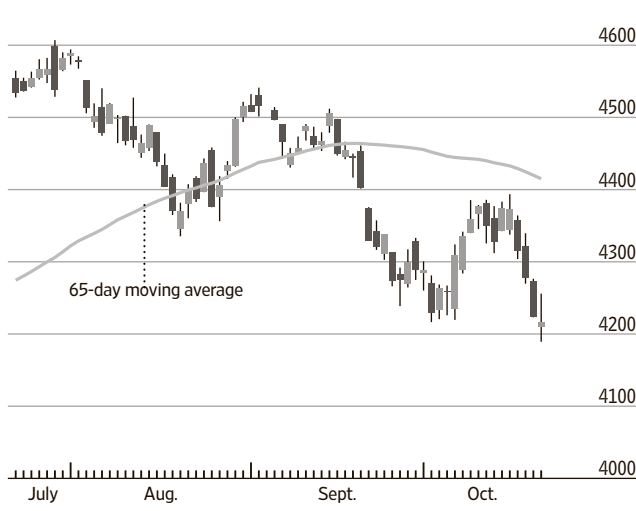
Dow Jones Industrial Average

32936.41 ▼190.87, or 0.58%
Trailing P/E ratio 22.88 19.59
P/E estimate * 18.47 16.77
Dividend yield 2.22 2.29
All-time high 36799.65, 01/04/22



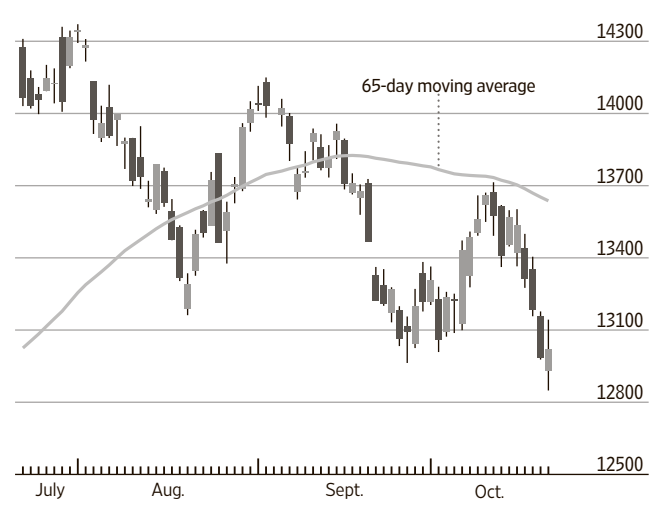
S&P 500 Index

4217.04 ▼7.12, or 0.17%
Trailing P/E ratio * 20.14 18.27
P/E estimate * 19.48 16.57
Dividend yield * 1.68 1.79
All-time high 4796.56, 01/03/22



Nasdaq Composite Index

13018.33 ▲34.52, or 0.27%
Trailing P/E ratio ** 29.89 23.07
P/E estimate ** 26.52 20.97
Dividend yield ** 0.87 0.99
All-time high: 16057.44, 11/19/21



Major U.S. Stock-Market Indexes

Table with columns for Index Name, High, Low, Close, Net chg, % chg, 52-Week High, Low, % chg, YTD, and 3-yr. ann. Includes Dow Jones, Nasdaq Stock Market, S&P, and Other Indexes.

Late Trading

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...

Most-active issues in late trading

Table listing most-active issues in late trading with columns for Company, Symbol, Volume, Last, Net chg, After Hours % chg, High, and Low.

Percentage gainers...

Table listing percentage gainers with columns for Company, Symbol, Close, Net chg, % chg, 52-Week High, Low, and % chg.

Trading Diary

Volume, Advancers, Decliners

Table showing trading diary statistics including Total volume, Adv. volume, Decl. volume, Issues traded, Advancers, Declines, Unchanged, New highs, New lows, Closing Arms, and Block trades.

International Stock Indexes

Table of international stock indexes with columns for Region/Country, Index, Close, Net chg, Latest % chg, and YTD % chg.

Percentage Gainers...

Table listing percentage gainers with columns for Company, Symbol, Close, Net chg, % chg, 52-Week High, Low, and % chg.

Most Active Stocks

Table listing most active stocks with columns for Company, Symbol, Volume, % chg from 65-day avg, Latest Session Close, % chg, 52-Week High, and Low.

Percentage Losers

Table listing percentage losers with columns for Company, Symbol, Close, Net chg, % chg, 52-Week High, Low, and % chg.

Volume Movers

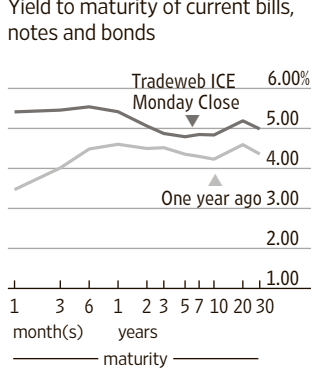
Table listing volume movers with columns for Company, Symbol, Volume, % chg from 65-day avg, Latest Session Close, % chg, 52-Week High, and Low.

CREDIT MARKETS

Consumer Rates and Returns to Investor

Section containing U.S. consumer rates (Federal-funds target rate, 5-year CDs) and Selected rates (Bankrate.com avg, Barclays Bank, Quorum Federal Credit Union, etc.).

Treasury yield curve



Forex Race



Corporate Borrowing Rates and Yields

Table listing corporate borrowing rates and yields with columns for Bond total return index, Close, Yield (%), 52-Week High, Low, Total Return (%), and 3-yr.

CURRENCIES & COMMODITIES

Currencies

Table of U.S.-dollar foreign-exchange rates in late New York trading, listing Country/currency, Mon in US\$, US\$ per US\$, and YTD chg (%).

Commodities

Table listing commodity prices with columns for Commodity, Monday Close, Net chg, % Chg, 52-Week High, Low, % Chg, and YTD % chg.

MARKETS & FINANCE

S&P Falls as Investors Dive Back Into Bonds

By DAVID UBERT

Investors have been waiting for the right moment to jump back in the frigid bond market. On Monday, some of them took the plunge.

A month-long bond selloff helped push the 10-year U.S. Treasury yield above 5% on Monday morning for the first time since 2007.

Some investors saw the milestone as a buying opportunity, quickly pushing yields back to 4.836%. Yields rise as prices fall.

The stock market's response to Monday's reversal was mixed. The Dow Jones Industrial Average fell 0.6%, or 191 points. The S&P 500 ticked 0.2% downward, while the tech-heavy Nasdaq Composite rose 0.3%.

Stocks have stagnated in the second half as investors grapple with the possibility that the

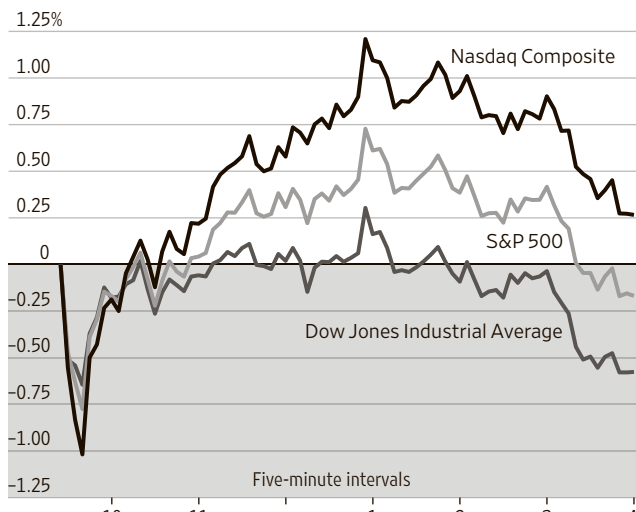
Federal Reserve will keep interest rates higher for longer, meaning bigger borrowing costs on everything from homes and cars to companies' capital projects. Last week, Federal Reserve Chair Jerome Powell said the central bank could tighten monetary policy further if inflation doesn't continue to cool.

That message has helped fuel the grinding run-up in benchmark yields in recent months. For investors, the question is when yields will peak, allowing bondholders to cement safe returns and ride out price gains that could come if central bankers lower rates for lending in the future.

"In our view, there's going to be a giant sucking sound when the whole planet is going to want to lock in these rates," said Ken Moraif, chief executive of Retirement Planners of America.

Any change would be good

Index performance on Monday



Source: FactSet

news for the tech firms that powered the stock market in the first half with the promise of huge future profits. As bond yields dropped Monday, shares

climbed in each of the "Magnificent Seven" companies.

Amazon.com rose 1.1%, Meta gained 1.7%, chip maker Nvidia increased 3.8% and

Tesla inched less than 0.1% upward. Apple rose 0.1%, even as Foxconn Technology Group, one of the iPhone maker's biggest suppliers, said it is cooperating with Chinese probes.

Microsoft also edged 0.8% upward, while Alphabet ascended by 0.7%. Both companies report earnings after Tuesday's close.

About 73% of S&P 500 companies to report earnings so far have turned in better-than-expected results, according to FactSet. That is below the five-year average of 77% for the same period.

On Monday, shares in Morgan Stanley dropped 2% to their lowest closing price since February 2021. The bank said last week that profit fell 9%.

The energy sector was Monday's big loser amid consolidation in the oil patch and falling crude prices. Chevron slipped 3.7% after the company announced a \$53 billion deal to

buy Hess, which declined 1.1%. Benchmark U.S. crude dropped 2.9% to \$85.49 a barrel.

Overseas, the Stoxx Euro 600 fell 0.1%. At midday Tuesday in Asia, Japan's Nikkei 225 was down 0.55%, Hong Kong's Hang Seng Index was down 0.4%, but the Shanghai Composite was up 0.7%. S&P 500 futures rose 0.3%.

—Charley Grant and Caitlin McCabe contributed to this article.

AUCTION RESULTS

Here are the results of Monday's Treasury auctions. All bids are awarded at a single price at the market-clearing yield, which is determined by the difference between that price and the face value.

Table with columns for Applications, Accepted bids, Noncomp, Foreign noncomp, Auction price (rate), 13-Week, and 26-Week.

Both issues are dated Oct. 26, 2023. The 13-week bills mature on Jan. 25, 2024; the 26-week bills mature on April 25, 2024.

China's Stock Rout Worsens as Doubts Swirl

By WEILUN SOON

A major Chinese stock-market benchmark sank to its lowest level in over four years, signaling deep pessimism among global and domestic investors in the country.

The CSI 300 index, which is made up of shares of the most valuable companies listed in Shanghai or Shenzhen, fell 1% Monday to a closing level last seen in February 2019. It was a fourth consecutive day of declines for the benchmark, which has lost more than 10% this year.

The Shanghai Composite Index, which also tracks stocks in mainland China, fell 1.5% and also is in the red for 2023. Hong Kong's stock market was closed for a public holiday.

Chinese stocks have been hit by a global selloff since the Israel-Hamas war began earlier this month. But many China-specific factors have contributed to the selloff in its domestic market, which is among the worst-performing in Asia.

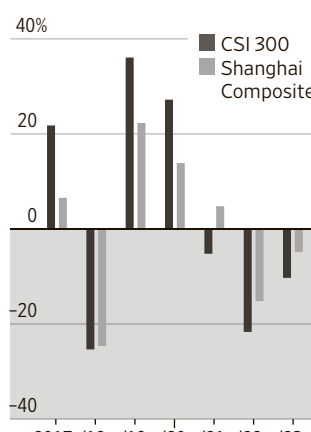
Chinese state media reported over the weekend that

China's CSI 300 Index



*2023 data is through Oct 23

Annual index performance*



Source: FactSet

Chinese authorities are juggling one of Apple's top iPhone suppliers, Foxconn Technology. The news unmoved investors who already were concerned about the geopolitical risks around China. The Shanghai-listed shares of Foxconn Industrial Internet, a constituent of the CSI 300 index, fell 10% on Monday, the maximum daily move allowed by the exchange.

International investors have

pulled more than \$5 billion so far this month from mainland China's yuan-denominated A-share market via trading links with Hong Kong. That has taken their total net sales since August to more than \$22 billion, according to Wind, a provider.

Within China, many mom-and-pop investors that make up a large chunk of the domestic market also have turned

away from Chinese stocks.

Chinese authorities have lately tried to stop the market's slide by making it harder to bet against domestic stocks, cutting taxes on stock trading, and preventing big shareholders of many listed companies from reducing their ownership.

China's sovereign-wealth fund earlier this month bought around \$65 million worth of shares of four large Chinese banks, but that also failed to lift market sentiment more broadly.

