THE WALL STREET JOURNAL.

DOW JONES | News Corp ****** MONDAY, MARCH 19, 2018 ~ VOL. CCLXXI NO. 64 WSJ.com ★★★★ $4.00

Last week: DJIA 24946.51 ▼ 389.23 1.5% NASDAQ 7481.99 ▼ 1.0% STOXX 600 377.71 ▼ 0.1% 10-YR. TREASURY ▲ 13/32, yield 2.848% OIL $62.34 ▲ $0.30 EURO $1.2291 YEN 105.98

What's News

Business & Finance

Natural gas's reign as an energy leader is being threatened by state regulators and environmental groups pushing for renewable energy. **A1**

◆ **CACI has** made a $7.2 billion bid to buy CSRA to break up the information-technology provider's sale to General Dynamics. **B1**

◆ **Teachers are** staging strikes and demonstrations over proposals to install limits on pensions and wage increases. **A3**

◆ **Facebook said a firm** with ties to the Trump campaign improperly kept user data for years despite saying it had destroyed the records. **B1**

◆ **Baidu, Alibaba** and Tencent are plowing millions of dollars into electric-vehicle startups. **B4**

◆ **Meredith** is expected to lay off 200 to 300 staffers as soon as this week after recently completing the acquisition of Time. **B3**

◆ **Blackstone** guaranteed Schwarzman new rewards for his contribution to the firm as a founder when he chooses to retire, and even after his death. **B2**

◆ **U.S. regulators** expect the number of commercial drones and people flying them to quadruple over the next five years. **B3**

World-Wide

◆ **China's Xi** discarded the leadership structure he inherited and is kicking off his second term with a handpicked team of trusted lieutenants. **A1**

◆ **Trump** and his legal team intensified attacks on the special counsel's probe into possible Russian election interference. **A1**

◆ **Putin won** re-election as president by a wide margin, strengthening his hand amid an escalating confrontation with the West. **A6**

◆ **Trump will** call for new steps to combat the opioid epidemic, including a push to reduce prescriptions for opioids by a third. **A3**

◆ **Democrats** regained a double-digit advantage over Republicans, and Trump's approval rating improved, a WSJ/NBC News poll found. **A4**

◆ **The U.K.** government said it has evidence that Russia has spent the last decade secretly developing nerve agents to use in assassinations. **A6**

◆ **Newly disclosed text** messages suggest the judge who recused himself from overseeing the case of Mike Flynn had a personal friend connected to the matter. **A4**

◆ **Turkish forces** have captured the town center of Kurdish-controlled Afrin in northern Syria. **A9**

CONTENTS

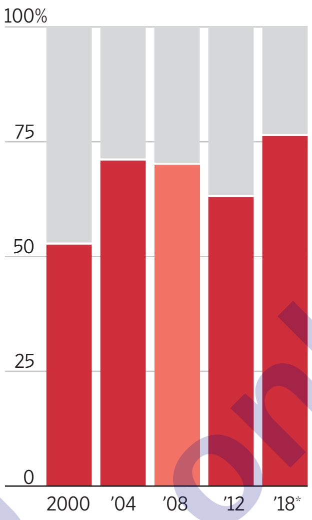
Putin Shuts Out the Opposition in Election to Extend His Rule


MAXIM SHEMETOV/REUTERS

WARMING UP: Russian President Vladimir Putin, at a rally Sunday in Moscow, won re-election according to preliminary results, giving him a new six-year term. **A6**

President Vladimir Putin has dominated Russian politics for nearly 20 years; ally Dmitry Medvedev served one term as president, when Mr. Putin was prime minister.

Share of vote in Russian presidential elections



*Preliminary results
Source: Russia's Central Election Commission
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China's Xi Sets Stage for Changes

Empowered president puts new team in place with eye toward shifts and relations with U.S.

By Chun Han Wong And Lingling Wei

BEIJING—Cleared to stay in power indefinitely, Chinese President Xi Jinping is kicking off his second term with a handpicked team of trusted lieutenants, including an American-trained economist known for pushing pro-market overhauls to run the central bank.

For the next five years, Mr. Xi will look to his inner circle to shore up a sluggish economy, eradicate poverty and enhance China's global standing—while shielding his ambitious agenda from being derailed by rocky relations with the U.S.

Yi Gang, a long-serving vice governor at the central bank, the People's Bank of China, is taking over from his mentor Zhou Xiaochuan, who has run the bank for a decade and a half, people with knowledge of the matter said, adding to an economic team strong on proponents of liberalization.

Two men have also emerged in key roles: Wang Qishan, the former anticorruption chief who took office as deputy head of state on Saturday, and Liu He, the architect of Mr. Xi's economic policies, who was promoted to vice premier Monday.

Part of Mr. Liu's remit will include oversight of the central bank and other financial regulators, effectively becoming the nation's economic czar.

Meanwhile, China's legislature on Sunday elected Yang Xiaodu, a leading official in the Communist Party's internal disciplinary watchdog, as director of the national supervisory commission, placing a powerful government agency firmly under party control. The new anticorruption body will extend the party's policing to tens of millions of officials and public-sector workers.

Please see CHINA page A8

Trump Steps Up Attacks On Probe

WASHINGTON—President Donald Trump and his legal team over the weekend intensified attacks on the special counsel's probe into possible Russian election interference, departing from a previously more cooperative posture and prompting more urgent warnings from senators not to undermine the investigation.

By Louise Radnofsky, Rebecca Ballhaus and Aruna Viswanatha

In his first Twitter post to target the special counsel, Robert Mueller, by name, Mr. Trump on Saturday said the probe "should never have been started in that there was no collusion and there was no crime." On Sunday, the president mentioned Mr. Mueller again, suggesting his team of prosecutors consisted of "hardened Democrats" intent on taking down the Republican president.

The White House circulated a statement Sunday night from Ty Cobb, the White House lawyer handling the Russia probe. "In response to media speculation and related questions being posed to the Administration, the White House yet again confirms that the President is not considering or discussing the firing of the Special Counsel, Robert

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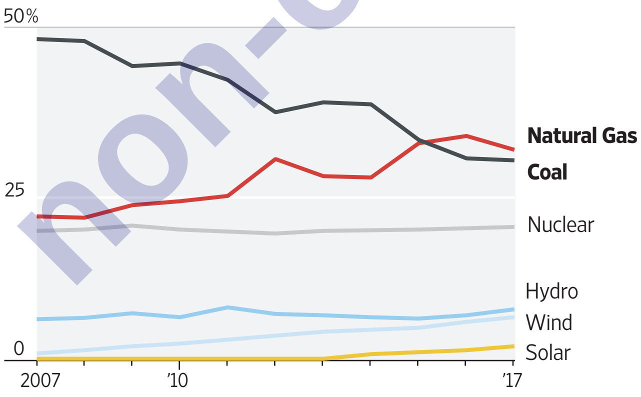
◆ Congress prepares for debate on spending bill........................ A4
◆ Poll shows both Democrats and Trump gaining favor.... A4

Power Shift

Natural gas has recently overtaken coal as the top fuel for power generation.

Percentage of U.S. electricity generated, by fuel type



Note: Totals may not equal 100% as smaller types aren't included.
Source: Energy Information Administration
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Natural Gas's Reign As Top Fuel Tested

By Erin Ailworth

Natural gas overtook coal as the top fuel for making electricity in the U.S. two years ago. But its brief reign is under assault in some parts of the country.

State regulators, renewable-energy advocates and environmental groups are arguing that some existing and proposed gas plants aren't needed or should be replaced by renewable energy.

In states including Arizona, Michigan and Massachusetts, the future of gas plants is being questioned. But nowhere is gas under more fire than in California, where regulators are saying no to new gas plants and looking to get rid of older ones.

Earlier this year, the California Public Utilities Commission directed the state's largest utility, Pacific Gas & Electric Co., to solicit bids for renewable energy and storage projects to replace three costly gas plants.

PG&E Corp., parent of Pacific Gas & Electric, said it currently has no plans to build new gas-fired generation. Power companies in California also recently abandoned plans to build two gas plants, a result of the state's preference for batteries, wind farms and solar panels.

California's move away from natural gas is driven by aggressive environmental goals, including getting 50% of its power from renewables by 2030. Currently, 30% of California's power comes from renewables, according to the state.

"You're not going to get anywhere if you are just adding more and more gas," said Robert B. Weisenmiller, chair-

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The Next Real-Estate Crisis: A Shortage of New Homes

America is building houses at near the lowest level in history despite the strong economy, bedeviling buyers

By Laura Kusisto

GRAND RAPIDS, Mich.—America is facing a new housing crisis. A decade after an epic construction binge, fewer homes are being built per household than at almost any time in U.S. history.

Home construction per household a decade after the bust remains near the lowest level in 60 years of record-keeping, according to the Federal Reserve Bank of Kansas City.

What makes the slump puzzling is that by most other measures, the American economy is booming. Jobs are plentiful, wages are on the rise and the stock market is near record highs. Millennials, the largest generation since the baby boomers, are aging into home ownership.

Bob Snowden, a home builder in the Grand Rapids, Mich., area thinks he understands what's happening. He says he gets calls practically every day from families in the thriving

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THE LOWLY LEGUME HAS ITS DAY

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BATTERY LIFE POWERS AHEAD

BUSINESS & FINANCE, B1


GETTY IMAGES

BREAKING THE BANK FOR COINS

JOURNAL REPORT, R1

Will Office Love Ever Be the Same? Not in Romance Novels

* * *

Fiction writers rethink workplace behavior; 'Ben from Accounting'

By Ellen Gamerman

While writing her new romance novel, "Reunion with Benefits," a love story about a female executive and her playboy ex-boss, author HelenKay Dimon felt compelled to report the relationship to H.R.

"I don't know how you'd ever write a workplace romance without thinking, 'How does human resources feel about this?' " said Ms. Dimon, who consulted a friend in H.R. at an insurance company as she revised the book due out this June.

The 50-year-old former lawyer from San Diego whose recent novel "Pregnant by the CEO" was her 25th romance for publisher Harlequin, looked closely at the hero of her new book, Spence Jameson, and revamped some of his dialogue late last year. She didn't want

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U.S. NEWS

THE OUTLOOK | By Nick Timiraos

Fed's Rate View Is Likely to Sharpen

Federal Reserve officials meeting this week will weigh whether they need to raise interest rates more aggressively in coming years because of recent tax cuts and government-spending increases.

The Fed in December expected a gradual path of rate rises would allow the economy to keep expanding without overheating. They penciled in three rate increases this year and two each in 2019 and 2020.

Since then, however, the burst of fiscal stimulus, together with steady growth and very low unemployment, has raised questions about how long they should maintain that approach, according to recent interviews and public comments.

Fed officials are still likely to approve a rate increase at their meeting ending Wednesday. They will also release updated projections showing whether more of them now favor four rate moves this year rather than three.

A bigger question, though, is whether more officials signal support for adding more rate rises next year and in the year after, and whether they might keep lifting rates over time to a higher end point than they had envisioned in December. These decisions will ripple widely through the economy, influencing borrowing costs for consumers, businesses and investors.

Fed policy has markets on edge because, for the first time since the central bank began raising rates in 2015, officials are now more likely to dial up than to slow down their pace of increases.

This Fed meeting is also the first to be led by its new chairman, Jerome Powell, who had promised continuity with the gradual rate rise path charted by his predecessor, Janet Yellen.

Because of the added fiscal stimulus, "the world inherited by Powell as Fed chair is very different from the world Yellen planned to hand on to her successor," said Krishna Guha, vice chairman of Evercore ISI, a research firm.

Mr. Powell, in recent congressional testimony, didn't indicate how much he expected to raise rates in coming years. But when asked what could cause the Fed to move four times this year, he cited fiscal policy among several reasons why his economic outlook had strengthened since December.

"We've seen some data that will, in my case, add some confidence to my view that inflation is moving up to target. We've seen continued strength around the globe, and we've seen fiscal policy become more stimulative," he said.

Another significant sign of the shift in thinking at the Fed were recent comments by Fed governor Lael Brainard, who had emerged in recent years as an influential advocate for raising rates very cautiously. In a speech this month, she said she had become more confident that inflation will rise, allowing officials to continue raising interest rates. She also cited the tax cuts and spending increase among the factors that could spur stronger growth.

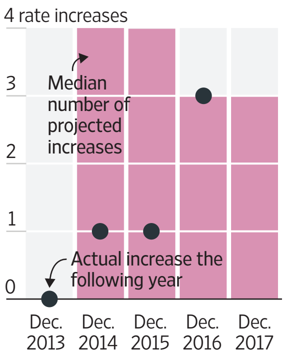
Ms. Yellen had sought to navigate between two conflicting signals cited by Ms. Brainard: falling unemployment that, by November, had dropped to 4.1%, a 17-year low, and inflation that was proving softer than expected and running below the central bank's 2% target.

Ms. Yellen's solution was to raise rates gradually—just three times last year. That would let low unemployment

Rate Expectations

More Fed officials are likely to signal this week they expect to raise interest rates four times this year.

Expected rate increases in the following year



Source: Federal Reserve

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nudge inflation up to the Fed's goal without sending price pressures out of control.

The latest fiscal-policy changes present a curveball.

President Donald Trump has said he hopes the tax cuts enacted in December will pour "rocket fuel" into the economy. Many Republicans say this can work without spurring excessive inflation by encouraging businesses to invest and raise productivity.

Congress also approved in February a boost to federal spending over the next two years, which many analysts believe will fuel demand without improving productivity.

Wall Street economists expect the measures will push unemployment down to the low 3% range next year—a level not seen since the Korean War. No one is quite sure what that could do to inflation or financial stability.

The Fed wants to make sure the economy stays on an even keel. If it raises rates too slowly, it could allow inflation to take off or encourage asset bubbles. If moves too fast, it could curb growth too much, hurting employment and investment.

For now, the Fed has little reason to dramatically modify its plans. But that could change if economic data turns stronger in coming months.

The risk of overheating would force the Fed "to press harder on the brakes at some point over the next few years," said New York Fed President William Dudley in a speech earlier this year.

This scenario worries officials because the Fed doesn't have a good record of cooling the economy to an ideal level without triggering recession.

ECONOMIC CALENDAR

TUESDAY: The Federal Reserve's two-day March policy meeting begins, with the central bank expected to announce Wednesday it will raise its benchmark interest rate for the first time this year.

WEDNESDAY: Brazil's central bank is expected to cut its benchmark rate to 6.5% from 6.75%, further delaying the end of an easing cycle launched in October 2016. Below-target inflation is driving the low-rate policy despite budget shortfalls as the economy struggles to recover from a recession.

The National Association of Realtors releases its report on February **existing-home sales**. Sales of previously owned U.S. homes declined in January, as low inventories and rising prices and interest rates took a toll.

THURSDAY: The Bank of England releases a monetary policy decision, days after U.K. Treasury chief Philip Hammond presented forecasts showing U.K. economic growth should be modestly higher in 2018 than predicted last year. In February, BOE officials signaled they remain on track to lift interest rates in the coming months as they expect global growth to boost the U.K. economy.

FRIDAY: The U.S. Commerce Department releases February **durable-goods** data. Economists will be watching to see whether business investment, which fell for the second straight month in January, shows signs of picking up in the wake of tax cuts passed last year.

U.S. WATCH

TEXAS

Austin Explosion Seriously Injures 2

An explosion seriously injured two people in Austin on Sunday night, local authorities said, the fourth blast to occur in the Texas capital since early March.

According to the official twitter accounts for the Austin Police Department and Austin-Travis County Emergency Medical Services, two males were injured in the explosion and taken to a local hospital with serious but non-life-threatening injuries.

The city has been on edge for days following a string of package explosions, including a pair of them last Monday, that have left two people dead and several injured this month. It wasn't yet clear if Sunday night's explosion was linked to those incidents.

The package bombs that exploded last week killed 17-year-old aspiring musician Draylen Mason and injured two others. Those followed a previous package bomb that killed a man on March 2. All three of those explosions involved packages left outside homes, police say.

—Dan Frosch

WILL DUNHAM/REUTERS

Traditional Mexican dances were performed Sunday at the cherry blossom festival in Washington, D.C.

SENATE

State, CIA Nominees Face Tough Grillings

Confirmation battles loom for President Donald Trump's nominees to run the State Department and the Central Intelligence Agency, complicating the administration's foreign-policy efforts ahead of important decisions on North Korea and Iran.

Sen. Rand Paul (R., Ky.) told CNN on Sunday that he would try to filibuster Mr. Trump's choices of Mike Pompeo to be secretary of state and Gina Haspel, now the CIA's deputy director, to take Mr. Pompeo's current slot. Mr. Paul had said previously that he opposes the nominations.

Republicans hold a narrow 51-49 advantage in the Senate, and many Senate Democrats have expressed concern about, or opposition to, the nominees. Confirmation requires a simple majority.

Mr. Pompeo's nomination came after the president dismissed Secretary of State Rex Tillerson. The former Kansas congressman, if confirmed, is widely expected to push the administration harder to withdraw from the 2015 Iran nuclear deal.

—John D. McKinnon

TRADE POLICY

Groups Seek to Halt China Tariff Plans

Forty-five trade associations, representing a wide swath of the U.S. economy, are petitioning the Trump administration to halt plans to levy tariffs on China and to work instead with other nations to press Beijing to end restrictions on foreign firms.

Imposing heavy tariffs, said a letter by the trade groups, "would trigger a chain reaction of negative consequences for the U.S. economy, provoking retaliation; stifling U.S. agriculture, goods, and services exports; and raising costs for businesses and consumers."

The White House is putting together a package of anti-China measures, including tariffs on at least an annual $30 billion of Chinese imports, to persuade Beijing to end requirements that U.S. companies transfer technology to Chinese firms.

—Bob Davis

Baltimore's Fund For Victims Ebbs

BY SCOTT CALVERT

Baltimore's high homicide rate has claimed another victim—the state fund used to compensate crime victims.

The Criminal Injuries Compensation Board of Maryland has had to delay paying some claims for the first time in years, and a Wall Street Journal analysis found payments in 2017 hit a five-year low.

Record homicide levels in recent years in one of America's most violent cities have pushed claims up. Yet available funding—largely from fees paid by people convicted of crimes and traffic offenses—is down sharply as arrests in the city have declined. The dwindling funding is a concern for victims' advocates and prosecutors because the compensation can be critical for people who often lack money for medical bills or funeral expenses.

"For some it's the difference between having a funeral at all," said Calvert County State's Attorney Laura Martin, president of the Maryland State's Attorneys' Association. The state program gives relatives of homicide victims up to $5,000 for funeral costs.

All 50 states and Washington, D.C., have victim-compensation programs, and most rely on court collections, not tax dollars. The U.S. government provides a 60% match.

A common aim is to speed money to victims "earlier in the process than if they had to wait for restitution to be ordered or had to wait to win a civil suit," said Jeff Dion, deputy executive director of the National Center for Victims of Crime, a Washington-based advocacy group.

Altheria Frazier had to borrow from family to pay for the funeral for her 44-year-old son Charles Frazier, who was shot in May in West Baltimore. The $5,000 in benefits from the fund wasn't paid until Dec. 31, and she used the money to reimburse her relatives.

"I had insurance, but still it wasn't enough to cover what I desired to have for him," Ms. Frazier said.

The city may have some breathing room this year. After record homicide levels in recent years, Baltimore has seen a sharp decrease in violent crime this year. Through Thursday, homicides are down 25% compared with the same period in 2017, and nonfatal shootings are down 33%.

Through the fund, applicants can qualify for aid including a maximum of $45,000 for medical expenses, $5,000 for psychological counseling and $25,000 for lost wages. Relatives of homicide victims can also get up to $25,000 for support of a dependent child or spouse.

CORRECTIONS & AMPLIFICATIONS

Volkswagen produces its Jetta model in its Puebla, Mexico, plant. A Business News article on Thursday incorrectly said the Jetta was produced at VW's Chattanooga, Tenn., plant.

Women working at the main U.K. arm of Goldman Sachs Group Inc. are paid more than a third less than men, according to pay data released. A Banking & Finance article about the gender pay gap on Saturday incorrectly said men made a third more than women.

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

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GAS

Continued from Page One

man of the California Energy Commission. "At some point soon we'll be permitting the last gas plant in California."

Pedro Pizarro, chief executive of Edison International, parent of Southern California Edison, said in an interview earlier this month that the existing gas plants are still needed. But, he added, "It is fair to say it will be very challenging to see new natural gas resources being built in California."

Gas is under pressure in other areas, including Arizona, where regulators last week voted for a nine-month pause on any new large gas-powered plants. The Arizona Corporation Commission told the state's largest investor-owned utilities that their future plans relied too heavily on natural gas and should include more renewables, electricity storage and energy efficiency.

Natural gas accounted for nearly 32% of U.S. power generation in 2017, up from about 22% a decade earlier, according to federal data. Coal is now 30%, after falling from 49% over the same time span. Nuclear accounted for 20% in 2017, and wind and solar combined totaled 8%, rising from less than 1% a decade ago.

Gas is projected to remain the top electricity-maker in the U.S. over the long term, according to federal forecasts, but its growth could be limited by increased use of renewable energy.

In Michigan, CMS Energy Corp. backed off from plans to expand a gas-fired plant in Dearborn, just west of Detroit, after residents and environmentalists worried it would worsen air quality. Little had been done, they said, to assess the viability of cleaner options. The state has called for utilities to get 15% of their electricity from renewables by 2021, compared with some 10% at the end of 2016.

Regulators, meanwhile, are considering a proposal by DTE Energy Co. to build a 1.1-gigawatt gas plant about 50 miles northeast of Detroit, which solar advocates oppose. They contend DTE could fill local power needs with solar, other renewables and energy-efficient efforts at a considerably lower cost. A decision by regulators is expected by late April.

Elsewhere, environmental advocates say the only way to meet state mandates for reducing pollution and carbon emissions is to build more renewable-energy operations.

"In New England, like California, we are past the point where more gas can help us,"

> *The growth of gas could be limited by increased use of renewable energy.*

said David Ismay, a senior attorney at the Conservation Law Foundation, which is fighting new gas plants in Massachusetts and Rhode Island.

Massachusetts, the region's most populous state, wants 40% of its power from clean-energy resources by 2030.

NRG Energy Inc. spokesman David Gaier said the company is building a new gas plant in Massachusetts that can be at full power in 10 minutes—a fast start time that will help firm up the power grid when intermittent renewable resources aren't producing.

"Unlike a nuclear plant or even a coal plant, if more renewables are integrated, [a gas plant] can be ramped up or down to accommodate them," he said. Construction of the plant has started, according to NRG.

Of course, some states are still welcoming new gas development. New plants are being built in the gas-producing states of Pennsylvania and Ohio, which are seeking ways to move the gas to market either by pipeline or as electrons by transmission line.

In Louisiana, the New Orleans City Council earlier this month approved a plan by an Entergy Corp. subsidiary to build a gas-fired plant in eastern New Orleans, despite concerns the project would add to pollution, wouldn't fix outage issues in the area and could stall the development of renewable resources.

Trump To Unveil Opioids Strategy

By Louise Radnofsky

President Donald Trump on Monday will call for new steps to combat the opioid epidemic, including a push to reduce opioid prescriptions by a third over three years, asking the Justice Department to seek more death-penalty cases against drug traffickers under current law, and for federal support to expand the availability of overdose-reversal medication.

The proposals will come in a speech in the hard-hit state of New Hampshire. They form part of a broader blueprint by Mr. Trump, which senior White House officials on Sunday described as seeking to deploy education, law enforcement and treatment to try to reverse abuse of particularly addictive drugs that claim the lives of more than 100 people a day in the U.S.

Other elements of the strategy, the White House said, would include a fresh public-awareness campaign about drug abuse, a research-and-development partnership between the National Institutes of Health and pharmaceutical companies into opioid prescription alternatives, tougher sentences for fentanyl traffickers, and screening of all prison inmates for opioid addiction.

But it is the death penalty proposal that is likely to dominate discussion of the package.

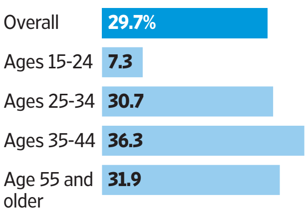
"The Department of Justice will seek the death penalty against drug traffickers when it's appropriate under current law," said Andrew Bremberg, the president's top domestic-policy adviser.

Senior White House officials referred specific questions about the death-penalty stance to the Justice Department but emphasized that the administration was seeking to use current law rather than call for a new federal statute.

A 1988 federal law imposes the death penalty on drug "kingpins" who commit murder in the course of their business. Some legal analysts say that it has resulted in dozens of sentences but few executions since then.

Overdoses Climb

Change in suspected opioid overdoses, July 2016–Sept. 2017



Note: Data from hospital emergency departments of 53 jurisdictions in 42 states.
Source: Centers for Disease Control and Prevention
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LAURA MAHONEY/U.S. FISH AND WILDLIFE SERVICE/ASSOCIATED PRESS

Brad Carter begins releasing about 29,000 endangered juvenile fish into a tributary of the Sacramento River near Manton, Calif. Below, a winter-run Chinook salmon.

Salmon Industry Set to Take a Hit

California commercial-fishing season will be shortened this year to respond to a weak run

By Jim Carlton

STEVE MARTARANO/U.S. FISH AND WILDLIFE SERVICE/ASSOCIATED PRESS

SAN FRANCISCO—Fisheries managers will impose the toughest restrictions on California's salmon harvest in nearly a decade, hobbling the billion-dollar industry that depends on it.