The CSI 300 index has fallen 17% from its 2023 high in late January. At the time, investors were optimistic about China's economic prospects after it lifted pandemic restrictions and indicated that growth would become a priority.

Since then, the recovery has been bumpy. The country's housing market is back in a deep slump—which has hurt consumer confidence—and exports have been falling. Last week, property giant Country Garden failed to make a dollar-bond payment after struggling for months.

Goldman Infrastructure Fund Raises \$4 Billion

By ROD JAMES

Goldman Sachs Group's asset management business has collected \$4 billion to invest in midsize infrastructure assets, as investors look to take advantage of a favorable political and economic climate for the sector.

Goldman Sachs Asset Management closed West Street Infrastructure Partners IV at the fund's target and has already committed \$2.3 billion across eight investments, the New York-based manager said.

Goldman Sachs said it is investing the fund across infrastructure subsectors that include energy transition, digital infrastructure, transport, logistics and social infrastructure.

The infrastructure asset class stands to benefit from trends, including the transition to a lower-carbon economy, digital transformation and shifting demographics, "each of which requires very significant mobilization of private capital," said Goldman's co-head of infrastructure, Scott Lebovitz, in announcing the close of the fund.

Private infrastructure investors in the U.S. are also positioned for a boost from the roughly \$1 trillion infrastructure law passed in 2021.

ital mainly from institutional investors, with the balance made up by high-net-worth investors, Goldman and its employees, the bank said. The fund's predecessor, West Street Infrastructure Partners III, closed in 2017 with \$2.5 billion, a spokesman confirmed.

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New Highs and Lows

Table listing new highs and lows for various stocks, including continued from page B6.

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Exchange-Traded Portfolios | WSJ.com/ETFResearch

Table showing the largest 100 exchange-traded funds, latest session, with columns for Monday, October 23, 2023, Closing Price, and YTD %.

Dividend Changes

Table showing dividend changes for various companies, including Company, Symbol, Yld%, Amount, and New/Old.

Stocks

Table showing stock prices and changes for various companies, including Company, Symbol, and Price.

HEARD ON THE STREET

FINANCIAL ANALYSIS & COMMENTARY

Oil Deals Signal Likely Land Grab

Few sizable targets remain after the supermajors' acquisitions, setting off a scramble for what is left

The smell of mergers and acquisitions is in the air after more than \$110 billion of oil megadeals this month—Chevron's agreement to buy Hess and Exxon Mobil's deal for Pioneer Natural Resources.

Devon Energy is said to be eyeing targets that include Marathon Oil and CrownRock, according to a report from Bloomberg. Gas producer Chesapeake Energy is reportedly considering an acquisition of Southwestern Energy, according to Reuters.

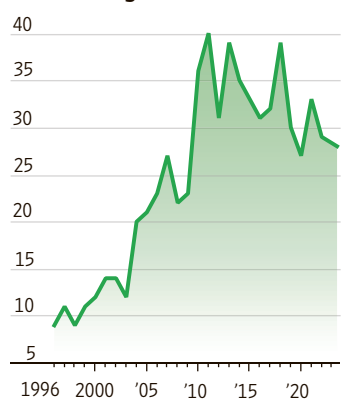
Between the declining pool of quality shale inventory and the limited number of sizable targets in the Permian Basin, energy companies could soon be forced into deal-making action.

The fear-of-missing-out "component of it is only going to accelerate. See one or two more deals, and there could be a scarcity premium that starts to emerge," said Dan Pickering, chief investment officer at Pickering Energy Partners.

Occidental Petroleum, Devon Energy and Diamondback Energy are among the largest producers in the Permian, according to data from Enverus, and are large enough that they could be a potential target or an acquirer, according to Pickering. All three have estimated resource lives of roughly 30 years or more, according to an analysis from Goldman Sachs.

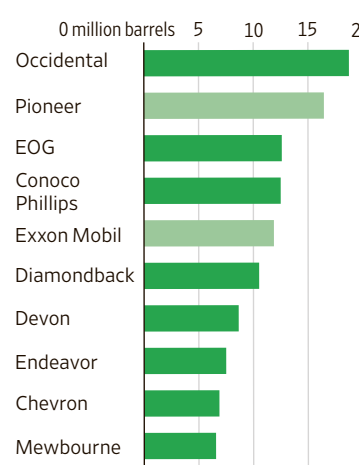
While EOG Resources is one of

Number of oil and gas exploration and production companies with market values between \$1 billion and \$10 billion listed on U.S. exchanges*

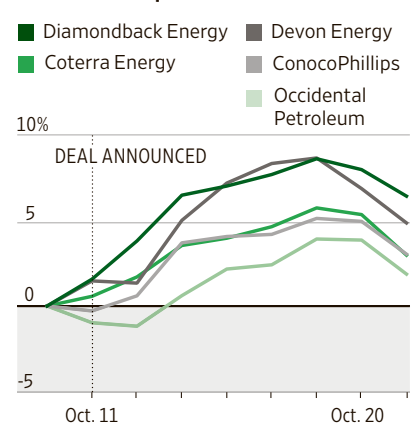


*Using GICS classification. All data as of year-end except for 2023, which is for June 30. †Exxon and Pioneer are listed separately. Sources: Kimberlidge (U.S. exchanges list); Enverus (oil production); FactSet (share price)

Gross operated oil production in the Permian Basin in September 2023†



Share-price performance of top Permian producers following Exxon Mobil's announcement of Pioneer Natural Resources acquisition



wave of deal-making might not be fast and furious. Kimberlidge portfolio manager Mark Viviano argued that, in many cases, entrenched executives and boards at potential target companies don't have an incentive to green light deals. In a previous report, Kimberlidge noted most chief executives of exploration and production companies own very little stock directly and their skills typically aren't transferable outside the industry, making exits undesirable.

The Exxon Mobil-Pioneer deal "was headline grabbing and I'm hoping it serves as a catalyst, but I'm naturally skeptical," Viviano said.

Betting on the next target is tricky, but the trend of consolidation should be bullish for energy-sector investors. While Exxon Mobil signaled the combination with Pioneer will result in more production than if the companies had remained independent, other consolidations over the past 18 months have involved a reduction in rig count, according to Robert Clarke, vice president of upstream research at Wood Mackenzie. As long as future consolidations result in more reductions, it should be supportive for commodity prices and returns.

The growth FOMO that plagued drillers during the shale boom was unhealthy. Consolidation FOMO is one investors can applaud.

—Jimjoo Lee

the top producers there, the company has been more interested in asset acquisitions rather than corporate deals, Pickering added. Smaller Permian producers, those with sub-\$10-billion market capitalizations, include Matador Resources and Permian Resources, which agreed to acquire Earthstone Energy in August.

ConocoPhillips could be another acquirer. Given major European oil companies' lagging valuations and the pressure they face to decarbonize, they seem less likely to throw their hats into the ring.

The market was ripe for consolidation. In a white paper pub-

lished in June, energy asset manager Kimberlidge noted there are "too many public companies relative to the degree of investor interest" for U.S. oil and gas producers. In its analysis of filings for the five largest active fund managers (including Fidelity and J.P. Morgan), it found those managers' holdings of the five largest energy companies in the S&P 500 expanded from 40% to 53% of U.S. energy holdings in the second quarter of 2023, compared with the same period five years earlier. At the same time, holdings of smaller energy companies declined.

The valuation gap between the energy giants and the smaller producers has widened. An index that is heavily weighted toward Exxon Mobil, Chevron and other large producers commands a valuation, measured as enterprise value as a multiple of forward-12-month Ebitda, that is 44% higher than an index tracking smaller producers. The premium averaged 14% over the past 17 years and, at the peak of optimism about the shale patch, there was a time when small, fast-growing frackers were valued more highly than larger, less nimble peers.

There is reason to think the



The average monthly new mortgage payment is 52% higher than the average apartment rent.

It Has Never Been a Worse Time To Buy Instead of Rent

Getting on the property ladder has rarely been tougher for first-time buyers. But a tight housing market isn't turning out to be a bonanza for landlords.

The cost of buying a home versus renting one is at its most extreme since at least 1996. The average monthly new mortgage payment is 52% higher than the average apartment rent, according to CBRE analysis. The last time the measure looked out of whack was before the 2008 housing crash. Even then, the premium peaked at 33% in the second quarter of 2006.

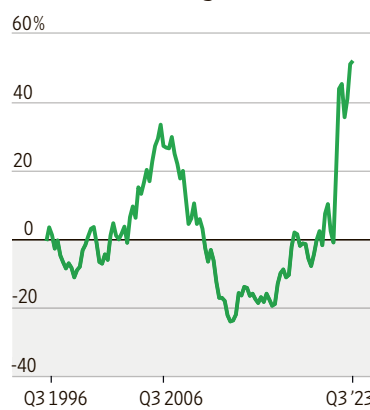
In theory, buying and renting costs should be roughly matched, according to Matt Vance, head of multifamily research at CBRE. Although owners benefit when house prices go up, they put more cash into homes than tenants for things such as repairs and refurbishments.

From 1996 to mid-2003, the average cost to buy or rent did indeed work out more or less equal.

After the financial crisis, rock-bottom interest rates and plenty of housing supply meant it was 12% cheaper on average to buy a home than to rent one during the 2010s. The current hefty ownership premium reflects the surging cost of debt, as rates on a 30-year mortgage reach 8%, as well as high house prices since pandemic lockdowns raised the value of domestic space.

A person taking out a 30-year mortgage today on a \$430,000 home with a 10% down payment would fork up about \$3,200 in monthly repayments, 60% more

Premium/discount to buy a U.S. home versus renting it



Sources: CBRE Research; CBRE Econometric Advisors; Freddie Mac; U.S. Census Bureau Realtor.com; FHFA

than if they had bought the same house three years ago. Rents rose by a less-blistering 22% over the same period, though this was moderately ahead of U.S. inflation.

Rising house prices make it hard for renters to scrape together a 10% down payment, let alone afford spiraling mortgage costs. "There is a lot of shadow demand for homes, with a bunch of first-time buyers waiting on the sidelines for the payment-to-paycheck calculation to work for them," says Odeta Kushi, deputy chief economist of First American Financial Corp.

A collapse in prices would restore the market to balance, but seems unlikely barring a major recession. Those who bought properties when rates were low have locked in cheap financing: Around

80% of outstanding U.S. mortgages have an interest rate below 5%. This gives homeowners an incentive to stay put, squeezing the supply of houses for sale.

On paper, these owners might appear to benefit from the current situation, but they, too, face costs. They can't easily move, and downsizing to take advantage of record house prices might not add up, given higher mortgage rates.

With homeownership out of reach for many tenants, landlords would normally be able to push rents higher. But the supply of homes to rent isn't as tight, with a glut of newly built apartments depressing rent growth.

Demand from tenants is weaker than it was during the pandemic, as most people who were planning to move have done so over the past two years. Fannie Mae thinks vacancy rates in U.S. multifamily buildings will reach 6.25% in 2024, above the 15-year average of 5.8%. This will hurt institutional investors, who have poured billions of dollars into U.S. rental property in recent years.

Apartment stocks are underperforming. Since the buy-to-rent premium returned in early 2021, shares in AvalonBay Communities and Equity Residential fell 6% and 18% respectively, while the S&P 500 index gained 8%.

In a dysfunctional U.S. housing market, even one that should be tailor-made for landlords, perhaps only lifelong renters are getting what they want.

—Carol Ryan

Ozempic Maker Has a Weight Problem

The company behind diabetes and obesity phenomena Ozempic and Wegovy is overweight.

Novo Nordisk became Europe's most valuable company last month, overtaking luxury goods maker LVMH, which itself took the title from food company Nestlé in 2021. All three companies are global stars that dominate the small European stages where they play, but the Danish drug company is now an extreme case. This might be a reason why the shares trade at a discount to those of its closest peer, U.S.-listed Eli Lilly.

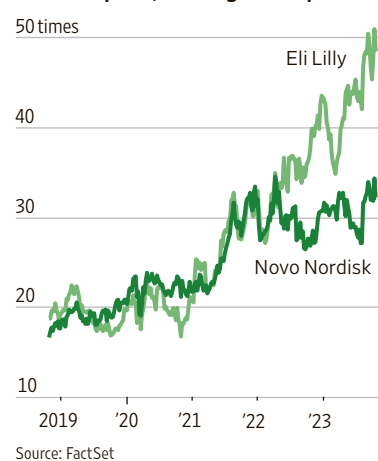
The 25 companies that make up Nasdaq's OMX Copenhagen 25 index are currently valued at the equivalent of about \$750 billion in aggregate. Novo Nordisk's market value alone is \$430 billion. Counting only companies' free-floating shares, as the OMXC25 index does, it would still be valued at over half of the entire index.