This year's fall salmon run is estimated to be only a quarter of normal on California's Sacramento River, due mostly to drought conditions and higher ocean temperatures. As a result, officials at the Pacific Fishery Management Council last week moved to cut the commercial season by as much as a third of its standard length. Salmon runs are a time when the fish migrate from the ocean to rivers to spawn.

The cut applies specifically to the Sacramento run, which accounts for most of the salmon production in California, one of the top salmon-producing states in the U.S., said John McManus, president of the Golden Gate Salmon Association, an industry group.

"It's bad," Mr. McManus said. "They're taking away the most important part of the year for the commercial salmon fisherman."

The reduction is set to result in the shortest season since the state's salmon fishery was declared off limits in 2009 after a previous collapse in salmon numbers, said Marc Gorelnik, a recreational angler and attorney from El Cerrito, Calif., who sits on the Pacific Fishery Management Council.

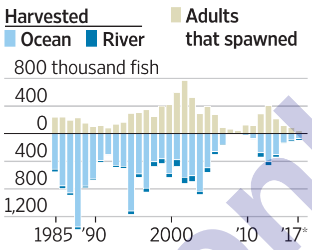
The federally appointed body will finalize the exact dates of the new restrictions in April, but the start of both the commercial and sport-fishing salmon seasons will be pushed back up to several months.

Salmon fishing in California is a $1.4 billion industry that accounts for 23,000 jobs, according to Southwick Associates, a market-research firm in Fernandina Beach, Fla. Fishing groups say the cutbacks will be more painful this year, because boat captains have also had to contend with government-ordered closures or cutbacks of crab and other fish seasons in recent years.

"People are going to lose boats, or homes or marriages over this," said Dave Bitts, president of the Pacific Coast Federation of Fishermen's Associations. "It's not good."

River Run

Number of adult Sacramento River fall Chinook salmon that were harvested and those that spawned



Source: Pacific Fishery Management Council
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Salmon runs along the West Coast have been under pressure for decades, as the buildup of dams and other infrastructure, such as pumping stations and canals, has impeded their ability to traverse rivers to spawn.

Severe droughts and warming ocean conditions that have struck the West in the past 15 years have reduced salmon numbers even more—from over a million fall Chinook salmon on California's Sacramento River in 2005 to just 230,000 last year, according to federal estimates. As a result, federal ocean managers have only permitted a full-length salmon season on the Sacramento run just a handful of times since 2005.

Fisheries managers say they have little choice to replenish depleted stocks, said Harry Morse, spokesman for the California Department of Fish and Wildlife. The problem extends to Alaska, where a federal disaster was declared last year after sharply lower pink salmon runs.

Bridge Collapse Moves Into Probe Phase

By Laura Kusisto

Miami officials closed one chapter in recovery efforts from a pedestrian bridge that collapsed on Thursday killing six people, after they said over the weekend they have retrieved the bodies of all the dead and were moving onto investigating what went wrong.

Juan Perez, director of the Miami-Dade Police Department, said during a news conference Saturday evening that the recovery is entering a new phase focused on finding evidence and cleaning up the debris. The National Transportation Safety Board will be leading the investigation, which will have subpoena power.

"The primary purpose of that [is] to make sure that this never happens again," Florida Republican Sen. Marco Rubio said at the news conference.

Police said they recovered five victims at the scene under some 950 tons of concrete rubble. They identified five of the victims in a news release as Rolando Fraga Hernandez; Alexa Duran, 18 years old; Oswald Gonzalez, 57 years old; and Alberto Arias, 53 years old; and Brandon Brownfield, 39 years old.

A sixth man, Navaro Brown, 37, died in the hospital. No age was given for Mr. Hernandez.

Police also said they extracted three vehicles: A gold Jeep Cherokee, a white Chevy truck and a gray Toyota 4Runner.

"It has been a laborious, tedious process," Mr. Perez said "The biggest tonnage is the tonnage that were being carried by the families, the parents the husbands, the wives of the people who are underneath there."

The $14.2 million bridge was designed by FIGG Bridge Engineers Inc., of Tallahassee, Fla., and constructed by a Miami firm, Munilla Construction Management, or MCM, for Florida International University under a federal grant. The bridge, which was installed less than a week before the collapse, crossed Miami's Southwest Eighth Street, connecting FIU's campus to the town of Sweetwater.

Mr. Rubio said the NTSB will investigate all the plans, the decisions that were made and the materials that were used to determine what went wrong. He said the investigation is expected to take a few months.

Mr. Perez said it is too early to say if there will be criminal charges.

The bridge suddenly collapsed Thursday afternoon, crushing eight cars underneath. Its main 174-foot-long span had been lifted into place on March 10 in a matter of hours, after being built alongside the thoroughfare over the course of months.

Hours before the bridge collapsed, one of the project engineers briefed representatives of the builder, Florida International University and the state Transportation Department about a crack in the structure, according to the university.

"The responsibility to identify and address life-safety issues and properly communicate them is the sole responsibility of the FIU design build team," the Florida Department of Transportation said in a recent statement, adding that at no point was the department alerted to any life-safety issues.

In another recent statement, FIGG said: "The evaluation was based on the best available information at that time and indicated that there were no safety issues."

—Scott Calvert contributed to this article.

Teachers' Pension Squeeze Deals Harsh Lessons as Funds Fall Short

By Heather Gillers

LUKE SHARRETT FOR THE WALL STREET JOURNAL (2)

Teachers in Lexington, Ky., protesting proposed cuts. Teacher pension plans are struggling across the U.S.

Kentucky state Sen. Joe Bowen got so many angry calls this month after proposing that teacher pension benefits be cut that he decided to change his cellphone number.

"There have been some challenging days," said Mr. Bowen, a Republican.

The unrest is part of a broader fight unfolding around the country. Teachers from Kentucky, West Virginia, Oklahoma and Arizona have staged strikes and demonstrations, and they have threatened walkouts over new proposals to install limits on pensions, wage increases and benefits.

One reason for the showdowns: Education spending is no longer sacrosanct because of deep-seated funding problems that have roiled state budgets since the 2008 financial crisis.

States spent 2% less on K-12 education in 2017 than they did in 2008, according to data from the National Association of Budget Officers adjusted for inflation and population growth. That trailed a more robust recovery in other state spending.

"K-12 was really hit in the post-2007 period," said Don Boyd, a senior research fellow at the Center for Policy Research at Rockefeller College.

There was a time in the 1990s and early 2000s when education spending increased by sizable amounts across the country, jumping by 20% between 1998 and 2007. Robust investment returns kept pension plans well-funded, lessening the need for hefty state contributions. At the same time, sales-, income- and property-tax revenue flowed steadily into state coffers, allowing lawmakers to increase the amount they sent to schools year after year.

That reversed following the 2008 financial crisis, which eroded property-tax revenue and state aid because of pullbacks in housing values, employment and consumer spending.

State education spending has recovered in recent years as the economy rebounded but at a tepid pace. "We are seeing some growth in," said Brian Sigritz, director of state fiscal studies at the National Association of State Budget Officers. "It's just that the growth levels aren't as high as what we were seeing in the 1990s and early 2000s."

In Kentucky, the budget battle centers on pension benefits for 176,518 active, inactive and retired teachers across the state. The system that oversees those retirement assets has a funding deficit of $14.5 billion, the result of an aging population and decades of mistakes.

Kentucky went from providing 88% of the needed teacher pension contribution in 2007 to 57% in 2016, according to the Public Plans Database. It now has enough assets to pay for just 56% of future benefits, according to a presentation from a consultant hired by the state.

Across the U.S., other teacher pension plans are struggling with the same problems. Dedicated teacher pension plans had an average funding level of 69% in 2016 compared with 73% for other public plans, according to the Public Plans Database.

Kentucky Gov. Matt Bevin, a Republican, took office in 2015 after signaling that he wanted to reshape the state pension systems.

Mr. Bevin said in an interview Saturday that the teachers pension fund is 13 years away from failure without any changes. "We can't afford to do nothing," he said.

Mr. Bowen, the state senator from Owensboro, sponsored a bill that would lower cost-of-living increases promised to teachers in retirement to 1% from 1.5%, among other changes.

Teachers oppose Mr. Bowen's new suggestion. Protesters chanted "hit the road, Joe" during one committee hearing.

"When you add that [cost-of-living adjustment] up over a lifetime, you're talking about a very significant amount of money that would be lost," said Pam Elkins, an eighth-grade social-studies teacher at South Laurel Middle School in London.

The state teachers union, the Kentucky Education Association, takes the position that the state should find funding for the existing teacher pension plan, said spokesman Charles Main.

Mr. Bowen said the teachers fund faces larger threats than a reduced cost-of-living increase, such as running out of money altogether.

Congress Braces for Another Battle

BY KRISTINA PETERSON

WASHINGTON—Congress will enter its last major fiscal battle before November's midterm elections this week, as lawmakers prepare to debate a mammoth spending bill that offers them the last chance to settle dozens of long-running policy fights.

Lawmakers are expected to unveil Monday a bill funding the government until October at ramped-up spending levels agreed to last month in a two-year budget deal. Over the weekend, congressional leaders were still haggling over a handful of policy issues that have divided the parties for weeks.

Democrats and Republicans have fought over whether to restore subsidies aimed at shoring up the Affordable Care Act and bar subsidies for insurers who cover abortion services. Also at issue are funding for immigration enforcement, a host of tax provisions and funding for a new rail tunnel into New York City—a fight that pits President Donald Trump against some Republicans from his region.

With the midterms approaching, lawmakers were widely expected to reach an agreement on the spending bill so that they could turn their attention to the intensifying battles for control of the House and Senate in November.

The spending bill must clear both the House and Senate before 12:01 a.m. Saturday, when the government's current funding expires, to avoid a partial shutdown. Last month, delays in the Senate caused Congress to briefly shutter the government before passing the spending bill needed to reopen it.

Congressional leaders are hoping to avoid another shutdown, but it isn't clear that they have allotted enough time to pass legislation that likely will draw some opposition from both sides of the aisle. In the Senate, any lawmaker can hinder the chamber from speeding up its time-consuming procedures, as Sen. Rand Paul (R., Ky.) did last month.

Conservatives, including Mr. Paul, have balked at the bill's boost in funding above limits that Congress established in 2011 to try to rein in federal spending. The budget deal passed in February lifted overall spending levels above those limits for both military and domestic spending by almost $300 billion over two years, in addition to nearly $90 billion in disaster aid for states and territories hit by last year's destructive storms and $140 billion in emergency military funds.

"Republicans don't know how to stop spending money," said Jason Pye, vice president of legislative affairs for FreedomWorks, a conservative group that is expected to oppose the spending bill.

Mr. Trump is urging GOP leaders to exclude $900 million in funding for at least one project: a tunnel under the Hudson River, the centerpiece of Amtrak's proposed $30 billion Gateway Program. The president's push has alarmed House Republicans from the region but pleased conservatives upset over the bill's funding levels.

"Our hair should be on fire about the overspending," said Rep. Mark Walker (R., N.C.), chairman of the Republican Study Committee, a group of more than 150 conservative House Republicans. "We've got to do better than this."

"We got about 80% of what we were trying to get, and if you can't accept 80%, then the system can't function," said Rep. John Yarmuth of Kentucky, the top Democrat on the House Budget Committee, in an interview for C-Span.

ALEX EDELMAN/GETTY IMAGES

Congressional leaders are preparing for one more budget fight this week, as lawmakers are set to reveal a spending bill with ramped-up funding at levels agreed to last month.

Immigration Likely To Split Democrats

Democrats faced disappointments as the spending bill isn't likely to include any extension of the Deferred Action for Childhood Arrivals program, or DACA.

President Donald Trump ended the program, which shields young undocumented immigrants from deportation, in September and gave Congress until early March to pass a replacement.

Democrats tried to use their leverage on a spending bill in January to demand protections for the immigrants, often called Dreamers. But the resulting three-day government shutdown ended without a deal over immigration and left them wary of using the tactic again.

Asked Sunday on Fox whether Democrats are abandoning DACA beneficiaries by not forcing a government shutdown over the issue, Sen. Richard Durbin (D., Ill.) said, "We're not going to have a shutdown, but I'm urging leaders to come together and understand there's an emergency here. We have to move on a bipartisan basis."

Federal judges have blocked the administration from winding down the DACA program for now, easing pressure on lawmakers to reach an immediate deal.

Some Democrats in both chambers are likely to vote against the bill because the Dreamers' fate is unresolved. But many are likely to support it, because it includes funding for many of their other priorities.

Texts Shed Light On Judge's Recusal

BY DEL QUENTIN WILBER

A federal judge may have recused himself from overseeing the case of Mike Flynn, President Donald Trump's first national security adviser, because a personal friend was connected to the matter, newly disclosed messages exchanged between two FBI officials suggest.

The judge, Rudolph Contreras, recused himself after accepting Mr. Flynn's guilty plea in December to one count of lying to the FBI about his conversations with a Russian diplomat in the weeks before Mr. Trump was inaugurated.

Mr. Contreras didn't explain the reasons for stepping aside at such an unusual juncture. But the texts between FBI agent Peter Strzok and FBI lawyer Lisa Page appear to shed light on the decision.

In the text messages, the pair, who were in an extramarital affair, discussed in 2016 how Mr. Strzok was on friendly terms with the judge. A person close to Mr. Strzok said the FBI agent and the judge were neighbors.

Mr. Strzok, a top FBI counterintelligence agent, was tapped by special counsel Robert Mueller to be the lead agent in the investigation of Russia's interference in the presidential election. He was removed from Mr. Mueller's team in July after the Justice Department's inspector general uncovered texts Mr. Strzok exchanged with Ms. Page that were disparaging of Mr. Trump.

The Justice Department has provided Congress with reams of redacted text messages exchanged between the FBI employees. It also has allowed congressional investigators to review unredacted versions of the records.

The Washington Post reported earlier on the existence of the unredacted texts.

The texts show that Mr. Strzok was mulling whether his relationship with the judge might warrant Mr. Contreras to recuse himself from matters he was overseeing.

Mr. Contreras, a judge on the federal court in Washington, had been tapped by Chief Justice John Roberts in May 2016 to serve on the secretive Foreign Intelligence Surveillance Court. The spy court approves warrants to spy on agents of foreign powers and U.S. citizens believed to be engaged in such illegal activities as espionage or terrorism.

Mr. Contreras, Mr. Strzok and Ms. Page couldn't be reached for comment.

Democrats Gain Voter Favor, as Does Trump

BY JANET HOOK

Democrats have regained a double-digit advantage over Republicans on which party voters want to control Congress after the 2018 midterm elections, while at the same time President Donald Trump's job approval has improved, a new Wall Street Journal/NBC News poll has found.

Asked which party should control Congress, registered voters picked Democrats 50% to 40%, the second time in three months the party claimed a double-digit advantage.

"This is not an environment where Republicans are going to have any national advantage," said Bill McInturff, a Republican pollster who conducted the survey with Democrat Fred Yang. "They are going to have to dig in and work against the national environment to figure out how to win a campaign."

The GOP lost ground in the past two months even though Americans adopted a more favorable view of how Mr. Trump is handling his job. Some 43% approved, compared with 39% in January.

The poll found that House Democratic Minority Leader Nancy Pelosi is suffering from a negative image: just 21% have a positive image of her, down 4 percentage points from a poll six months ago.

The Journal/NBC News poll measures the national political climate, rather than opinions in any one state or House district. But the findings are consistent with last week's win by a Democrat in a Pennsylvania special House election. Mr. Trump campaigned in the district for the GOP candidate but couldn't pull him to victory, while a strong Democratic candidate was able to shrug off GOP efforts to link him to Mrs. Pelosi.

"Trumpism may well help Donald Trump in his 2020 election" but may not help other Republicans this year, said Mr. Yang.

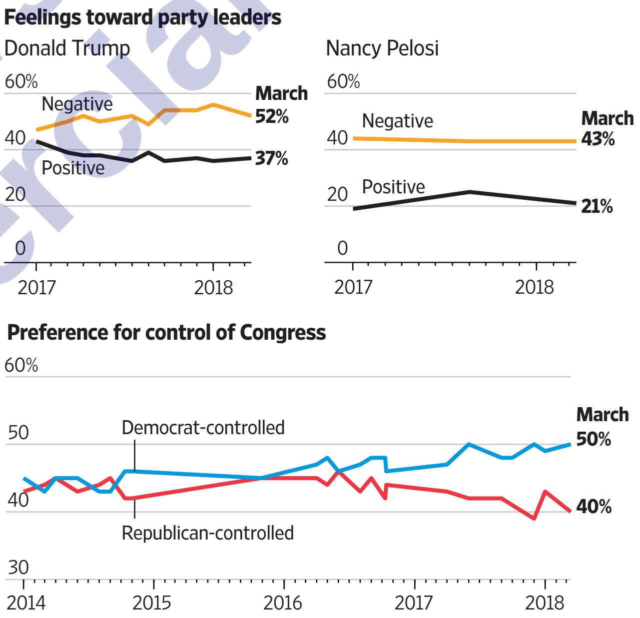
The poll was conducted March 10-14, just as the primary election season began. Democrats have been buoyed by a surge in voter turnout even in red states such as Texas, which held the first 2018 primary March 6.

The poll found that, nationwide, Democratic voters are more interested in the midterm elections than are Republicans. Asked to rate their level of interest in the election, 60% of Democrats ranked it at the highest levels, compared with 54% of Republicans.

Republicans have acknowledged that they face political headwinds this year, if only because a president's party usually loses seats in a first midterm election. In early 2018 polling, there were signs that the GOP had gained some ground after it passed the tax cut, as Republican voters welcomed the party's first major legislative accomplishment. In January, the Journal/NBC poll found the Democratic advantage was 6 percentage points on the question of which party should control Congress.

An Early Snapshot of the Midterms

Views of Donald Trump have turned more favorable and views of Nancy Pelosi less favorable. Yet Democrats expanded their lead on which party Americans want to lead the next Congress.



Source: WSJ/NBC News polls, most recently of 1,100 adults conducted from March 10-14; margin of error +/- 2.95 pct. pts.

THE WALL STREET JOURNAL.

TRUMP

Continued from Page One

Mueller," Mr. Cobb said.

Mr. Trump for months has criticized the Russia probe, but his weekend comments showed a more confrontational tone toward Mr. Mueller and prompted senators from both parties to caution the president against taking steps to end the investigation. The warnings to Mr. Trump were also triggered by a statement Saturday by the president's personal lawyer, John Dowd, calling for the Justice Department to step in to stop the Mueller investigation.

Such a step "would be the beginning of the end of his presidency, because we are a rule-of-law nation," Sen. Lindsey Graham (R., S.C.) said on CNN.

Rep. Trey Gowdy (R., S.C.) said on Fox that Mr. Dowd's remarks were "a disservice," adding, "If you have an innocent client, Mr. Dowd, act like it." Mr. Gowdy, who has said he isn't seeking re-election, is a member of the House Intelligence Committee.

The latest flare-up over the Russia probe came days after news that the special counsel had subpoenaed Mr. Trump's company, the Trump Organization, for documents related to his investigation. It also came after the Justice Department fired a former top Federal Bureau of Investigation official whom Mr. Trump has repeatedly criticized publicly and who is a potential witness to the events surrounding Mr. Trump's dismissal last year of James Comey as FBI director.

Mr. Mueller is investigating the firing for evidence of obstruction of justice, as part of his probe of any ties between the Trump 2016 campaign and Moscow. That investigation has led to five guilty pleas, including by two top Trump campaign aides, while Mr. Mueller last month returned indictments of three Russian companies and 13 Russian citizens on charges of engaging in a widespread effort to interfere in the election.

The Friday firing of Andrew McCabe drew a tweet of approval from Mr. Trump.

Mr. Trump has said his presidential campaign didn't collude with Russia, and he has denied attempting to block the probe. At times, Mr. Trump has also indicated that he doubts U.S. intelligence assessments that Russia attempted to tip the election in his favor. Russia has denied those assessments as well.

Mr. Trump's legal team has sought to provide Mr. Mueller the documents he has requested and has discussed offering a sit-down interview with Mr. Trump if it would more quickly end the investigation. Mr. Trump's attorneys have also urged him to show restraint in his tweets and not antagonize the special counsel.

Mr. Trump in another tweet approved of the late-Friday firing of Andrew McCabe, a former FBI deputy director, and leveled a new attack on Mr. Comey and what he called the "lies and corruption going on at the highest levels" of the FBI.

The firing of Mr. McCabe by Attorney General Jeff Sessions, who himself has come under fire from Mr. Trump, came after the Justice Department's inspector general found a "lack of candor" in Mr. McCabe's disclosures about contact with the news media, in relation to an October 2016 Wall Street Journal report.

The FBI's Office of Professional Responsibility recommends dismissal if "lack of candor" is found, but allies of Mr. McCabe say the finding was rushed and lacks a substantive basis.

The McCabe firing, which came hours before he was set to retire, depriving him of a large part of his pension, sparked debate over whether it was merited or was an attempt to undermine the Mueller probe. Mr. Trump's attacks also follow the news that Mr. McCabe wrote memos describing his conversations with Mr. Trump and turned them over Mr. Mueller.

A person familiar with the memos said they outlined three or four meetings or calls between Messrs. McCabe and Trump. Mr. Trump tried to cast doubt on the report of the memos, writing on Twitter Sunday that he "spent very little time with Andrew McCabe, but he never took notes when he was with me."

In remarks after the McCabe firing, John Brennan, director of the Central Intelligence Agency under President Barack Obama and an official in the George W. Bush administration, said on Twitter that Mr. Trump would be seen as a "disgraced demagogue," adding, "You may scapegoat Andy McCabe, but you will not destroy America."

Rep. Mark Meadows (R., N.C.) said he was comfortable with the termination of Mr. McCabe and didn't see it as unfair, from what he knew.

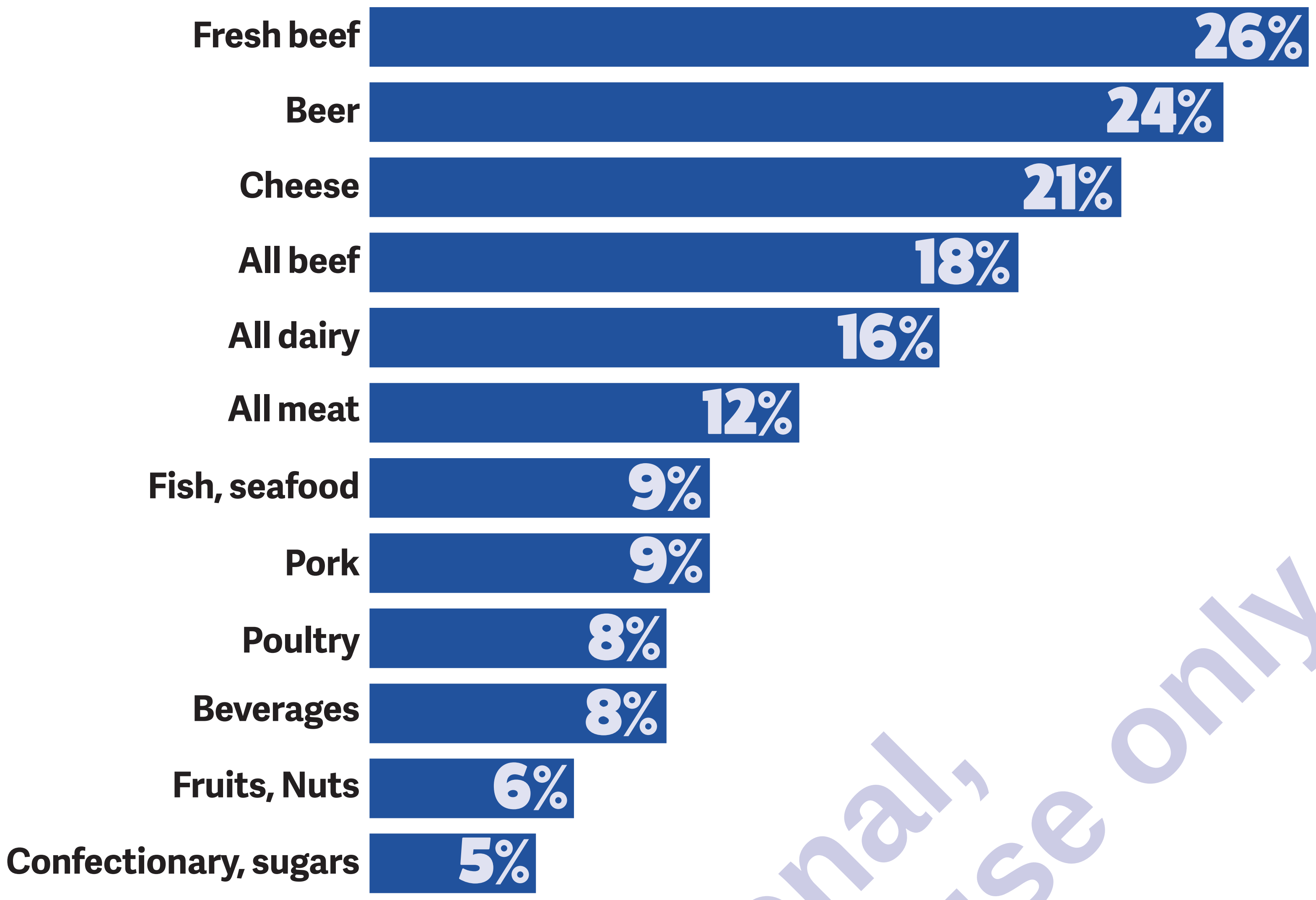
"Based on the information that I have...I would think that the termination of Andrew McCabe by the Department of Justice and FBI was certainly appropriate," he said.