Such outsize weightings are a problem because few investors are comfortable with dedicating more than 10% of their fund to a single stock, even if they are allowed to. The European regulations governing mutual funds limit individual stocks to 10%. In practice, most managers of other funds also cap individual stockholdings, in line with the benchmarks they follow.

Additionally, much of Europe's asset-management market still operates at the national rather than the European level. Jesper Neergaard Poll, chief portfolio manager at Danske Bank Asset Management, makes a very rough estimate that 125 billion Danish kroner, equivalent to about \$18 billion, might be tracking Danish benchmarks.

The upshot is that a lot of Danish fund managers have for years been forced sellers of Novo Nordisk. Every time the shares become more than 10% of their holdings, they sell, never mind their view of so-called fundamentals such as prospects for earnings growth. The selling hasn't

Forward price/earnings multiples



Source: FactSet

stopped Novo Nordisk's relentless rise, of course, but the stock might have performed even better if local investors were allowed to hold more of it.

Running winners is easier in the far larger U.S. market, where the most valuable company—Apple—accounts for only about 7% of the S&P 500. This could be a reason why Eli Lilly has outperformed Novo Nordisk. The U.S. company's shares now change hands for 48 times forward earnings, compared with 32 times for its Danish rival.

There are fundamental reasons for the difference, too. "Eli Lilly has a drug for Alzheimer's, which Novo Nordisk doesn't, as well as very good data on its latest obesity drugs," said Danske Bank's Neergaard Poll. The U.S. stock market also seems to be more prone than European ones to hype on media-friendly themes such as weight loss, perhaps because of higher participation from individual investors.

Still, worries about forced share selling prompted German-American industrial-gas company Linde to give up its German listing earlier this year. At an investor day last October, it showed that its stock had in 11 out of 12 cases underperformed when its weighting was above 10% of the local Dax index before quarterly rebalancing dates, and outperformed when it was below the cap.

Linde didn't bother to do anything about the effect until its share price hit a rough patch in 2022. Novo Nordisk likewise can easily ignore it while its shares are still notching gains. The stock is up 44% this year after a 17% single-day pop in August, when it said Wegovy had been shown to reduce the risk of heart attacks, strokes and cardiovascular deaths by 20%.

If the going gets tougher for Novo Nordisk, what might it do to stop the forced selling? Not much: Unlike Linde, which had a U.S. listing to fall back on, Novo Nordisk is too rooted in its home country to consider a move. It won't get much heat from activist investors, either, with 77% of the votes in its dual-class share structure owned by a foundation.

In reality, the technicalities of share ownership may be less of a problem for Novo Nordisk than for all the global investors who have bought the stock from Danish fund managers in recent years. Anyone who invested in part because of the valuation gap relative to Eli Lilly needs to be mindful that at least one technical reason for it will likely persist.

Novo Nordisk may be able to help with others' weight issues, but it can't easily fix its own.

—Stephen Wilmot

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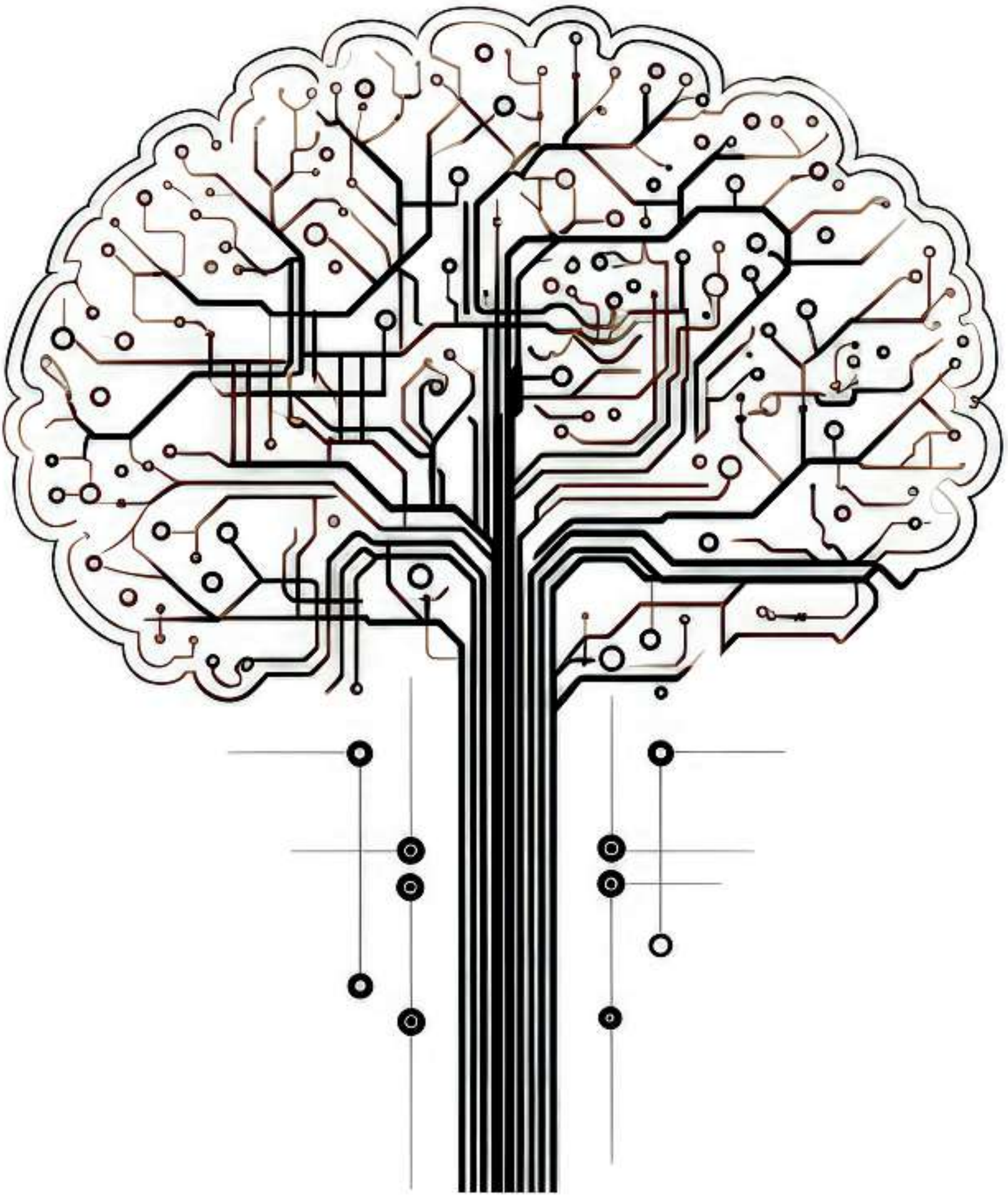
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JOURNAL REPORT TECHNOLOGY



DELICAN & CO. USING MIDJOURNEY AI

How Does AI ‘Think’? We Are Only Starting to Understand That

Despite all the talk about the AI revolution, the only thing we know for sure is that we can’t really know what’s coming

BY CHRISTOPHER MIMS

YOU CAN’T GO very far in Silicon Valley without hitting an “AI for X” startup. AI for enterprise tech. AI for medicine. AI for dating. And on and on. Some of these startups, no doubt, are pure marketing hype. But even most of the others are simply applying existing AI to a given category of hu-

man need or desire—licensing big AI systems from well-capitalized startups and tech giants, such as OpenAI’s ChatGPT, Google’s Bard and Anthropic’s Claude, and applying them to whatever area of human endeavor their founders think hasn’t had enough AI thrown at it yet.

The sudden ubiquitousness of these startups and services suggests that the AIs they are leveraging are ready for prime time. In many ways, though, they are not. Not yet, anyway. But the good news (for AI enthusiasts, anyway) is that the underlying AIs upon which all this hype rests are getting better, fast. And that means that to-

Please turn to page R6

OpenAI’s CEO and Tech Chief: On AI’s Future, and How to Navigate the Tricky Path Forward

Sam Altman and Mira Murati envision ‘the best tool humanity has yet created’

IN THE FAST-moving world of artificial intelligence, talk about the future tends to focus on something referred to as “artificial general intelligence”—the stage at which AI will be capable of doing any job a human can do, only better.

Perhaps no company is in a better position to talk about the potential benefits and risks of this so-called AGI than **OpenAI** (49%-owned by **Microsoft**), the creators of the popular chatbot ChatGPT. At The Wall Street Journal’s annual Tech Live conference last week, the Journal’s senior

personal-technology columnist Joanna Stern spoke with OpenAI’s Chief Executive Sam Altman and Chief Technology Officer Mira Murati. Edited excerpts of their conversation:

• **WSJ:** Why is AGI the goal?



• **SAM ALTMAN:** The two things that will matter most over the next decade or few decades to improving the human condition are abundant and inexpensive intelligence: the more powerful, the more general, the smarter the better. I think that is AGI. And then, abundant and cheap energy. If we can get these two things done in the world, then it’s almost difficult to imagine how much else we could do. We’re big believers that you give people better tools, and

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Scan this code to see all videos from the Tech Live 2023 conference in Laguna Beach, Calif.

Inside

RANKING THE TECH HUBS

Which cities are at the top of the heap when it comes to technology workforces and skills? **R2**



THE AI PH.D.

Would it be ethical for a chatbot to write a Ph.D. thesis, if the student looks over it? Readers respond. **R7**

JOURNAL REPORT | TECHNOLOGY



The U.S. Cities With the Most Cutting-Edge Tech Workers

Traditional tech hubs still have the most future-ready workforces, but a new wave of cities is on the rise

BY KEVIN MCALLISTER

THE SEATTLE area has the highest proportion of advanced tech workers in the country relative to cities with similarly sized tech workforces, a new ranking from the Burning Glass Institute shows. Home to **Amazon.com** and **Microsoft**, Seattle bested other West Coast hubs in attracting talent with cutting-edge skills, while cities weighed down by legacy tech jobs fell further behind.

What makes a cutting-edge city? Burning Glass ranked established and aspiring tech hubs across the U.S. by the share of their tech workforce that boasts a set of cutting-edge skills: those that are most in-demand and most well-paid.

The resulting ranking shows which cities across the country are fertile ground for companies looking to hire for roles requiring advanced skills or expand

into new markets. At the opposite end of the spectrum are cities where finding highly skilled workers is becoming more difficult.

“This ranking has a lot of really important lessons here for cities and some warning signs,” says Matt Sigelman, president of the Burning Glass Institute. “You can be a city with a relatively large tech workforce, but if that tech workforce doesn’t have the same concentration of the most valuable talent, of the most valuable skills, then you can lose your edge very quickly.”

The method

To determine the rankings, Burning Glass first identified a set of tech skills associated with higher market demand and higher pay across the country using job postings and career history data from 60 million workers via Lightcast, a labor-market analytics firm. Among that group of cutting-edge skills are skills related to cloud and serverless computing, machine learning and artificial-intelligence archi-



The Amazon Spheres on the Amazon headquarters campus in Seattle.

itecture and cybersecurity operations.

Each city was then evaluated and ranked based on the share of its tech workers—which included workers in tech roles outside of the tech sector—who possessed at least one of those skills. A separate momentum ranking

looked at the growth in demand for workers with advanced skills within each city as well as the general growth of the area’s tech workforce between 2017 and 2022.

Traditional tech hubs like the Seattle, San Jose, Calif., and San Francisco metro areas populate the upper tier of the list of cities with the greatest proportion of skills. But the position of historically blue-collar cities in the momentum ranking shows the broad impact that tech has had on a changing American workforce, despite the contractions among large tech companies in the past 18 months. Pittsburgh ranked fifth among all large cities in the momentum ranking, followed closely by the Kansas City metropolitan area in sixth.

Some cities that have been considered hot spots for tech workers fleeing the Bay Area and other hubs, like cryptocurrency-bolstered Miami and Amazon HQ2 locale Washington, D.C., fared worse in the analysis. On the momentum list, Miami was among the top 10, but on the cutting-edge skills list, it trailed other Southern cities like Atlanta and Raleigh, N.C. Meanwhile, Washington, D.C., finished in the bottom quarter of the skills ranking and is trending in the wrong direction, finishing last in the momentum ranking.

The sizable Washington, D.C., tech ecosystem was still growing over the analysis period, according to data from Burning Glass, but the types of tech jobs being recruited for and the workers filling them were less likely to require or have the most cutting-edge tech skills when compared

Seattle is beating other West Coast tech hubs in attracting talent with cutting-edge skills.

with other cities across the country.

Lower-tech D.C.

Part of the reason for that could be the overlap between the tech workforce and government agencies. Those agencies often rely heavily on legacy systems, says Kevin Walsh, director of IT and cybersecurity at the U.S. Government Accountability Office, who testified on government modernization in front of Congress in May.

In some cases the government relies on older IT for the right reasons, including being responsible stewards of taxpayer dollars, he says. But in many others, the reliance on sometimes decades-old systems for critical operations means that staffing tech jobs becomes an issue, alongside security risks. Walsh notes that his office found that the Internal Revenue Service was using software that was up to 15 versions out of date as recently as last year.

“The thing we often struggle with in the government is finding someone who is able to transfer or modernize that old code into a more modern and usable framework,” Walsh says, adding that there have been instances where government agencies have had to rehire retirees because the skills necessary to operate those legacy systems still core to government operations get lost. “The legacy problem is not going to go away as long as technology continues to evolve,” he says.

It is hardly new that the Seattle, San Jose and San Francisco metro areas are leading the pack when it comes to tech workforce. These West Coast tech hubs maintained their skills lead even as the tech sector reeled in 2022 from widespread layoffs. Seattle has the largest share of employees in the software-products industry at nearly 13% of the nationwide total, according to the trade group CompTIA in the annual State of the Tech Workforce report. And among the two most recent cohorts of companies to be a part of the startup accelerator Y Combinator, more than half were based in San Francisco.

The trend of tech workforce leaders opening up larger gaps in the talent pool wasn’t limited to the country’s largest metro areas. The top two midsize cities in terms of frontier skills, Provo, Utah, and Fayetteville, Ark., were third and first respectively in the momentum ranking.

In the so-called Silicon Slopes, the tech ecosystems in Provo

The most cutting-edge large cities (metro areas)

	CUTTING-EDGE SKILLS RANK	MOMENTUM RANK		CUTTING-EDGE SKILLS RANK	MOMENTUM RANK
Seattle-Tacoma-Bellevue, Wash.	1	1	Miami-Fort Lauderdale-Pompano Beach, Fla.	14	10
San Jose-Sunnyvale-Santa Clara, Calif.	2	2	Phoenix-Mesa-Chandler, Ariz.	15	11
San Francisco-Oakland-Berkeley, Calif.	3	3	Minneapolis-St. Paul-Bloomington, Minn./Wis.	16	15
Boston-Cambridge-Newton, Mass./N.H.	4	7	Philadelphia-Camden-Wilmington, Pa./N.J./Del./Md.	17	25
Austin-Round Rock-Georgetown, Texas	5	4	Detroit-Warren-Dearborn, Mich.	18	20
San Diego-Chula Vista-Carlsbad, Calif.	6	13	Kansas City, Mo./Kan.	19	6
New York-Newark-Jersey City, N.Y./N.J./Pa.	7	9	Baltimore-Columbia-Towson, Md.	20	26
Los Angeles-Long Beach-Anaheim, Calif.	8	8	Washington-Arlington-Alexandria, D.C./Va./Md./W.Va.	21	27
Portland-Vancouver-Hillsboro, Ore./Wash.	9	16	Dallas-Fort Worth-Arlington, Texas	22	14
Raleigh-Cary, N.C.	10	21	Pittsburgh	23	5
Denver-Aurora-Lakewood, Colo.	11	19	St. Louis, Mo./Ill.	24	22
Atlanta-Sandy Springs-Alpharetta, Ga.	12	12	Tampa-St. Petersburg-Clearwater, Fla.	25	23
Chicago-Naperville-Elgin, Ill./Ind./Wis.	13	18	Houston-The Woodlands-Sugar Land, Texas	26	17
			Sacramento-Roseville-Folsom, Calif.	27	24

Sources: The Burning Glass Institute, Lightcast, U.S. Census’ American Community Survey

JOURNAL REPORT | TECHNOLOGY

How Pittsburgh Has Become a Hot Tech Center. Sort of.

Home to Carnegie Mellon, the former steelmaking hub now can boast of its tech prowess. But it's not Silicon Valley.

BY JAMES R. HAGERTY

PITTSBURGH, whose prosperity once relied heavily on Andrew Carnegie's steel mills, now draws much of its vibrancy from another legacy of the Scottish industrialist: Carnegie Mellon University.

CMU's expertise in computer science and robotics is helping to draw high-tech jobs to the Pittsburgh metro area, as shown in a new study by the Burning Glass Institute ranking cities in terms of the "future readiness" of their labor forces.

Pittsburgh ranks fifth among large metro areas in the "momentum" category—or the growth in the number of technology workers and demand for advanced skills, according to the Burning Glass study. In that category, the Pittsburgh metro area trailed only those of Seattle; San Jose, Calif.; San Francisco; and Austin, Texas. The institute cited demand for software skills, including cybersecurity. Much of the demand for those skills comes from a growing array of tech companies and the presence of two major banks, **Bank of New York Mellon** and **PNC Financial Services Group**.

Pittsburgh also is a center for research in artificial intelligence. "There's a feeding frenzy among corporations to hire AI people," says Michael Shamos, a computer science professor at CMU. "They're starting to try to poach our [graduate] students before they can finish their degrees."

Though Pittsburgh isn't particularly hip or glamorous, it has one huge lure for tech workers: affordable housing. The median price for home sales in September was \$240,000, according to Redfin. That compares with \$548,800 in Austin and \$1.3 million in San Francisco.

Space to breathe

With a metro-area population of around 2.4 million scattered around hills and rivers, Pittsburgh "does not drown you," says Çetin Meriçli, a co-founder of **Atlas Robotics**, a Pittsburgh-based startup working on self-driving forklifts. "It's not overcrowded and claustrophobic, like New York or Istanbul, my hometown."

Formerly blighted Pittsburgh neighborhoods like Lawrenceville and East Liberty now attract highly paid young people. Yet

gentrification hasn't erased the jumble of 19th-century architecture, winding streets and distinct neighborhoods that give Pittsburgh its character.

"It's an urban forest," says Drew Bagnell, who grew up in Florida and has lived in Pittsburgh since arriving as a CMU graduate student in robotics in the late 1990s. Bagnell, now a consulting professor in robotics at CMU and chief scientist of **Aurora Innovation**, a developer of technology for self-driving vehicles, lives near a 644-acre park and can walk to his favorite restaurant and coffee shop.

CMU has nearly 3,000 students in its computer science school at the un-

Gecko Robotics' Jake Loosararian handles the wall-climbing TOKA 5 robot that inspects storage tanks and other steel equipment.

Young people have fewer career options than they would in, say, New York or the San Francisco Bay Area. Pittsburgh's downtown, which grew much more appealing in recent years, has struggled since the Covid pandemic drained many office



dergraduate, master's and Ph.D. level. The nearby University of Pittsburgh is noted for biomedical research.

Some downsides

Still, nobody is saying Pittsburgh is ready to supplant Silicon Valley. Among its drawbacks is the small number of direct flights to the West Coast and many other popular destinations. It isn't a major center of venture capital and doesn't tend to spawn billion-dollar tech companies.

buildings.

Overall, however, Pittsburgh has rebounded surprisingly well from the collapse of the local steel industry in the 1980s and the decline of Westinghouse, once a world-renowned technological powerhouse. An early sign of Pittsburgh's tech revival came in 2006, when Google opened an office near CMU. The Pittsburgh branch of Google, a unit of **Alphabet**, occupies a former Nabisco bakery and does engineering work in internet shopping, advertising and cloud

passenger cars, has about 700 employees in Pittsburgh, many of them in a brick building that once housed a cable factory. Aurora also has a sizable presence in Mountain View, Calif., allowing it to draw on talent in Silicon Valley.

Jake Loosararian, co-founder and chief executive of **Gecko Robotics**, grew up in the Washington, D.C., area and England and then studied electrical engineering at Grove City College, about an hour north of Pittsburgh. A tour of a power plant gave him

the idea of using wall-climbing robots to inspect for corrosion and other problems at critical infrastructure.

When he formed Gecko Robotics in 2013, Loosararian decided to base it in Pittsburgh, partly because of the robotics expertise spawned by CMU, where there were "a lot of great people I could learn from."

One big venture-capital firm said it would invest in Gecko only if the company moved to Silicon Valley. Loosararian moved briefly to California but returned to Pittsburgh after finding investors willing to back him there. The company employs about 240 people, roughly half of them in Pittsburgh. Gecko does most of its hardware development in Pittsburgh and much of its software development in Boston and New York.

Loosararian figures Gecko's real-estate costs would quadruple if the company moved to Silicon Valley.

Where are the IPOs?

One weakness of Pittsburgh, he says, is the lack of a Silicon Valley-style startup culture fueled by successful initial public offerings. That means people in Pittsburgh are less likely to be familiar with the idea of getting much of their compensation in the form of equity. In Pittsburgh, he says, the typical mentality is "you put in your time and go home. You don't feel like an owner." He hopes more local startups will have successful IPOs and change that attitude.

One big local success is **Duolingo**, a provider of language-teaching apps. Luis von Ahn, who co-founded the company in 2011, has a Ph.D. in computer science from CMU. The company employs about 400 people in Pittsburgh and draws on talent from around the world.

Astrobotic Technology, which has more than 200 employees in Pittsburgh, is a spinoff from CMU that has developed lunar landing vehicles. The company expects to make its first moon landing with one of those unmanned vehicles in December 2023 or January 2024. Astrobotic also has developed roving vehicles and power-generation technology for use on the moon.

Meriçli, the co-founder of **Atlas Robotics**, has lived in Pitts-

burgh since he moved there 14 years ago from his native Turkey for graduate studies in robotics at CMU. He describes the city as a "hidden gem." Though he doesn't completely share the local obsession with Steelers football, he has concluded that the game isn't just brutality. "It's a thinking game," he says.

James R. Hagerty, a former reporter for The Wall Street Journal, is a writer in Pittsburgh. He can be reached at reports@wsj.com.

and third-ranked Salt Lake City have thrived since the 2007-09 recession. Since building a Utah campus in 2012, **Adobe** has maintained a large presence in Lehi, Utah, further expanding to accommodate 1,000 more employees in 2020. The Milken Institute recently rated the Provo-Orem area as the best-performing city for jobs and growth in the U.S. for the third straight year, in part due to its economic growth related to tech.

But the growth of tech jobs and frontier skills doesn't just happen at tech companies, especially in some of the areas that performed the best across the country. The bank **Zions Bancorp** opened a technology campus in Utah in 2022. And in the Fayetteville area, which includes

Walmart's Bentonville headquarters, Burning Glass attributes some of the strong performance to Walmart's deeper tech investments.

"Increasingly you're seeing that Main Street is becoming tech, Main Street is being driven by data," Sigelman says. "Some of these frontier skills that are growing the fastest and are commanding the highest value show up in places where you wouldn't have seen them in the past."

In the Kansas City metro area, which ranks sixth among large cities in the momentum ranking, nearly one out of every three tech workers is employed by a company outside the sector, according to Kara Lowe, CEO of the Kansas City Tech Council, an advocacy group that aims to ex-

pand the tech ecosystem in the area.

Still, a technology company making any kind of direct investment can have the effect of attracting talent with frontier skills to the area. Facebook parent **Meta Platforms** announced last year that it was investing \$800 million into a data center complex in Kansas City, Mo., which Lowe says she hopes will encourage other companies to continue bringing new business to the area.

"I do think that there is a radar effect that tends to happen when a region attracts those top shelf tech brands," Lowe says.

A farm system of talent

The growth of the broader tech

industry in the Kansas City metro area in recent years, she adds, is due in part to the intellectual capital in the city—but that companies in the area are also working to build what she calls the "major-league baseball farm system of talent" through apprenticeships and skills development programs that keep tech workers engaged not just with employers but with the broader community. That is something that Lowe says is especially important as remote work continues to provide opportunities for workers to do tech jobs outside of tech hubs, whether those be established or on the rise.