Mr. Trump's tweet suggesting an anti-GOP bent to the Mueller team came even though Mr. Mueller is a registered Republican and was appointed and is overseen by another Republican, Deputy Attorney General Rod Rosenstein. Mr. Trump and his supporters have pointed to indications that some members of the Mueller team, including deputy Andrew Weissman, are Democrats and therefore can't be impartial.

—Dave Michaels contributed to this article.

Congratulations to America's Farmers and Food Processors

Food exports were up in 2017 after recent years of decline



Agriculture Secretary Sonny Perdue and the Trump Administration continue to spur this growth, toward our two goals of doubling America's food production industry's value to $1.7 trillion and doubling America's food export value by:

- Reducing red tape, such as the Waters of the U.S. rule
- Fair and reciprocal trade deals, like getting beef into China for the first time in 14 years
- Investment-friendly tax changes, including the 100% deductibility of capital expenditures in year one

EXPORT FOOD, NOT JOBS!

Sincerely,

Anthony Pratt
Executive Chairman, Pratt

PRATT 100% RECYCLED

PRATT FOUNDATION

**"Do right and feed everyone."
— Sonny Perdue**

Source: USA Trade Online, USA Census Bureau, www.usatrade.census.gov. US Import and Export Merchandise trade statistics (HS code), Measured in value ($US).

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Putin Sails to Easy Win in Russia

Leader had 76.1% of the vote with more than three quarters of the ballots counted

By James Marson
And Thomas Grove

MLADEN ANTONOV/AGENCE FRANCE-PRESSE/GETTY IMAGES

Voter turnout stood at just under 60% as of 6 p.m. in Moscow; people voted Sunday in Moscow's Kazansky railway terminal.

MOSCOW—Russian President Vladimir Putin won reelection by a wide margin Sunday, according to preliminary results, strengthening his hand amid an escalating confrontation with the West.

After 18 years in power, Mr. Putin will start a new six-year term at a time of sharply deteriorating relations with Western adversaries, who accuse him of military adventurism in Ukraine and Syria and hostile attacks ranging from election meddling to attempted assassinations.

Mr. Putin's foreign policy, coupled with efforts to rebuild the Russian military, have been part of an effort by the 65-year-old former KGB officer to boost his country's standing on the world stage—a campaign that has helped make him extremely popular with his people.

With just over three quarters of the ballots counted, Mr. Putin led with 76.1% of the vote, according to Russia's Central Election Commission, dominating a field otherwise made up mostly of weak and little-known figures. By comparison, he scored 63.6% in 2012, two years before his seizure of Crimea from Ukraine sent his approval ratings soaring.

Voter turnout stood at just under 60% as of 6 p.m. in Moscow, Russian state news agencies reported, citing election commission data. The last polling stations closed at 9 p.m., Moscow time.

Late Sunday, Mr. Putin took to the stage at a rally near the Kremlin celebrating the fourth anniversary of the annexation of Crimea to thank his supporters and lead them in a chant: "Russia! Russia!"

The result was in little doubt, given that the Kremlin has steadily tightened its grip over the main levers of power in Russia, including media and law enforcement—both of which the government uses to promote the president and sideline opponents. His most prominent critic, Alexei Navalny, was barred from running.

Golos, an election monitoring group, counted hundreds of electoral violations, from employers forcing their workers to vote to ballot stuffing; the election commission said there were no reports of serious violations.

Mr. Putin's broad popularity is also based on the rise in living standards over his years in power, although the economy has faltered in recent years.

The victory provides an imprimatur of public support for Mr. Putin's efforts to challenge the U.S. and its allies abroad in Ukraine and Syria and undermine them at home through various clandestine means.

In the weeks before the vote, Mr. Putin announced new nuclear weapons that he says can strike any country on earth. State propaganda has presented Moscow's confrontation with the U.S. and Europe as resistance against expansionism aimed against Russia.

"They are all bad mouthing us in order to topple Putin. But now they are afraid of us," said Natalya Kondrashova, 59, a decorator who voted for Mr. Putin. "If they don't fear us, they will all come swarming like cockroaches, like Germany in 1941."

Tensions with the West are now at levels not seen since the Cold War. The U.K. has accused Mr. Putin of having given the order to poison a Russian colonel who had spied for the British and lives in England. The two countries have each ordered 23 diplomats expelled.

Speaking to reporters late Sunday, Mr. Putin said London's claims were "nonsense," and that it was "unthinkable" that anyone in Russia would carry out such an act ahead of elections and the soccer World Cup, which Russia is hosting this summer.

Last week, the Trump administration slapped Moscow with fresh sanctions as punishment for alleged meddling in the 2016 U.S. presidential election, which Russia has denied.

Among Mr. Putin's most pressing domestic problems is the economy, which emerged last year from a recession caused mainly by weak prices for crude oil and sanctions over its aggression in Ukraine.

Succession Hangs Over Next Term

The biggest question hanging over President Vladimir Putin's next term will be what comes next. According to the constitution, he can't run again, although he sidestepped that rule in 2008 by becoming prime minister before returning to the presidency in 2012.

Mr. Putin mediates complex relationships between powerful businessmen and officials.

Gleb Pavlovsky, a political analyst and former Kremlin aide, said the succession issue will have a destabilizing effect, as various groups vie to promote their interests.

The challenge is to find a figure that suits everyone, as any premature contenders will be destroyed by rivals or Mr. Putin, Mr. Pavlovsky said. As a result, the succession race may end in Mr. Putin receiving an alternative position of power to continue his rule.

U.K. Cites Evidence Of Moscow Toxins

By Jason Douglas

LONDON—The U.K. government said it has evidence that Russia has spent the past decade secretly developing nerve agents to use in assassinations, in what it said was a violation of international treaties banning chemical weapons.

"We have evidence that Russia has been investigating delivery of nerve agents and has been creating and stockpiling Novichok," Foreign Secretary Boris Johnson told the British Broadcasting Corp. on Sunday, referring to the poison British authorities say was used in the attempted murder of Sergei Skripal, a Russian colonel who spied for the British and was traded in a spy swap in 2010.

His statement marks the latest escalation in a diplomatic crisis between London and Moscow. Mr. Skripal and his daughter Yulia remain gravely ill after being found slumped on a park bench in the English city of Salisbury this month. The U.S., France and Germany have joined the U.K. in blaming Moscow for the attack, which also injured a police officer.

Britain's Foreign Office said its information indicates that Russia has been producing and stockpiling Novichok "within the last decade" as part of a program to develop ways of using nerve agents in assassinations, in a violation of the Chemical Weapons Convention.

Russia denies it was behind the attempted killing of Mr. Skripal. Russia's ambassador to the European Union, Vladimir Chizhov, on Sunday said Russia had nothing to do with the events in Salisbury. In a BBC interview, Mr. Chizhov said Russia never produced Novichok and stopped producing all chemical weapons in 1992.

Yemen Deaths Cloud Saudi Visit to U.S.

BY DION NISSENBAUM

RIYADH, Saudi Arabia—Maj. Gen. Abdullah Al-Ghamdi stands in the middle of Saudi Arabia's war room and points to a white truck driving across a live drone feed from Yemen nearly 1,000 miles away.

"Look," he says as the truck silently kicks up dust while passing a small compound, "there is a group of fighters hiding right there that we are watching, but we let him drive away. We'll watch for hours, days sometimes, and not strike to protect civilians."

Gen. Ghamdi is deputy commander of the Saudi-led military coalition in Yemen, a force that is facing increasing international criticism for airstrikes that the United Nations estimates have killed more than 4,000 civilians. The Saudi commanders say they are doing all they can to prevent civilian casualties. The U.N. recently condemned the efforts as "inadequate and ineffective."

As a result, Saudi Arabia's three-year-old war in Yemen is a growing irritant in its deepening ties with the U.S., just as the two countries move to challenge Iran's expanding influence in the region.

The issue is expected to shadow this week's Washington visit by Crown Prince Mohammed bin Salman, the defense minister and a reformer who has formed strong ties with the Trump White House.

In advance of his high-profile visit, Saudi Arabia provided The Wall Street Journal exclusive access to its main military command centers for the Yemen war and top generals overseeing the campaign.

The U.S. relies on Saudi Arabia's help in pursuing al Qaeda fighters in Yemen and Islamic State forces across the region. Prince Mohammed is working with White House adviser Jared Kushner, President Donald Trump's son-in-law, on a new Middle East peace plan. And Riyadh has emerged as Washington's most reliable ally in containing Iran's influence in the Middle East.

Civilian casualties irritate ties as the two nations seek to work together against Iran.

But the administration is grappling with the same questions facing the Obama administration: How much help should the U.S. give to Saudi Arabia? How much moral, political and legal culpability does the U.S. have when American weapons and support are used to kill civilians?

"We understand the concerns about civilian casualties, which is exactly why we have been working with them on this issue," a U.S. official said.

Human-rights groups are pressing the U.S. to stop selling advanced weapons that Saudi Arabia uses in Yemen.

A dozen aid groups, including Mercy Corps and Oxfam America, urged Mr. Trump in a recent letter to press the crown prince to do more to reduce civilian casualties.

American lawmakers are stepping up their calls for the U.S. to stop sharing intelligence with the Saudi-led coalition and to cut off U.S. midair refueling operations for the warplanes carrying out airstrikes. Republican Sen. Mike Lee of Utah has joined with Vermont independent Sen. Bernie Sanders on a resolution seeking an end to U.S. support for the Saudi war in Yemen.

U.S. support dates to the early days of the war, when Riyadh sought help for what Saudi officials assured the Obama administration would be a relatively short military campaign. Eventually, President Barack Obama suspended U.S. sales of precision-guided weapons to Saudi Arabia and curtailed military support.

"If our support meant that we were complicit in unnecessary civilian suffering, that was troubling to a lot of us," said Tom Malinowski, an Obama administration assistant secretary of state.

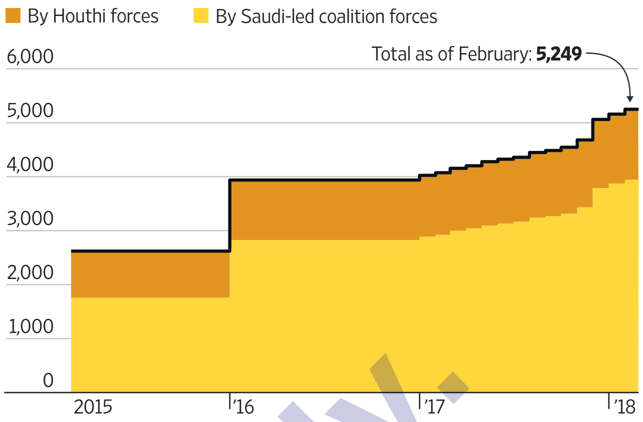
When Mr. Trump took office, he lifted the ban on precision-guided missiles to Saudi Arabia, sent military advisers back into the combat operations centers and resumed sharing targeting information.

YAHYA ARHAB/EPA/SHUTTERSTOCK

The site of alleged Saudi-led airstrikes that killed at least nine people in the Yemen capital Sana'a.

Rising Toll

Cumulative number of civilians killed in Yemen



Note: Figures for 2015 and 2016 represent the total at the end of the year.

Source: United Nations

THE WALL STREET JOURNAL.

Freed Media Mogul Talks Up Possible Deal With Riyadh

BY MARGHERITA STANCATI

RIYADH—The founder of the Arab world's largest media company, who was rounded up in the Saudi corruption crackdown, has emerged to tout a potential joint venture with the government, a sign of the ruling elite's outreach to the corporate world as the crown prince prepares to tour the U.S. to woo investors.

Waleed al Ibrahim said the government is in talks to buy a majority stake in his television network, MBC Group, and that he would maintain control of it with a 40% stake, staying on as chairman. Mr. Ibrahim said he didn't surrender the company to win his freedom from a corruption crackdown.

In an interview with The Wall Street Journal late Friday, organized by Saudi officials, Mr. Ibrahim said the government is negotiating with the other four shareholders—three of them relatives of Mr. Ibrahim—to purchase the remaining 60% of the Dubai-based broadcaster from them.

Mr. Ibrahim, 57 years old, was speaking publicly for the first time since he was released after 83 days confined to Riyadh's Ritz-Carlton hotel, which was used as a temporary prison and interrogation center for the anticorruption campaign led by Crown Prince Mohammed bin Salman.

Mr. Ibrahim says he was never accused of wrongdoing, and that he was kept at the Ritz as a witness. "I spent time in the Ritz, yes, but my shares are still with me. I am not selling," Mr. Ibrahim said in a poolside interview at a property that belongs to one his brothers, where he has been living since he was released in January.

Mr. Ibrahim was one of about 380 Saudi people—prominent businessmen, government officials and princes—rounded up in November in the antigraft purge, some only for questioning. The Ritz was cleared of detainees in February, after many of the accused agreed to hand over cash or assets that the government has valued at around $107 billion.

Prince Mohammed has long expressed interest in the government acquiring MBC. The Middle East's leading private media network reaches some 150 million viewers across the region daily, with a 50% market share in Saudi Arabia alone, according to company figures.