Courting and retaining talent through remote work is one thing that many small and some midsize cities that shot up the

ranking have in common, Sigelman says, highlighting that many of the cities at the top of the ranking of small cities have great quality of life. But even among the largest cities, the movement of people and companies can lead to significant volatility.

"Demand doesn't stay stable; the nature of skills that are needed doesn't stay stable," Sigelman says. "Some of the cities that are growing their workforce the fastest, that are building up a concentration of advanced skills, could climb significantly."

Kevin McAllister is a Wall Street Journal reporter in London. Email him at kevin.mcallister@wsj.com.



Special Advertising Feature

The Power of Sleep:

How Technology Is Unlocking a New Era in Sleep Health

The average person spends around a third of their life sleeping, which adds up to almost 30 years across the average U.S. lifespan. This is not “down time,” however, and the biological processes that take place during sleep are crucial for a healthy body. Conditions linked to poor sleep range from obesity to diabetes and mental health disorders, while 2022 research from Gallup found that it also contributes to absenteeism that costs the U.S. economy \$44.6 billion a year in lost productivity.

Sleep clearly plays a crucial role in our holistic health and economy, which is why Samsung has introduced a bevy of new features through the Galaxy Watch6 series that can help optimize sleep. “With sleep, there is no latency,” says Dr. Hon Pak, Vice President and Head of Samsung’s digital health team. “Unlike other efforts to improve health, the benefits of better sleep are almost immediate, and we believe that a better night’s sleep is the first step toward better wellness.”

Which Sleep Animal Are You?

Are you a night owl or an early bird? This avian dualism doesn’t account for all cases, which is why Samsung has developed a far more calibrated system. Proposing eight animal archetypes, from “sensitive hedgehog” (more active at night and can be prone to sleep anxiety) to “easygoing walrus” (stays awake for long stretches but then sleeps up to 19 hours at a time), the Samsung Sleep Animal Symbol is a fun and informative way to understand—and act on—individual chronotypes.

It’s often said that adults need around seven to eight hours of sleep a night, but sleep patterns and preferences are in fact unique to individuals. Called chronotypes, these patterns are dictated by genetics and are therefore as unique as a fingerprint. Understanding an individual’s chronotype is key, as it allows people to work with rather than against their body clocks, which can help improve both productivity and health.

This is why Samsung works to provide a comprehensive analysis of an individual’s health with advanced sleep insights, helping users better understand their distinct sleep preferences. Furthermore, in partnership with the National Sleep Foundation in Washington, D.C., this data is being turned into actionable insights that can be uniquely applied to individual cases.

Your Personal Sleep Coach

Many of us turn to personal trainers for help to get in shape, or career coaches when looking to level up at work—could the next frontier in coaching be the sleep coach?

The Galaxy Watch6 series is designed to prompt action as well as insight. By analyzing the accumulated sleep pattern data, Samsung’s Sleep Coaching Program can create bespoke pathways

to positive change, just like a private trainer. In tracking their progress and daily habits, users are motivated to improve their sleep habits with tailored sleep coaching programs such as meditating at night or waking up to natural light first thing in the morning.

As part of her interest in strategies to improve sleep health, Vanessa Hill—an award-winning science communicator, sleep researcher and Samsung Wellness Council member—turned to the Samsung Sleep Coaching Program to see how it could positively impact her sleep. Choosing two sleep habits—focusing on being active during the day and practicing deep breathing before bed—Hill experienced positive results in forming health habits and improving her sleep score.

“When it comes to sleep, small changes can lead to big results,” says Hill. “As a sleep habits researcher, I appreciate how Samsung’s Sleep Coaching provides tailored instructions and reminders that helped me form new healthy habits and measurably improve the quality of my sleep.”

Curating an Optimal Sleep Environment

Optimizing one’s sleep environment is one of the most powerful changes individuals can make when working toward healthier sleep. This involves a range of factors, including noise levels, light exposure and room temperature. It’s a precise and sometimes counterintuitive art—according to the National Sleep Foundation, the ideal sleep temperature is a relatively cool 60 to 67 degrees Fahrenheit (15.5 to 19.4 degrees Celsius).

Rather than spending time twiddling with the thermostat in the evening, users of the Galaxy

Watch can integrate home features with the Samsung SmartThings home hub to automatically change the settings of connected devices to help wind down for sleep—from closing electronic blinds to resetting the thermostat. Programming this wind-down to happen at the same time each day also fosters the all-important sleep schedule that has been proven to boost healthy sleep.

These complex environmental factors are also reflected in the Galaxy Watch’s Sleep Mode, which disables notifications, dims the screen and switches to invisible health-sensor light on mobile devices to minimize even small distractions—the human circadian rhythm is naturally triggered by light.

The Future of Sleep

These advancements are perfectly timed to match the public’s increased interest in healthy sleep habits. Gone are the days when businesspeople and politicians wore their lack of sleep with pride, and a far healthier and more holistic discourse on sleep has opened up.

Over the past two years, the Samsung Health app—which has 64 million monthly active users around the world—saw a doubled increase in the number of users who tracked their sleep every week for a full year, proving that people are committed to improving their sleep.

Samsung’s dedication to a healthier future for all also takes the form of wide-ranging partnerships with leading academic institutions. These collaborations aim to produce significant—and, more importantly, comprehensive—insights, such as discovering a connection between sleep and resilience or cardiovascular health. With such technology innovations, Samsung continues to empower users to better understand and assert more control over their own health.



Unconcerned Lion
Has healthy sleep patterns, sleeping at consistent times, getting enough sleep and sleeping deeply.



Sensitive Hedgehog
Enough total sleep time, but spends too much of that time awake and has inconsistent sleep times.



Nervous Penguin
Sufficient and consistent sleep times, but remains alert and wakes up often during the night.



Sun-Averse Mole
Enough sleep without waking up too often, but has inconsistent sleep times. Tends to avoid sunlight.



Cautious Deer
Consistent sleep times, but is skittish, tends to toss and turn, and doesn’t sleep long enough.



Easygoing Walrus
Consistent sleep times, but not enough sleep. Can stay awake for an unusually long time.



Alligator on the Hunt
Not enough total sleep time, wakes up often at night and has inconsistent sleep times.



Exhausted Shark
Not enough total sleep time, tends to toss and turn, and has inconsistent sleep times.

Sleep Coaching Tailored by Sleep Animal Symbol

Sleep patterns can affect your performance throughout the day. To tailor its Sleep Coaching program to individual characteristics, Samsung Health sorts users into eight categories—each represented by a different animal.

The Wall Street Journal news organization was not involved in the creation of this content. This article is sponsored by Samsung.



To find out more about Samsung’s smartwatch innovations, please scan this QR code or visit samsung.com/galaxy-watch

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Galaxy Watch6



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Image simulated. Sleep features are intended for general wellness and fitness purposes only. Not intended for use in detection, diagnosis, treatment of any medical condition or sleep disorder. The measurements are for your personal reference only. Please consult a medical professional for advice. Fabric Band sold separately and compatible with Galaxy Watch4 and later released Galaxy Watch series. Availability of watch bands may vary by country/region or carrier.

JOURNAL REPORT | TECHNOLOGY

Future AI: How Will It 'Think'?

Continued from page R1
day's hype could quickly become tomorrow's reality.

To understand all of this—why the AIs aren't ready for prime time, how they are getting better, and what that can tell us about where we're heading—we have to go on a bit of an intellectual journey.

Today's steam engines

To start, it helps to understand how these AIs work. Two terms it's imperative to know: "generative AI" and "foundation models." The current generation of AIs that have people so excited—the ones doing things that until a couple of years ago it seemed only humans could—are what are known as generative AIs. They are based on foundation models, which are gigantic systems trained on enormous corpuses of data—in many cases, terabytes of information representing everything readily available on the internet.

Generative AIs are the AIs that generate eerily humanlike responses to written prompts, or surprisingly convincing images, or artificial voices that sound just like the humans they copy.

The best way to understand where these AIs might take us, and why predictions are only so useful, is to compare them to other transformative technologies in their earliest stages of development. Take the steam engine. No one in the early 18th century could have known that the primitive steam-powered pumps invented by Thomas Savery and Thomas Newcomen, used for removing water from mines, would someday evolve into highly efficient steam turbines essential for generating electricity. (For one thing, electricity had yet to be discovered.)

The first steam engines were the product of intuition and tinkering, not a robust understanding of the science of thermodynamics, says George Musser, author of a forthcoming book about how scientists are pioneering new ways to probe the nature of human and machine intelligence.

In a pattern repeated over and over in the history of technology, first there was the thing—in this case the steam engine—and only later did we come to understand it. That understanding, which we call thermodynamics, took on a life of its own, becoming one of the most universally applicable branches of physics.

Well, it's happening again. In an almost perfect recapitulation of that history, today's AIs have been the products of intuition and tinkering, and we don't understand how they work, says Musser. But like the earliest steam engines, today's genera-

foundation model is already capable of something that is, for all intents and purposes, reasoning.

Here, we have to introduce a third term—large language model. A large language model is a type of generative AI, and one representative of the class of foundation models that is trained exclusively on text. (ChatGPT, Bard and Meta's new chatbots are all examples.)

Whether large language models have crossed the threshold from merely memorizing and regurgitating information about the world, to synthesizing it in completely novel ways—that is,

from two factors. First, many AI companies are no longer revealing what's in their pretraining data. Also, these pretraining data sets are so big (think: all the text available on the open web) that when we ask the AIs trained on them any given question, it's difficult to know if the answer just happens to be in that ocean of data already.

In any case, there is now ample evidence that these large language models are capable of some form of reasoning, however primitive by human standards, says Sayash Kapoor, a third-year Ph.D. student at Princeton who researches and writes about the

guage models is that, for example, we might soon have AI-based assistants that are completely personalized to data specific to us. Google is already attempting a first version of this—an update to its Bard generative AI allows it to search and synthesize across all of your emails, calendar items and documents, as long as they are already in Google's system—but it's primitive and prone to error.

In the not-too-distant future, such systems might be better able to refashion themselves when fed our personal data, in a way that is analogous to how humans continuously form new

that while they have been trained on huge volumes of information, they might not have access to things that aren't available to be scraped from the web; they are only as up-to-date as the body of information they were last trained on; and that even with all of that data inside them, they can struggle with some kinds of reasoning, for example as in mathematics.

When large language models are given access to the same kinds of resources humans already have access to, the real potential of future versions of "AI for X" services and startups becomes apparent. Rather than just offering access to what's really a licensed and re-branded version of an existing foundation model, these startups can start to integrate all kinds of other data and services. "AI for legal advice" would integrate databases of legal decisions, say, or "AI for diagnoses" would tap in to databases of medical literature. These systems would leverage the primitive reasoning ability of large language models to get people answers to questions that are much more reliable than the frequently flawed and made-up answers that they are currently capable of.

Hard to imagine

What the world will be like when we all have these new kinds of cognitive aids is as difficult to predict as railroads, cars, jet planes and rockets would have been from the perspective of those first builders of steam engines.

What's more, there remain many barriers to this promised nirvana of plain-language interfaces for AI assistants that can tap in to the superpowers of the internet on our behalf. One of them is the cost of running today's generative AIs, which needs to come down before hundreds of millions of us are able to maintain a continuous dialogue with our future AI assistants, rather than just early adopters occasionally asking them targeted questions.

Another barrier is that even the near-future systems that fuse large language models and specialized systems for making them better at particular tasks are, in the

words of Douwe Kiela, CEO of Contextual AI, a kind of "Frankenstein's monster." Fixing the cost issues that arise in such cobbled-together systems, and making them more useful, may require many years of continuous improvements in which engineers optimize every part of these systems to work together harmoniously, while shaving off whatever doesn't serve the customer.

Between the invention of the steam engine and the debut of the locomotive, more than a century elapsed. Meanwhile, a new science was born, which in turn became the midwife of countless other advancements essential to the Industrial Revolution. If the



reasoning about it—is a matter of debate.

Blaise Aguera y Arcas, an AI researcher at Google Research, cites the ability of today's large language models to handle tricky tasks, when prompted with enough information about them, as evidence of their ability to reason. For example, with proper coaxing, it's possible to get a large language model to give a correct answer to basic mathematical questions, even though, say, the product of two four-digit numbers isn't anywhere in its training data.

"Figuring that out means having had to have learned what the algorithm for multiplication actually is—there is no other way

limitations of today's AIs. "But there is also evidence that in many cases memorization in these models is leading to performance claims that may be exaggerated," he adds.

What's next

If you've gotten this far, here's the payoff: If today's large language models are capable of some amount of reasoning, however elementary, it could yield what could be years of rapid advances in the abilities of generative AIs.

In part, that's because language isn't just another medium of communication, like pictures or sound. It's a technology hu-

manies, says Aguera y Arcas. Within, say, two to five years, this could make future AI assistants much better at personalizing their responses to every one of us.

When I asked Aguera y Arcas if such hyper-personalized AI assistants are coming, he said that while he can't comment on any future products from Google, the trajectory of today's AIs means that the existence of such an assistant is "a very obvious implication."

Another implication is that future AIs will be granted new abilities in a way that is similar to how humans gain them—by giving these AIs access to cloud-based software intended for hu-

man that offer those services. The simplest example of this is giving chat-based AIs access to search engines like Google. But of course the internet has many more search engines on it than just Google's—there are repositories for code, for legal decisions, for academic papers, and on and on.

One way that generative AIs are being connected to services originally intended for humans is through "plug-ins." For example, travel search services Kayak (owned by Booking Holdings) and Expedia can both be accessed through ChatGPT through plug-ins, as well as shopping services Instacart and Shopify. The reason large language models need such plug-ins is

development of generative AIs conforms to this pattern at all, its near future will include transformative inventions—AIs expert in different subjects, truly personal assistants—followed by years of refinement, mad scrambles to harness and benefit from these new technologies, and possibly another sort of Industrial Revolution. But rather than a revolution predicated on energy and matter, this one will be based on the manipulation of data and insight.

We can only begin to imagine what that will look like.

Christopher Mims writes The Wall Street Journal's Keywords column. Email him at christopher.mims@wsj.com.

Imagine in the not-too-distant future when AI assistants are fed our personal data, gaining new abilities in a way that is similar to how humans gain them. What the world will be like when we all have new kinds of cognitive aids is as difficult to predict as railroads, cars, jet planes and rockets would have been from the perspective of those first builders of steam engines.

tive AIs contain within them the seeds of countless future applications. Unlocking those applications will require something that is only just getting started—an understanding of how foundation models and generative AI actually work.

To that end, computer scientists, mathematicians, physicists, neuroscientists and engineers are all coming together to create a new area of study: a universal science of machine intelligence. And as they develop it, we're gaining useful insights into what AIs might one day be capable of.

In search of reason

Some researchers, for instance, are convinced that one kind of

to get that right," says Aguera y Arcas.

Other researchers think Aguera y Arcas is overstating the amount of reasoning today's large language models are capable of. Sarah Hooker, director of Cohere for AI, the nonprofit research wing of AI company Cohere, says that some of what people think is reasoning by large language models could just be things they've memorized. This could explain the fact that as these models grow bigger, they gain new capabilities—not because teaching them language gives them the ability to reason.

"A lot of the mystery is that we just don't know what's in our pretraining data," says Hooker. That lack of knowledge comes

mans developed for describing absolutely everything in the world we can conceive of, and how it all relates. Language gives us the ability to build models of the world, even absent any other stimuli, like vision or hearing, says Aguera y Arcas. That is why a large language model can write fluently about the relationship between, say, two colors, even though it has never "seen" either of them, he says.

In addition, language is the interface for countless other systems on the internet that were designed for use by humans, but which can be repurposed by these generative AIs—such as search engines.

The synthesis of all of these observations about large lan-

Should AI Write Doctoral Dissertations?

WSJ Readers Have Plenty of Thoughts

Absolutely not, some argue. It's just a tool, others counter.

BY DEMETRIA GALLEGOS

A RECENT graduate told me about a college professor who has begun assigning two versions of every essay—one created by ChatGPT and a second one that is the student's own work. Accepting that students are tempted to use the new technology, this strategy neutralizes it to some degree, he felt. Students learn how to work with artificial intelligence and learn how to differentiate themselves from it through reflection, critical thinking, intellectual honesty and creativity.

Whether you agree with this approach or not, the one thing that's clear is that artificial intelligence has the potential to disrupt everyday life, posing ethical dilemmas that we—as individuals and as a society—need to resolve.

As part of a series of articles looking at ethical questions raised by AI, we wanted to know what WSJ readers think about the emerging applications of artificial intelligence to academic pursuits. Specifically, we asked:

Would it be ethical for a chatbot to write a Ph.D. thesis, as long as the student looks over and makes refinements to the work? What percent of rewriting would be the minimum to make this acceptable?

Here are some of their responses.

Within limits

Yes, but AI assistance must be acknowledged and the dissertation must be rigorously defended with no AI help.

—Peter Boynton, McLean, Va.

Defeats the purpose

Decidedly not. Ph.D. dissertations primarily demonstrate: 1) their author's mastery of the subject and 2) valuable original research contribution and capability. We cannot see an argument that makes this an acceptable use of generative AI.

—Jenna and Evan Kramer, Washington, D.C.

An insulting question

I find it incredibly insulting that this question is even up for debate. Of course it isn't ethical to have a chatbot write a Ph.D. thesis, even if a student "looks it over" and makes a few revisions.

Thousands of people over the course of centuries have poured their hearts and souls into producing an original piece of scholarship that would mean something to them personally and to the wider academic community. Independent critical thinking is one of the most meaningful aspects of being human, of possessing individual dignity. How could we think for even a second about replacing that with a chatbot, supposing that such a bot is capable of anything similar in the first place?

I'm not an AI-skeptic who believes there are no applications for it in academic research and teaching, but having it literally *compose* an entire thesis goes beyond the pale by any reasonable metric.

Anyone who has a chatbot write a work of scholarship for them should absolutely be disciplined to the same extent that other plagiarists are punished.

—Robert Powers, Dungannon, Va.

AI makes things too easy

I would like to say up front that I did not ask ChatGPT or any other AI to write this answer for me.

To your question, my answer would be "no," at least as things currently stand. Academia (of which I am a part) isn't ready to

relinquish the toil, tears and terror associated with the Ph.D. process. The task of writing "the really long paper" involves certain hoops through which the candidate has to jump, and using AI would make things too easy.

One possible pathway to incorporating AI-generated content into the Ph.D. process would be to have the candidate gather the materials, do the research, create the literature review, and have those verified by the thesis chair, and then dump it all into the AI tool to create a polished finished product. And remember, no matter how fluent it is, AI can't defend your thesis for you.

—Bridget Powell, Champaign, Ill.

Expand readership

It's perfectly fine for ChatGPT to help a student write their Ph.D. thesis, at least in part. To provide an initial outline, get the first ideas on paper, and to smooth out otherwise clunky academic constructions are just the beginnings of where AI can be useful, especially for nonnative-English speakers whose defenses must be written in English. Perhaps with these tools, more people than just the advisory committee will want to read dissertations.

—Brandon Giella, Fort Worth, Texas

AI devalues the degree

I have a Ph.D. Hard won. So NO. In my university, a program was used to detect plagiarism if you copied more than five words in a row. No chatbotting should be allowed.

It's bad enough when students cut and paste from the internet. Plus it completely devalues my years of hard work and my degree.

—Susan Alexander, Luxembourg

Who controls AI?

Allowing AI to "assist" by aggregating data and previously explored concepts on a topic is an advanced form of a Google search engine. Writing and presenting your paper will take on greater weight.

I am concerned that this process opens itself to stratification and manipulation. Someone or small groups of someones will manipulate the AI toward certain theories or concepts. Politics, power and AI...

—Robert Dingess, Wayne County, N.C.

Feedback, yes. Writing, no.

No, this is not ethical and my university specifically prohibits such writing. Feedback on one's own writing (by a colleague or chatbot) is fine as long as that feedback is publicly acknowledged and specified clearly.

—Nicola Pohl, Bloomington, Ind.

AI is a tool

It is acceptable for humans using tools to achieve results. Is it acceptable to use a calculator in a math exam? Yes! Therefore AI would be an acceptable tool for a Ph.D. thesis as well.

—Martin Schatz, Holly, Mich.

A reluctant yes

As a college professor I face a double dilemma with ChatGPT. I need the students to know the material I am teaching, but also need to know that they are prepared for a future with ChatGPT and other AI. I reluctantly want them to use it, as they will anyway, but also want to know when it is not their work, but an AI's.

Let's get real: ChatGPT searches the web and grabs concepts not of its own devising but other people's. It is, in itself, a

huge plagiarizer. When students use ChatGPT or other AIs in my classes, I require them to provide proper credit to their source, including an artificial intelligence source.

—David P. Bugay, Irvine, Calif.

Is learning the goal?

I am a teacher. Here are the questions I have for students: Is learning the goal? Is becoming a certain type of person the goal? Is the betterment of society and humans the goal? Is the glory of God the goal? Then absolutely not. In education, you are the product, not the thesis, so yes, the process matters. So you can't have a machine do it for you.

—Brad Grizenko, Wake Forest, N.C.

To our detriment

No, it definitely wouldn't be ethical for a student to use an AI to write a Ph.D. thesis, a master's thesis or any other intellectually challenging educational paper.

These "think" projects are designed to challenge and develop the writer's thought process of question-generation, data collection, analysis and logical thinking, not "How can I ask the AI to solve my homework problem?"

The end result of this would be a nation of intellectually crippled (and possibly emotionally stunted) citizens asking their smartphones how to do everything, including who to vote for in the next election.

—John Parziale, Ocala, Fla.

Where's the value?

If the AI revolution is teaching us anything, it is about what we really value and what the core meaning is behind something. Is a thesis worth something because it is well written or because it contains original ideas and research?

Ph.D.s are bestowed on individuals who add that original value to society. If the research

was conducted by a student but added to a thesis via an AI then this would still warrant a Ph.D. If no original research was done outside of AI prompting, then this doesn't warrant one.

But that also doesn't mean idea organization via AI isn't of value to society. Our highest-paid business leaders direct and organize groups to produce value as well. We don't, however, give them Ph.D.s.

—Jeff Schloemer, Menlo Park, Calif.

Not for a thesis but...

It would be unethical to use a chatbot to write a Ph.D. thesis. The work must be the product of the candidate's intellect. Full disclosure: I am using Grammarly to check my answers to WSJ's questions.

—William Mackey, West Hartford, Conn.

Rewards to the incompetent

This is unethical. AI is an equalizer in that it allows someone who isn't smart enough to get into a university to get in, to pass the exam, to write the paper, submit the thesis. But eventually that entirely incapable person has to do the job.

I think AI is being used for all the wrong reasons. It's like taking your photo and retouching it until you're perfect, like the supermodels in the magazines. But then eventually someone will see you in person and say, "Who are you?"

—Deena Semeniuk, Phoenix

The real problem

If your thesis is so banal as to be AI-generative you probably need a new adviser.

—James Murphy, Alameda, Calif.

Demetria Gallegos is an editor for *The Wall Street Journal* in New York. Email her at demetria.gallegos@wsj.com.



JOURNAL REPORT | TECHNOLOGY

How Meta Platforms Plans to Incorporate AI Into Its Products

Chief Product Officer Chris Cox on the ways artificial intelligence can improve group chats and why Meta is creating AI chatbots with personalities

META Platforms, the parent of Facebook and Instagram, is racing to incorporate generative AI into its family of apps and the metaverse after ChatGPT took the world by storm last November.

Playing a central role in this effort is Meta's chief product officer, Chris Cox.

Wall Street Journal senior personal-technology columnist Joanna Stern spoke with Cox at the Journal's annual Tech Live conference. Cox talked about Meta's plans for wrapping artificial intelligence into its products, its introduction of chatbots played by celebrities such as Naomi Osaka and Snoop Dogg, and the potential of AI to help businesses. Here are edited excerpts of the conversation.

Awe-inspiring

• **WSJ:** Take us back to November 2022. ChatGPT just launches. It becomes clear this is going to be a huge thing. Mark Zuckerberg calls you. What does he say?

• **CHRIS COX:** We had been doing advanced research in natural-language processing and machine learning for years. We had made important contributions to open source, including things such as PyTorch, which is an important part of how developers can have easier access to machine-learning tools.

AI also has been a very important part of our products for a long time. If you look at Reels and TikTok specifically, one of the reasons these products are so successful is because of the applica-

tion of machine learning and sparse networks on the problem of recommending content. And that goes all the way back to 2017.

• **WSJ:** But when it becomes clear that ChatGPT is going to be a consumer product, you guys somehow shifted to thinking, "Hey, we've got to get something out there."

• **COX:** We were surprised at its quick success and just really impressed. It's a nicely done product. It was very thoughtfully created.