—Donna Abdulaziz in Jeddah contributed to this article.

CHINA

Continued from Page One

Mr. Yi, who turns 60 years old this year, earned a Ph.D. in economics from the University of Illinois and taught for six years at the University of Indiana. In the past four years, he has been a member of President Xi's economic-advisory group, giving him important party-insider credentials.

His fluent English was also a plus, allowing him, like Mr. Zhou, to discuss policy and hobnob at meetings of the International Monetary Fund and other major international financial gatherings.

Chief among his new team's priorities is untangling the financial risks that have piled up from debt binges, trying to reinvigorate a lumbering financial sector dominated by big state banks, opening up financial markets and preventing trade friction with the U.S. from buffeting the economy.

"Liu and Yi have a shared understanding of the need for financial-market reforms and liberalization, coupled with more effective regulation," said Eswar Prasad, a Cornell University professor and former China head for the IMF.

The Liu-Yi team also marks an unusual ascent into the leadership of Chinese technocrats who studied abroad and returned to China, dubbed "sea turtles."

In the past, officials with such experiences have been vulnerable to suspicions within China that they would help push a Western agenda. Mr. Liu studied at Harvard's Kennedy School of Government in the 1990s and is also fluent in English.

During his tenure, Mr. Zhou, often along with Mr. Yi, became a champion within the government for market-oriented changes. Yet Mr. Zhou, a skilled politician who put off his retirement for five years, has found himself having to reverse some liberalization efforts.

Senior officials in recent weeks have said Beijing would take more measures to give foreign companies wider access to the nation's financial sector such as insurance. Part of the urgency comes from the Trump administration, which is pressuring China to take immediate actions to address the U.S.'s widening trade imbalance.

In recent weeks, Mr. Xi and his two deputies—Messrs. Wang and Liu—met directly with U.S. officials, people familiar with the matter said—a sign of the president's heightened concerns about China-U. S. ties.

Mr. Xi hosted the U.S. ambassador to Beijing, Terry Branstad, at an informal gathering of both men's families in early February, people with knowledge of the event said. The two have known each other since Mr. Xi visited the U.S. in 1985.

The president also dispatched Messrs. Wang and Liu to meet with the U.S. ambassador separately, those people said. Right before the start of the legislative session, Mr. Liu went to Washington, holding at times contentious talks with senior U.S. officials. A hoped-for meeting with President Donald Trump didn't materialize.

The Trump administration's threats of trade and investment penalties loom over China as it faces significant challenges at home and abroad, including possible conflict next door on the Korean Peninsula. And while the Chinese economy roared ahead last year, boosted by government and state-sector spending, it was also stoked by global demand for Chinese exports—a trend that could quickly fade in the event of a trade war.

The National People's Congress, which closes on Tuesday, marks the culmination of Mr. Xi's efforts over his first five-year term to shake up the political landscape and install himself and his Communist Party at the center of Chinese society.

With relentless crackdowns on corruption and disloyalty, Mr. Xi paved the way for a sweeping overhaul of government bureaucracy.

"What we are witnessing now is [Mr. Xi] putting the structures in place that help to advance his political agenda," said Matthias Stepan, who studies Chinese public policy at the Mercator Institute for China Studies, in Berlin.

Also on Sunday, the congress appointed Premier Li Keqiang to a second five-year term, but Mr. Xi has eroded Mr. Li's authority as he has concentrated decision-making in his hands.

Mr. Xi's dominance doesn't guarantee bold decision-making or breakthroughs on policy impasses, some analysts said.

For instance, Beijing has postponed a proposal to raise the retirement age, a vital but unpopular measure for coping with a rapidly aging population that was originally due to be unveiled in 2017. And a property tax that officials have floated as a curb on property prices faces further delays, even as many new housing projects sit empty.

It remains to be seen whether Mr. Xi is willing to spend his political capital on large-scale overhauls to put the economy on a sounder footing and assuage Washington's concerns over trade imbalances.

So far, Beijing has responded cautiously to Mr. Trump's trade offensives. Even without the prospects of a trade war, Mr. Xi faces a formidable challenge. He has to rein in crippling debt, ensure stable growth in household incomes, reduce inequality and pollution as well as deliver solutions to pressing social issues like access to affordable health care, said Mr. Stepan, the Berlin-based researcher.

JU PENG/ASSOCIATED PRESS

President Xi Jinping took an oath of allegiance to the constitution at the Great Hall of the People in Beijing on Saturday after his re-election.

REUTERS

Yi Gang

A long-serving vice governor at the central bank who will be assuming the top spot, the 59-year-old American-trained economist is known for pushing pro-market overhauls.

REUTERS

Wang Qishan

The former anticorruption chief, 69, who has taken office as deputy head of state, has met with U.S. officials in recent weeks, where he stressed the importance of continued dialogue.

REUTERS

Liu He

The 66-year-old architect of President Xi Jinping's economic policies will oversee the central bank and other financial regulators, effectively becoming the nation's economic czar.

EPA/SHUTTERSTOCK

Yang Xiaodu

The 64-year-old was appointed as head of a new anticorruption body that will extend the Communist Party's policing to tens of millions of officials and public-sector workers.

Syria Kurdish Town Seized

Turkish-backed Syrian rebel forces have taken control of Afrin center, Ankara says

Turkish forces have captured the town center of Kurdish-controlled Afrin in northern Syria, Turkey said Sunday, capping a two-month military campaign that has divided Ankara and its international allies.

By Sune Engel Rasmussen in Beirut and Erdem Aydin in Istanbul

BULENT KILIC/AGENCE FRANCE-PRESSE/GETTY IMAGES

Seizure of the Kurdish-controlled enclave in northern Syria capped a two-month military campaign.

"The Free Syrian Army, with the support of the Turkish Armed Forces, have gained total control over the Afrin town center," Turkey's president, Recep Tayyip Erdogan, said early Sunday, morning, confirming the capture during a World War I commemoration in Canakkale.

The capture of Afrin followed a siege to the city that displaced more than 200,000 civilians.

Turkish-backed Syrian rebel forces entered Afrin from three directions after having encircled it for days. They appear to have encountered little resistance from the Kurdish YPG militia, which has fought the Turks and their allies across the district for nearly two months.

A commander with the Free Syrian Army said Sunday the Kurdish militia retreated from Afrin overnight, which let the Turkish-backed forces capture the city faster than anticipated. Turkey's foreign minister Mevlut Cavusoglu said earlier this month that his government aimed to finish the Afrin operation by May.

Turkey now controls the seven main towns in the enclave of Afrin.

Turkey's military campaign aimed to dislodge the YPG from Afrin to create a buffer zone between the Turkish border and the Kurdish militia.

Yet the two-month Turkish offensive put President Erdogan at odds with his international allies, including the U.S., a NATO ally, which has fought alongside the Kurds against Islamic State.

The U.S. and others have warned that Turkey's offensive on Afrin violated a current one-month cease-fire in Syria, brokered by the United Nations Security Council. U.S. State Department spokeswoman Heather Nauert last month told Turkey to "go and read this resolution, see what the world and the international community is saying about this."

Turkey's foreign ministry spokesman retorted by accusing the U.S. of "making statements that support terrorists."

Turkey regards the YPG as a terrorist group for its connection to the PKK group that has waged a four-decade insurgency against the Turkish state. The U.S., however, has joined with the YPG against Islamic State.

Mr. Erdogan has called on Ankara to cease its offensive, although without interfering in Afrin.

Video footage on social media appeared to show Turkish soldiers hoisting Turkish flags atop administrative buildings in town. A Kurdish official confirmed that pictures of a broken statue depicted a location in the center of Afrin.

Control of Afrin strengthens Mr. Erdogan's hand as he prepares to host his Russian and Iranian counterparts for a three-way summit on Syria on Apr. 4. Mr. Erdogan has tried to position himself as one of the leading brokers deciding Syria's fate, but Syrian President Bashar al-Assad—backed by Moscow and Tehran—has continued to assert control of the country.

The swift capture of Afrin heightens the need for a diplomatic solution in Manbij, another Kurdish-controlled town further east that Mr. Erdogan has vowed to attack. Such a move risks bringing the Turkish army into direct conflict with U.S. Special Forces based in Manbij.

"We do not accept to be stalled. If the U.S. evacuates Manbij fully, then we would complete the job faster and easier," Mr. Erdogan said at a party congress on Friday. "We do not ask for any favors from them."

Until recently, Afrin was regarded as a haven from Syria's war, now in its eighth year. But when Turkey moved against the YPG in January, foreign forces stood aside.

Russia, which controls the airspace over Afrin, allowed access to Turkish warplanes. The U.S., Turkey's NATO ally and backer of the YPG, protested the offensive but didn't intervene. The YPG asked the Syrian regime for assistance, but that help was short-lived.

At least 250 civilians have been killed in the Turkish offensive in Afrin, according to the Syrian Observatory for Human Rights.

WORLD WATCH

AUSTRALIA

Regional Leaders Agree on Direction

Southeast Asian leaders and Australia's prime minister pledged to strengthen economic ties to face the growing backlash against globalization and called on North Korea to end its nuclear and missile programs.

Concluding a special summit in Sydney aimed at binding Australia more closely to its neighbors amid China's growing influence and uncertainty over the U.S.'s commitment to Asia, regional leaders also warned against rising protectionism, in what appeared to be a veiled criticism of the White House's tariff plans.

—Rob Taylor

IRAQ

U.S. Helicopter-Crash Casualties Identified

The Defense Department has released the names of seven airmen who were killed Thursday when an HH-60 Pave Hawk helicopter crashed in western Iraq. The cause of the crash remains under investigation.

Those who were killed include Capt. Mark K. Weber, 29 years old, of Colorado Springs, Colo. He was assigned to the 38th Rescue Squadron at Moody Air Force Base, Ga.

Four of the airmen were assigned to the 106th Rescue Wing at the Francis S. Gabreski Air National Guard Base, N.Y.:

Capt. Andreas B. O'Keeffe, 37, of Center Moriches, N.Y.

Capt. Christopher T. Zanetis, 37, of Long Island City, N.Y.

Master Sgt. Christopher J. Raguso, 39, of Commack, N.Y.

Staff Sgt. Dashan J. Briggs, 30, of Port Jefferson Station, N.Y.

Two were assigned to the 308th Rescue Squadron, Air Force Reserve, at Patrick Air Force Base, Fla.:

Master Sgt. William R. Posch, 36, of Indialantic, Fla.

Staff Sgt. Carl P. Enis, 31, of Tallahassee, Fla.

—Associated Press

KOREAN DIPLOMACY

Finland Will Host Tripartite Talks

A North Korean official will hold unofficial talks in Finland with a delegation from the U.S. and former South Korean government officials, Seoul's foreign ministry said, amid a flurry of recent diplomatic activity before an expected U.S.-North Korean summit by the end of May.

However, American officials said the meeting in Finland isn't part of the process leading up to a planned meeting between President Donald Trump and North Korean leader Kim Jong Un, but would be an informal discussion.

—Andrew Jeong

MAURO PIMENTEL/AGENCE FRANCE-PRESSE/GETTY IMAGES

ANGER: Protesters march to remember Brazilian activist Marielle Franco, shot and killed on Wednesday in her car in Rio de Janeiro.

IN DEPTH

HOMES

Continued from Page One

western Michigan city asking him to build them a new home. He turns most of them down.

Demand for housing is stronger than he has ever seen, he says, but land and construction costs have roughly doubled since the end of the last boom a decade ago.

So Mr. Snowden has shifted his focus from starter and mid-price houses to high-end properties, where the profit margins are fatter. His production has dropped from roughly 25 homes a year in the mid-2000s to about a dozen, he says.

Hardly any entry-level homes are going up in town, he says. "If I was a young couple today, unless you're making really good money, what are your options?" he says, "short of moving into a $1,000 a month apartment"—an expensive proposition in this part of the country.

A combination of tightened housing regulations, lack of construction labor, and a land shortage in highly prized areas is driving the crisis, according to industry experts.

Even during the deep recession of the mid-1970s and the downturn in the early 2000s, builders put up significantly more homes per U.S. household than they are constructing now, in the ninth year of an economic expansion. Only at the bottom of the 1981 and 1991 economic downturns were per-household construction levels near what they are now, according to Jordan Rappaport, an economist at the Kansas City Fed. He says the only period when the U.S. might have built fewer homes by population was during World War II.

Building slowed to a halt after the real-estate crash a decade ago as millions of homes across the U.S. were seized in foreclosure and sold, many of them converted to rentals.

Now, construction isn't matching rising demand, not only in glamour cities such as San Francisco and New York, but also, increasingly, in metropolitan areas such as Grand Rapids.

The National Association of Home Builders estimates builders will start fewer than 900,000 new homes in 2018, less than the roughly 1.3 million homes needed to keep up with population growth. The overall inventory of new and existing homes for sale hit its lowest level on record in the fourth quarter of 2017, at 1.48 million, according to the National Association of Realtors.