It has that property that some products every once in a while have, which is they inspire awe. You can count on one hand the number of products that do that in a decade. ChatGPT was like that, for sure.

So, yes, we immediately asked the question: What are the ways that we can start to think about large language models and latent diffusion models, which is the image-generation models, in concert with some of the stuff we had already been thinking about.

I started building out the team in February. Llama, Meta's large language model, was launched in February. Llama 2 was launched in June. We've continued to open-source more work that's been coming out of our AI team. So we're trying to get products out the door.

• **WSJ:** You're rolling chatbots into Instagram, Messenger, WhatsApp. What is your hope? That we're all going to con-

verse with chatbots alongside our friends?

• **COX:** We recently announced that in WhatsApp or Messenger or Instagram, you will be able to chat with a Meta AI. You can ask it anything you want. It is tuned for safety and security, so it won't get into nasty conversations.

We did a partnership with Bing for search. Once you have it connected, you can ask it about stuff that's going on now, and you won't get something that's six months old or nine months old. That is one of the types of problems you need to solve to make these useful.

You also can use the AI in a group chat. A lot of what happens

in the conversations on Messenger and WhatsApp is coordination. "Where should we meet up? Where should we get dinner?" And a lot of times somebody is going and searching and you're pasting links back and forth. So the basic idea is what if you could just have all of that happening in one place? You could just ask the AI, "Hey, we're making pumpkin pie tonight for Thanksgiving. What should we pick up?" And you just have it all there. It's quite useful. It can also be entertaining.

• **WSJ:** You now have AI chatbots based on celebrities. The celebrities aren't playing themselves, but rather a character.

• **COX:** Exactly. We researched how do you make these chatbots engaging? What is it that works for people? And there are a lot of people who want it to have some personality. They don't want it to feel like a robot.

So we chose a few verticals

where there's a lot of conversation. Anime is one. So Tamika, one of the AIs, is really into anime. Then we looked for people who had that interest who could play them. Naomi Osaka, it turns out, is interested in anime.

Snoop Dogg plays another one, a dungeon master. It's absolutely hilarious.

• **WSJ:** But in this world of celebrity deepfakes, and this world of we're not really sure now whether what we're seeing is real on the internet, why go this route?

• **COX:** We've been very transparent that these aren't the celebrities playing themselves. Having anything that doesn't make it clear to people what's going on is a problem. In the product, we're very open about communicating in the chat thread, when you start the thread, in the interactions that it's an AI.

The business case

• **WSJ:** You've gone a little bit in the opposite direction of ChatGPT, which was designed to not have human aspects.

• **COX:** I think there's room for a lot of different models here.

Our AI assistant is called Meta AI, and it's similarly neutral. It has a neutral tone. It has a neutral personality. It's tuned for dialogue. But I also think there's room for more expression and playfulness.

This is going to be opened up to creators and most important for businesses. There are over 100 million businesses using WhatsApp. If you travel to places like India, Brazil and Mexico, you're very likely to stumble into a hairstylist who says, "WhatsApp is how I do everything." That includes setting up the business. Finding customers. Coordinating appointments. In some cases, like in India, accepting payments. There is a huge demand from businesses for better tools to help them reach the people that care to find them.

For me, one of the most profoundly impactful applications in the near term for AI is helping businesses be more effective.

Write to reports@wsj.com.



Chris Cox of Meta Platforms says people want chatbots to 'have some personality.'

OpenAI and The Tricky Path Forward

Continued from page R1

they do things that astonish you. And I think AGI will be the best tool humanity has yet created.

With it, we will be able to solve all sorts of problems. We'll be able to express ourselves in new, creative ways. We'll make just incredible things for each other, for ourselves, for the world, for this unfolding human story. And it's new, and anything new comes with change, and change is not always all easy.

• **WSJ:** When will it be here, and how will we know it's here?

• **MIRA MURATI:** Probably in the next decade, but it's a bit tricky. Often we talk about intelligence, and how intelligent this is, or whether it's conscious, and sentient, and all of these terms—and they're not quite right. Because they sort of define our own intelligence, and we're building something slightly different.

• **WSJ:** Some people have not been thrilled about some of the data you guys have used to train some of your models. Hollywood, publishers. As you work toward these next models, what are the conversations you're having around the data?

• **ALTMAN:** One, we obviously only want to use data that people are excited about us using.

But one of the challenges has been different kinds of data-owners have very different pictures. So we're just experimenting with a lot of things. We're doing partnerships of different shapes, and we think like with any new field, we'll find something that sort of just becomes a new standard.

Also, as these models get smarter and more capable, we will need less training data. I think the conversation about data, and the shape of all of this, because of the technological progress we're making, is about to shift.

• **WSJ:** Well, publishers, like mine, they want money for that data. Is the future of this entire race about who can pay the most for the best data?

• **ALTMAN:** No. That was sort of the point I was trying to make. The thing that people really like about a GPT model is not fundamentally that it knows particular

your home, in your educational environment, in your work environment, and maybe when you're having fun.

That's why it's actually so important to get it right. And we have to be so careful about how we design this interaction so that ultimately it's elevating, fun, makes productivity better, and it enhances creativity.

We also want to make sure that, on the product side, we feel in control of these systems, in the sense that we can steer them to do the things that we want them to do and the output is reliable. As it has more information about your preferences, the things you

the only player here. There's going to be many people. So we get to put our "nudge" on the trajectory of this technological development. But: a) We really think that the decisions belong to humanity, society as a whole. And: b) We'll be one of many actors building sophisticated systems here. There will be competing products that offer different things, there will be different kind of societal embraces and pushbacks, there will be regulatory stuff.

I personally have deep misgivings about this vision of the future where everyone is super close to AI friends, more so than human friends. I personally don't

ios that deserve great caution.

And, again, we all do this because we're so excited about the tremendous upside and the incredibly positive impact. And it would be a moral failing not to pursue that for humanity. But we've got to address—and this happens with many other technologies—the downsides that come along with this.

It means that you are thoughtful about the risks. You try to measure what the capabilities are, and you try to build your own technology in a way that mitigates those risks. And then when you say like, "Hey, here's a new safety technique," you make that available to others.

Detection tools

• **WSJ:** Right now there's no tool, from OpenAI at least, that I can put in an image or some of the text, and ask, "Is this AI-generated?," correct?

• **MURATI:** For image, we have technology that's almost 99% reliable. But we're still testing it, it's early.

• **WSJ:** Is this something you plan to release?

• **MURATI:** Yes.

• **WSJ:** For both images and text?

• **MURATI:** For text, we're trying to figure out what makes sense. For images, it's a bit more straightforward problem. Often we will experiment, we will put out something, we will get feedback. And sometimes we'll take it back, make it better and roll it out again.

• **ALTMAN:** This idea of "watermarking" content is not something everybody has the same opinion about what is good and what is bad. This is why we want to engage in the conversation. We are willing to follow the collective wishes of society on this point.

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OpenAI's CEO, Sam Altman, and Chief Technology Officer Mira Murati at WSJ Tech Live.

knowledge. There are better ways to find that. It's that it has this larval reasoning capacity, and that's going to get better and better. That's really what this is going to be about.

AI relations

• **WSJ:** Is there a future where we have deep relationships with this type of bot?

• **MURATI:** It's going to be a significant relationship. Because we're building the systems that are going to be everywhere: in

like, the things you do, and as the capabilities of the models increase, it will become more personalized.

And it's not just one system. You can have many such systems personalized for specific domains and tasks.

• **WSJ:** That's a big responsibility, though. And you will be sort of in control of people's friends, maybe it gets to being people's lovers. How do you think about that control?

• **ALTMAN:** We're not going to be

want that. I accept that other people are going to want that, and some people are going to build that, and if that's what the world wants, and what we decide makes sense, we're going to get that.

The 'fear' issue

• **WSJ:** We've got simple chatbots now. How do we go from that to this fear that is now pervading everywhere about AI?

• **ALTMAN:** It doesn't take much imagination to think about scenar-

watsonxTM

uses your
trusted data

to build **AI**
you can trust ✓
for **your**
agency.

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JOURNAL REPORT | TECHNOLOGY

What Is the Government's Role in Developing—and Regulating—AI?

Fei-Fei Li of Stanford and the Commerce Department's Alan Davidson agree that artificial intelligence has the potential to do a lot of good. But, they say, thoughtful regulation is crucial.

AS ARTIFICIAL intelligence develops, it becomes more of a critical issue in politics. How should the technology be regulated? How important is it in our competition with China? Does the field have enough diverse voices?

For insight into these issues, The Wall Street Journal's Georgia Wells spoke with Fei-Fei Li, co-director of the Stanford Institute for Human-Centered Artificial Intelligence, and Alan Davidson, assistant secretary of commerce for communications and information at the Commerce Department, at the Journal's annual Tech Live conference. Here are edited excerpts of the conversation.

The state of play

WSJ: What are the most promising possibilities and most serious risks with AI?

FEI-FEI LI: What I see is that there is a lot of potential for this to be an empowering technology to human lives, to human productivity, to human well-being if we collectively use it well. Whether it's for healthcare to empower our nurses and doctors, to help our patients, to discover more drugs or more cures for diseases, or whether we're talking about agriculture or climate.

In the meantime, we're looking at biases and privacy issues, we're looking at weaponization, we're looking at other potential risks. For me, one of the leading risks right now is the severe imbalance between the private and public-sector investment of AI in this country.

WSJ: Alan, you lead an agency that might be able to address some of the concerns here. What's the status, say, of the AI safety-rules initiative?

ALAN DAVIDSON: The starting point for the administration has been a strong belief that responsible AI innovation is going to have tremendous benefits for our society and for people. But we're only going to realize those benefits if we deal with the very real risks that are in front of us. To get ahead of that now, we've been working on, first and foremost, a set of commitments from AI companies around safety, security and trust. We've gotten those, and now we're working on expanding those and doing more. We need to have these guardrails in place to open up innovation.

WSJ: Fei-Fei, you must have a position on AI regulation.

LI: In 2023, I don't think there's any doubt that there needs to be some kind of thoughtful regulation. Right now, I really think where rubber meets the road is when AI applications are touching human lives and our world, and we need urgent understanding of how to put in good measures, for example, with the FDA, SEC, EPA. In all these different areas, where we have an existing regulatory framework, we need to be looking at how to update that urgently, because this technology is going to update a lot of applications fast, and this is where human lives and human well-being are being impacted.

Shoot for the moon

WSJ: You've compared the effort to develop AI to the excitement or commitment when the government invested in NASA at such a high degree. That's the degree of commitment that you'd hope to see?

LI: Yes, because I believe this technology is as big, or even bigger, than the space technology. There are several reasons the public sector needs that investment and needs that boost. First of all, as the public, we need

trusted scholars, institutions to help us to evaluate and assess this technology. We cannot just leave it to the private sector. So we need good partnerships and public-sector evaluation assessment.

We also need the public sector to be at the forefront with the private sector in innovation. Think about human genome mapping. That was actually a technology where both the public sector, as

business. It's not fair for companies to have to take on nation-states like that. So you're going to see, and will continue to see, forceful action from this administration to protect competition and openness in this space.

WSJ: Specifically for AI?

DAVIDSON: Specifically for AI. Even today, we had an announcement around a set of new



The Commerce Department's Alan Davidson, center, and Stanford's Fei-Fei Li, right, at WSJ Tech Live.

well as the private sector, raced to the finish line together.

WSJ: What's your assessment of the race for tech dominance between the U.S. and China?

DAVIDSON: We are pushing for a vision with our allies of these technologies as tools that will empower people, that will protect people's safety, that will be competitive, that will open up economic opportunity for people. We are going to keep promoting that vision.

At the same time, we see in China a country that has benefited from intellectual-property theft, that keeps its markets very closed to a lot of Western companies, where it's very hard to do

changes to our export controls around the most powerful semiconductors that are being used in China. This is a rule that we had put out a year ago, and we've tightened it up because some of the places where it was being circumvented.

The diversity question

WSJ: Fei-Fei, there are so many well-respected researchers in AI who are women. Do you feel their views are adequately represented in politics and in political circles?

LI: No. Especially in the latest wave of AI discussions, whether it's happening in board rooms, or in forums, or in the political set-

tings on Capitol Hill, or in general, women's voices are not well represented. The megaphones are not held by women mostly. I'm lucky sometimes I get invited. But I know my colleagues, especially women and people of a diverse background, are not at the table oftentimes.

WSJ: Are you optimistic about the future for women and people of color in artificial intelligence?

LI: I'm optimistic when I'm working hard and hoping I'm making a difference. But it's very much an uphill battle, and the slope of the uphill battle has increased more in the past few years. It's getting worse.

There's some good news. One is the sheer number of young

generations of students and young people interested in tech and AI has increased. But have their voices increased? Especially in the leadership, especially where decisions matter today? No, and I'm hopeful because I'm still in the battle, and I'm still fighting the fight. But it's not easy.

DAVIDSON: Inclusion is not negotiable. Diversity is essential if we're going to succeed in this space. We're learning this lesson again and again.

Write to reports@wsj.com.

Will AI Bring Utopia or Dystopia? A Venture Capitalist Picks Utopia

Vinod Khosla says artificial intelligence will cause great abundance—more than enough to share

THE FUTURE of AI is in many ways a blank slate—a place where many people place all sorts of fears

but where many investors see all sorts of potential.

To explore the utopia vs. dystopia scenarios, The Wall Street Journal's Jason Dean spoke to Vinod Khosla, founder of venture-capital firm Khosla Ventures, at the Journal's Tech Live conference. Here are edited excerpts of the conversation.

How high?

WSJ: The venture-capital startup world is still in quite a slump after a long expansion. You've been a tech investor and entrepreneur for more than 40 years. How do you see this current state of affairs?

VINOD KHOSLA: We saw a lot of excess in investments. But investors who are disciplined did well. We're seeing the same in the AI hype cycle. One still has to be disciplined. I like to say most investments in AI today, venture investments, will lose money. But

more money will be made than lost if one is disciplined early and thoughtful about where to invest.

WSJ: You were the first outside investor in OpenAI; I think \$50 million at about a \$1 billion valuation back then. Earlier this year, it was about \$30 billion. We reported recently that they're planning a share sale valued at nearly \$90 billion. Is it worth \$90 billion

already? Where's the ceiling?

KHOSLA: When I look at the landscape for AI investments, the most valuable thing is not software. It's human beings with big expenses [that AI could reduce or eliminate]. If you take a million doctors and each makes \$300,000, that's a \$300 billion expense, just in the U.S. alone; probably 10 times that, globally. Those are trillions of dollars. If you look at accountants, you could count the same kinds of numbers, trillions of dollars spent. I believe AI



will be able to do, within 10 years, 80% of 80% of the jobs that we know of today.

WSJ: Will venture capitalists be replaced?

KHOSLA: I can't say they won't. It's very hard to predict. But anywhere we rely on human expertise, AI will have that expertise better, and it will have broader information. Take an oncologist treating a patient for breast cancer. It's very unlikely that they remember the last 5,000 papers on a certain breast cancer. But the AI will know that, and the AI will prescribe the right treatment for the patient. It will be a much better oncologist than the oncologist.

Upside and downside

WSJ: When you talk about 80% of doctors, 80% of accountants, etc., being replaced or potentially replaced in as little as 10 years, is that a good thing?

KHOSLA: We've gone through that transition before. In the early 1900s, the majority of jobs in the U.S. were in agriculture. By 1970, it was 4%.

The biggest problem is that AI will cause great abundance, great GDP growth, everything economists love—and increase income disparity. The good news is, if [AI allows us to] change GDP growth, say, for the next 50 years, from 2% to 4%, there's more than enough abundance to share.

Could venture capitalists be replaced by AI? 'I can't say they won't,' says Khosla.

WSJ: A lot of us watch science-fiction movies that are described as dystopian and say, "God, I hope that never happens." People in your industry seem to watch them and say, "I'm going to make that happen." What is the disconnect?

KHOSLA: Is it fun to have a job working at one assembly line at an auto plant for eight hours a day, for 30 years, screwing one type of wheel on? It's not a fun job.

[We will even be able to give people] free therapists. The first large language model AI therapists got approved in the U.K. for one of our companies. It's now doing intake at 33% of all mental-health clinics in the National Health Service. And the quality is, I believe, higher. When you have humans, the level of consistency in medical care is so varied.

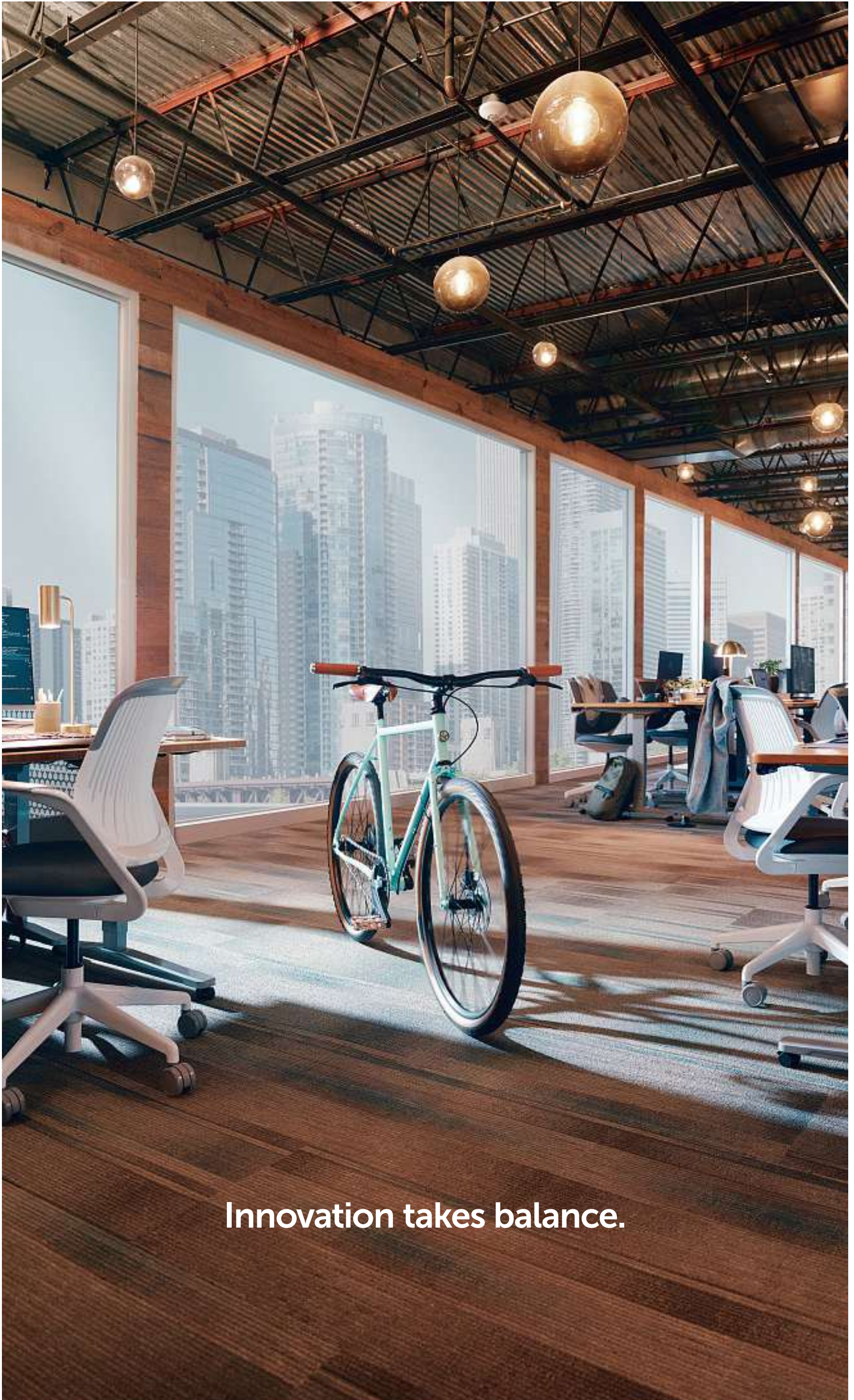
WSJ: I don't want AI that makes stuff up to be giving people psychological advice.

KHOSLA: Even an AI needs to know when to call in a human specialist. That's why I say 80% of these jobs. There will always be a human element. And humans will be free to do fun jobs.

AI can do more for humanity in creating a utopian world and world of abundance. I grew up in India and I saw people without homes, no access to medical care, no access to transportation.

So, I have a view everybody should have access to 24/7 medical care. Every one of these kids should have a personal tutor available to them. These are real capabilities that AI can offer.

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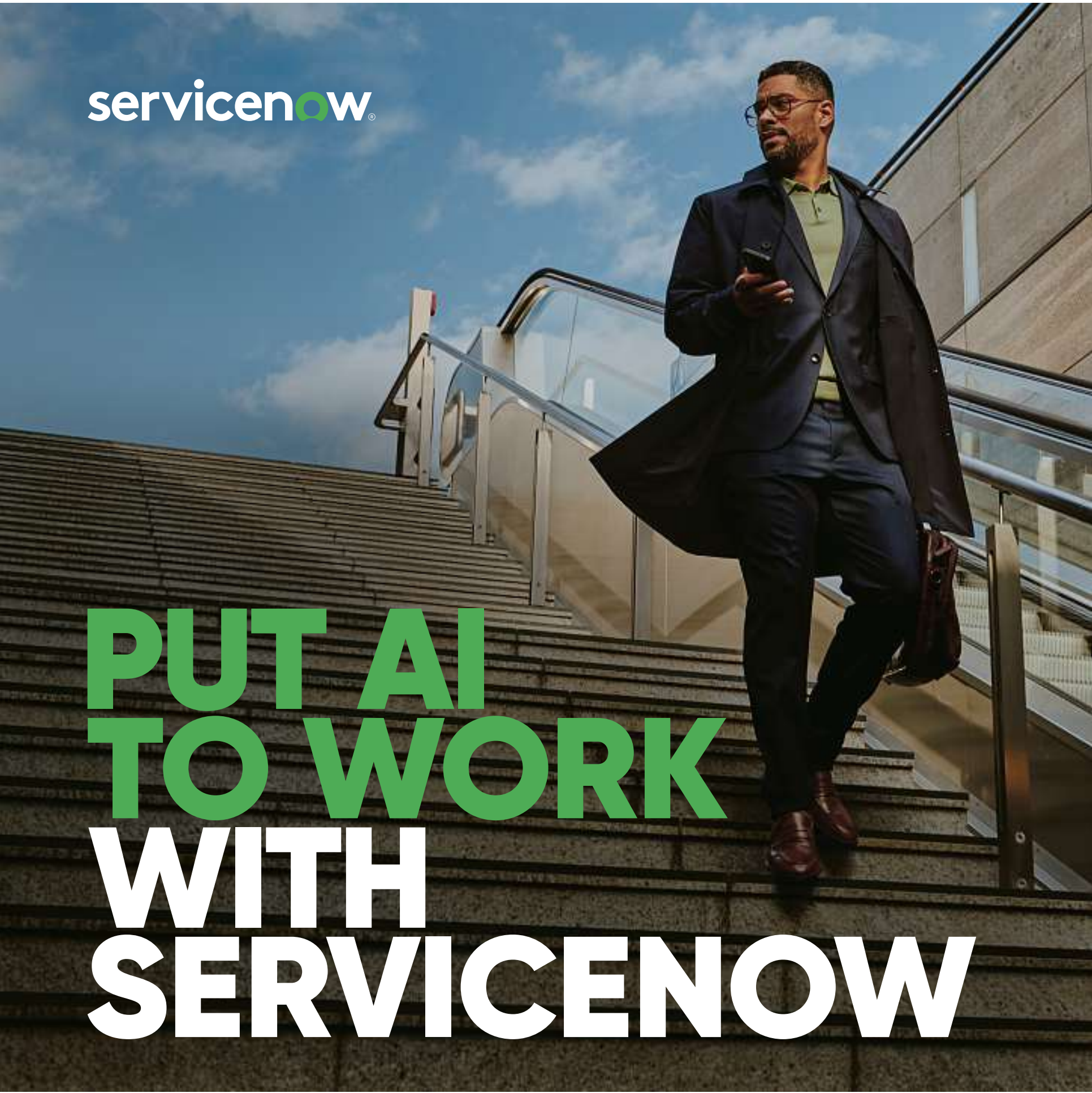
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If that's not enough, endless Gen AI "solutions" keep popping up like whack-a-moles. There's AI for this. AI for that. There's even AI for ... creating AI. And you can't throw a rock without hitting some other company promising the future. Big players. Little players. Blue chips. Start-ups. Unicorns. And companies you've never even heard of.

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