That, in turn, is pushing up prices at what economists say is an unsustainable pace. The S&P CoreLogic Case-Shiller National Home Price Index rose 6.3% in 2017. That was roughly twice the rate of income growth and three times the rate of inflation.

Bidding wars

The lack of homes for sale has fueled bidding wars around the country, making things harder for first-time buyers.

Alison Black, a 43-year-old office manager at New Urban Home Builders, a Grand Rapids residential builder, has spent nearly a year looking for a home but was outbid on a half-dozen properties before snagging one in February. Ms. Black has been renting a loft downtown, which she says feels like "bundling a $1,500 wad of money and throwing it out the window every month." She has about $25,000 in savings, but every month the balance dwindles.

At one point, she contemplated moving in with her mother to try to save more. Instead, she got a second job, as a saleswoman at a spirits, wine and beer store. One of the houses she looked at received 16 offers in 48 hours, and the winner paid more than asking price—in cash, she says.

When the buyers who outbid Ms. Black on one home rescinded their offer because of concerns about an inspection report, she pounced. She closed on the property, a 1,500-square-foot home for which she agreed to pay about $7,000 over the asking price of $163,000.

"This market is just insane. Those are the lengths that you go to," she says. "It's a good time to be here in Grand Rapids—if you can get a house."

Builders cite numerous factors contributing to the construction slump. A decadeslong push for young people to go to college has driven down trade-school enrollment, depriving builders of skilled labor. Declining numbers of immigrant construction workers have sapped builders of unskilled labor.

Builders in far-flung exurbs are encountering stiffer resistance from young buyers even as prices ratchet higher for land closer to cities. Economists say that in many large metropolitan areas, suburbanization might simply have reached its limits, as potential buyers increasingly reject long commutes. During the 1950s, buying a home in a new suburb, while land was plentiful and cheap, often meant driving half an hour to a job in the city. Today, commutes from new developments can be several times that long.

"There's a tremendous mismatch between the places where people want to live and the places where it's easiest to build," says Edward Glaeser, a professor of economics at Harvard University who studies constraints on housing supply.

'It's a good time to be here in Grand Rapids, if you can get a house.'

After years of moribund building activity, there have been signs of improvement in recent months. The homeownership rate increased last year for the first time since 2004, driven by younger buyers who overcame rising prices and a lack of inventory to purchase their first homes. Single-family home starts increased 2.9% for the 12 months ending in February, according to U.S. Census data.

But building remains below historical averages, and economists say it is unlikely to return to those levels before the next recession.

"It's hard for me to see on single-family how you can build your way out of this," Mr. Rappaport says. "Even with these heroic efforts" to overcome barriers to building new housing, he says, there is little chance "that you're going to get a new stream of single-family homes that can relieve demand."

Coastal cities such as San Francisco, New York and Boston have taken criticism for their restrictive building codes, which make it more difficult to create enough housing to keep up with population growth.

Even metropolitan areas with more permissive approaches to building are lagging behind their historical construction levels. Housing permits in Memphis, Tenn., were 44% below their historical average in 2017, according to the latest Census figures analyzed by real-estate data firm Trulia, while permits in the Minneapolis metropolitan area were 16% below average.

Grand Rapids, Michigan's second-largest city, has many hallmarks of a boomtown. Once dubbed "Furniture City" for its concentration of high-end manufacturers, it averted the hard times that befell many industrial towns partly because of the philanthropic efforts of wealthy local dynasties such as the DeVos and Van Andel families. Civic leaders and investors poured hundreds of millions of dollars into a new convention center, hotels, a performance hall, an arena and a "medical mile" of hospitals, educational institutions and research facilities that have become major employers.

The number of jobs in Grand Rapids grew by 23% between 2010 and 2017, while median family income, adjusted for inflation, increased 16% in roughly the same period, making it one of the fastest-growing economies in the U.S., according to a Trulia analysis.

The city's downtown brims with coffee shops, yoga studios and purveyors of artisanal food, helping to entice young college graduates to stick around.

Missing component

But the boom is missing one critical component. New housing construction is 22% below the historical average, making Grand Rapids one of 69 major metropolitan areas where construction is still below normal levels, according to the Trulia analysis.

Builders say this is partly because the wounds from the housing crash, when hundreds of local builders went out of business, haven't healed. The number of members of the Home Builders Association of Greater Grand Rapids dropped from a peak of more than 1,300 in 2005 to fewer than 400 in 2012. Today, the association has just over 500 members.

Nationwide, membership in the National Association of Home Builders peaked at 240,000 in 2007, then dropped to 140,000 in 2012, where it has remained throughout the recovery.

Mr. Snowden, the Grand Rapids builder, says that before 2008, banks would lend him money as quickly as he could put up homes. When the market crashed, he was $2 million in debt with a dozen empty homes on his hands.

Most of his contemporaries left the business altogether. Mr. Snowden survived by fixing up bank-owned foreclosures—some of them homes he had built himself—and reselling them. "I swore I'd never build [new] houses again," he says.

When he returned to new construction a few years ago, it was on different terms. He avoids debt and won't build a home unless buyers finance the cost themselves or pay in cash.

In the late days of last decade's housing boom, as empty new homes began accumulating, municipalities started tightening building regulations to try to rein in development. Unsold homes and empty lots dragged down property values.

Today, those regulations remain. The Michigan Residential Code, which helps regulate home construction standards in the state, has swelled to 862 pages, from 556 pages two decades ago, according to Brian Wilson, director of inspections for Cascade Township, in the Grand Rapids area. However cumbersome the rules might seem, he says, they promote better standards for everything from safety to energy efficiency and longevity of the homes.

Some rules adopted by planning boards to improve quality of life end up increasing costs. Zoning in the most desirable parts of Grand Rapids, for example, often requires lots to be 2 acres or larger, discouraging construction of starter homes.

"Those that already live in communities many times look down on an entry-level home," says John Bitely, president of Rockford, Mich.-based Sable Homes. "They forget that they at one time had to have one themselves."

In 2016, the National Association of Home Builders estimated regulatory costs added nearly $85,000 to the cost of a home, up more than 30% since 2011.

Andy Lofgren, executive officer of the Home Builders Association of Greater Grand Rapids, says it now takes about seven months to build a home in the area, up from four months during past booms.

A worsening labor shortage is adding to the problem. The construction workforce in the U.S. declined to 10.5 million in 2016, from 10.6 million in 2010, when the real-estate market was near bottom, according to an analysis of U.S. Census data by Issi Romem, an economist at BuildZoom, a startup that tracks construction data for building contractors.

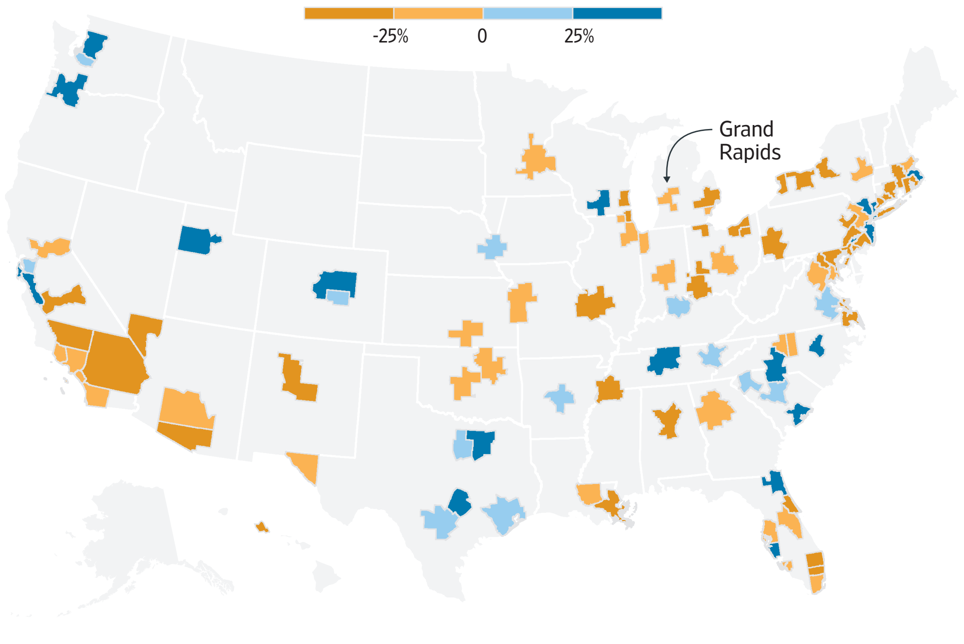
Todd Peuler was hired 3½ years ago as a recruiter for Michigan building supplier Fox Brothers Co., a subsidiary of Beacon Roofing Supply Inc. Mr. Peuler says it takes about twice as long to build a house as it did in the past because of lag time waiting to find workers to complete tasks. Sometimes, he says, clients are expecting to move in, but a house is still wrapped in plastic because workers are needed to put on siding.

"The workforce is in their 50s and 60s. They're retiring and there's no new bloodline coming in," he says. "We didn't get in this situation overnight, and it could take years to get out."

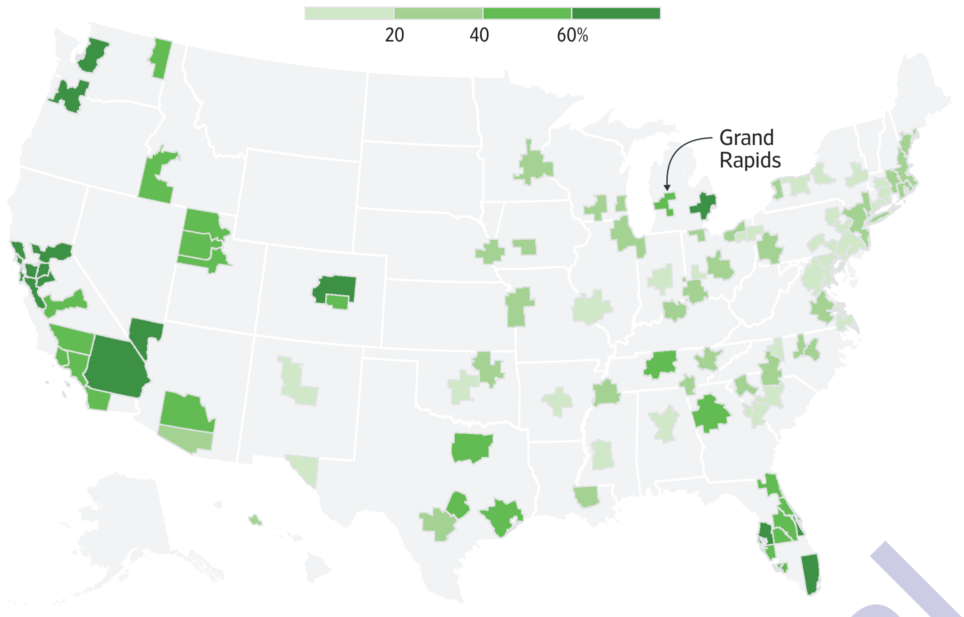
Still Broken

Home construction per household a decade after the bust remains near the lowest level in 60 years despite strong demand in many markets.

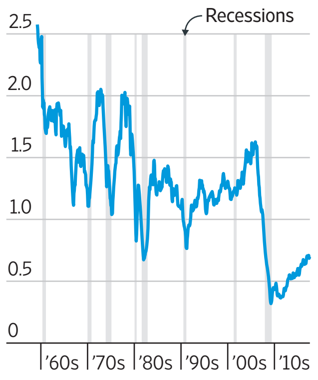
Homebuilding permits in major metropolitan areas in 2017, relative to historic average



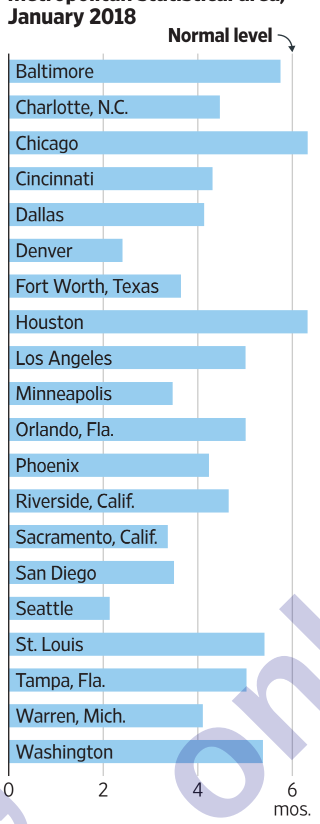
Home-value growth in major metropolitan areas, 2013-18



Housing starts per household, 3-month moving average



Months of housing supply, by metropolitan statistical area, January 2018



Sources: Zillow (permits); Trulia (values); Federal Reserve Bank of Kansas City (starts); CoreLogic (supply)

THE WALL STREET JOURNAL.

NOVELS

Continued from Page One

the businessman in "Reunion with Benefits" to look like a jerk—or worse.

Last fall, amid the sexual-harassment scandals that toppled a list of influential men, novelists began to re-evaluate the appeal of the rake in the corner office. Some authors of office romances say they have become more vigilant as they make sure their happily-ever-afters comply with good workplace behavior.

Writers are engineering the first kiss outside corporate headquarters and making their alpha male suitors a bit more circumspect. Some have found the perfect villain in the office pervert. Others embrace telling details, like leaving an office door open to signal the absence of funny business from 9 to 5.

Spence Jameson certainly got the message. In Ms. Dimon's book, when he spots a colleague ogling a female co-worker, he thinks: "Nothing about that look was professional or appropriate. The lack of respect was not OK."

Lauren LeDonne, whose pen name is Lauren Layne, said as she was writing "I Think I Love You," a romance set at a men's magazine, her couple's power imbalance suddenly left her feeling uncomfortable.

So she made sure heroine Brit Robbins was no longer reporting to vice president of digital marketing Hunter Cross by the end of the book, due out in July. "I realized I really can't write a romance in which the heroine is basically sleeping with her boss," said the 34-year-old Manhattan author. For good measure, she had the magazine's male editor in chief glare at his randy staffer. "I don't like fraternizing between my employees," he tells Hunter.

Romance writers say the genre—largely written, edited and read by women—has embraced social change and promoted issues like sexual consent long before the rest of the culture. Many bodices ripped against a heroine's wishes in books from the 1970s and 1980s would prompt a swift backlash today, they say, adding that new books known on social media as #ResistanceRomance are gathering a loyal following.

Harlequin Series editorial director Joanne Grant said she has seen more submissions of office romances since the February launch of the Harlequin Dare line, which focuses on empowered women in the present day.

Noting romance novels are escapist fiction, Ms. Grant said the heroines do have influence. "The heroine wields real power in the relationship because even though the hero is often in a position of power, the heroine has agency over her desires and her life," she said in an email. "After all, a true romance always has a happy ending where the heroine gets what she wants—on her terms." Harlequin is a division of HarperCollins which, like The Wall Street Journal, is owned by News Corp.

On the book site Goodreads, one of this March's most popular romances is "With This Man," from a series featuring hero Jesse, a rich developer who exerts total control over interior-designer wife Ava.

In Jodi Ellen Malpas's novel, Ava suffers a head injury and forgets the last 16 years, including her work with her husband on business projects. The accident flips the power dynamic and leaves Jesse with far less command over their relationship.

When Sophie Stern started writing the office romance "Rex from HR" a few months ago, she put characters in different departments at software company Blossom Falls—Lucy is in marketing and Rex in human resources—so the flirting wouldn't raise distracting ethical questions for readers. The 30-year-old self-published author from Pittsburgh, Kan., who would give only her pen name, will keep writing stories in corporate settings. Her book due out in May is the second in a series that started with "Ben from Accounting" and will continue with "Dane from Tech Support."

Office romances aren't the only love stories taking cues from the headlines. Lenora Bell's historical romance out this month, "What a Difference a Duke Makes," initially featured the wickedly handsome duke of Banksford kissing much-younger new governess Mari Perkins for the first time at his home—which is her workplace.

"I just thought, 'You know what? No,'" said the 45-year-old author from Portland, Ore., who declines to publish her real name. She took Mari off her tiptoes in the duke's library and put her in the foundry where he builds steam engines, trying to keep them on more even ground. "Steam hissed somewhere," Ms. Bell writes. "She wanted him to kiss her. But he couldn't do that. It was against his code of conduct." Finally the heroine says "Oh for Heaven's sake" and kisses him.

While writing "Like a Boss," a self-published novel due out in late March, Sylvia Pierce and Lili Valente planned to cut some long stretches of dialogue about chauvinism. But after watching real-life scandals, they kept it in.

Ellie, an undercover reporter working with CEO hero Jack to expose gender inequality at Seyfried & Holt Investments, tells him she has spotted 17 cases of overt sexism in one day. Jack's gut clenches in horror. "S&H is supposed to be different," he thinks. "A fair, fun, and challenging place to work."

Later, as he slides his hands over Ellie's shoulders, Jack has an awakening. "As much as it stings to admit it," he thinks, "this past week is the first time I've ever given gender politics much thought."

DESIGN: GERMANCREATIVE; VIKA OVCHARENKO/DEPOSIT PHOTOS

PENGUIN RANDOM HOUSE PHOTO: DARI YA/SHUTTERSTOCK

'I don't know how you'd ever write a workplace romance without thinking, "How does human resources feel about this?"' an author says.

GREATER NEW YORK

GREGG VIGLIOTTI/ZUMA PRESS

Storm damage in the north Bronx this month. Municipalities in the suburbs are grappling with what they can do to avoid power outages.

Outages Rattle the Suburbs

Towns field calls to act, but burying power lines is costly, and cutting trees is a tricky issue

By Melanie Grayce West

As yet another nor'easter takes aim at the region, residents of New York City's northern suburbs are worried about losing power and wondering what they can do to make the electrical system less vulnerable to storms.

The frequency of outages in the Hudson Valley, northern New Jersey and western Connecticut this winter has frustrated thousands, but the solutions aren't so palatable, either. In short, residents can cut down their trees or pay astronomical costs to bury power lines.

The calls for tree trimming in the town of Greenburgh, N.Y., started up in earnest at the peak of the power outages earlier this month, said Paul Feiner, the town supervisor. "Everybody wanted the trees cut," he said.

But as Mr. Feiner has seen over 27 years in his job, memories are short. As soon as power is restored, anger subsides. Greenery adds value to property and character to neighborhoods, and some residents bristle when utility workers show up to remove nearby trees.

To minimize conflicts, utilities like to work alongside a town's arborist when possible, said Michael West, a spokesman for Avangrid, the parent company of New York State Electric & Gas Corp., which serves customers in the Hudson Valley.

While underground infrastructure is standard for newer towns and developments, New York's suburbs are among the oldest in the U.S. There are pockets of underground cables, but most of the grid remains above ground.

Greenburgh has no plan to move cables underground on a widespread basis. But Mr. Feiner is advocating for gradual undergrounding where appropriate, supported with federal, state, county and local dollars.

Representatives for NYSEG and Consolidated Edison, another major provider in New York State, said the cost of undergrounding runs to $1 million or more per mile of power line. The cost goes up based on the difficulty of installing the line, experts said. Moreover, it costs several thousand dollars to retrofit the infrastructure of a house to receive the underground power.

Residents of New York suburbs already pay high energy costs. In Westchester County, Consolidated Edison customers using 600 kWh of electricity in their homes paid a monthly average of $139.53 in 2016, according to data from the company. The same usage rate for a Rochester Gas & Electric customer cost $78 in 2016.

$1M
Approximate cost per mile of moving power lines underground

"Undergrounding is expensive and is essentially for dense urban areas and selective locations, and not outlying areas," said Robert McGee, a spokesman for Consolidated Edison. Towns "sometimes evaluate plans for selective undergrounding depending on circumstances, but wholesale applications would be both financially prohibitive and impractical."

Several Westchester municipalities, including Port Chester and Croton-on-Hudson, have considered or pursued plans to underground parts of the city, usually along a main street or in a village area.

The town of Greenwich, Conn., considered undergrounding a section several years ago, but backed away from the idea when other utilities—cable and phone, for example—didn't want to buy into the process, according to Barbara Heins, an executive assistant to Greenwich's First Selectman, Peter J. Tesei.

"People think, you can bury electricity," Ms. Heins said, "but the utility poles are still holding wires for the rest of the utilities. Seriously, it's a total concept."

If undergrounding isn't possible, Mr. Feiner, of Greenburgh, thinks New York state should offer a tax credit on the purchase of generators.

"A lot of Westchester people don't have a lot of tolerance for being freezing," he said.

New Venue Aims to Join Lower Manhattan's Buzz

By Charles Passy

Not long ago, lower Manhattan essentially shut down at 5 p.m. Now, it is getting a major new nightspot.

The Beekman hotel, which has established itself as one of the hotter destinations in the area since opening in 2016, is adding what it bills as a "refined post-modern lounge" to its offerings.

The hotel brought in Serge Becker, a veteran New York club, bar and restaurant operator, to create a new venue in collaboration with Tom Colicchio, the celebrity chef behind one of the hotel's two restaurants.

Dubbed the Alley Cat Amateur Theatre, the 2,500-square-foot space is scheduled to open early April.

PETER FOLEY FOR THE WALL STREET JOURNAL

The Beekman's atrium lounge. The hotel is adding another space as lower Manhattan's nightlife grows.

The new lounge is the latest sign that lower Manhattan is becoming more of an after-hours gathering spot. Other prominent bars in the area include BlackTail and the Dead Rabbit, which recently announced plans to nearly double in size.

The neighborhood, said Art Sutley, publisher of Bar Business Magazine, is "becoming a destination."

Beekman Area Managing Director Rob Andrews said the hotel was aiming to find a major name in nightlife to steer the creation of the space. The idea was to build on the buzz of Mr. Colicchio's contemporary American dining spot, Temple Court, and Augustine, Keith McNally's brasserie-style restaurant.

"We wanted to make sure we kept it up," Mr. Andrews said.

Mr. Becker is known for his colorful ideas and the attention to detail he brings to spaces, said Phil Knott, a nightlife expert and general manager of Tivoli Village, a shopping and dining complex in Las Vegas. "He puts everything into it," he said.

Lounge is latest sign that the neighborhood is gaining popularity after-hours.

Though Mr. Becker hasn't been active on the nightlife scene in the past few years, he spent decades designing many of New York City's hottest spots, including the burlesque-oriented club the Box and the speakeasy-style Mexican place La Esquina.

More recently, he worked as creative director at the Museum of Sex, steering the site's new efforts to draw visitors.

For the Alley Cat, Mr. Becker gave the space a cellar-like feel, in keeping with its underground location, and added touches of both upscale and industrial. Exposed mechanical elements and brickwork are key examples of the latter.

"The concept is we're in the basement, so let's not try to hide it," Mr. Becker said.

He noted that he doesn't consider the Alley Cat a "club" in the strictest sense and that he is aiming for something more low-key.

The venue's name refers to the hotel's location, an area once filled with theaters. Mr. Becker plans to play into that history and feature live music some nights with a grown-up vibe. He cited the Café Carlyle, a legendary New York City cabaret venue, as "a kind of loose inspiration."

As for food, Mr. Colicchio is offering a Japanese-inspired menu modeled on the pub-style izakaya concept.

Tax Code Gets Top Billing in Budget Talks

By Mike Vilensky

Gov. Andrew Cuomo and state lawmakers will convene Monday in Albany for two weeks of budget negotiations to meet an April 1 deadline.

The annual talks for a roughly $160 billion spending plan carry additional political importance this year ahead of gubernatorial and legislative elections in the fall.

"It's something they can point to that shows a level of efficiency and concern for the taxpayers," said William Cunningham, a Democratic strategist and former aide to Gov. Hugh Carey.

As in past years, the spending plan isn't purely a monetary package because Mr. Cuomo and lawmakers yoke their political priorities to its passage. For Mr. Cuomo, a Democrat, the budget marks an opportunity to bolster his progressive bonafides before he begins campaigning for re-election and on the heels of a guilty verdict against a former senior aide. All 213 legislative seats also are up for grabs in November.

Negotiations are expected to get tricky. Senate Deputy Majority Leader John DeFrancisco, a Republican, is running against Mr. Cuomo and is expected to draw a hard line against some of the governor's proposals.

Here are some of the issues that will be at the top of talks:

Taxes

Mr. Cuomo has called for changes to the state tax code that he says could offset the impacts of the new GOP-backed federal tax law. He proposes replacing part of the state's income tax on individuals with an equivalent payroll tax on employers.

Earlier in March, the Assembly's Democratic majority said it largely accepts Mr. Cuomo's plan, but the Senate's Republican majority has remained cool to an idea that attacks a law pushed by their national counterparts.

As the marquee item of Mr. Cuomo's budget proposal, the tax overhaul is expected to take up a lot of time in negotiations.

Transportation

Mr. Cuomo has said he would back a plan to charge Manhattan motorists fees at peak hours, an effort to reduce congestion and raise revenue for public transportation amid a crisis of subway problems in New York City. But he hasn't voiced full-throated support for a particular pricing proposal, even as the idea has gained steam with advocates and lawmakers.

The Assembly recently proposed a plan that would only charge taxis and ride-sharing vehicles; the Senate has said it is open to discussions but hasn't gotten behind any congestion-pricing plan.

Supporters of a congestion-pricing plan laid out by a Cuomo-assembled transit panel earlier this year expressed disappointment in the Legislature over the issue, saying they will be "demanding a more serious response" to the city's traffic and transit problems in the coming weeks.

New York City Housing Authority

The governor recently has been highlighting problems within the city's public housing, a political vulnerability for his longtime rival Mayor Bill de Blasio, a Democrat.

Mr. Cuomo's administration is calling for an independent monitor of the housing authority, managerial changes within the agency, and a new, detailed spending plan in exchange for $200 million in state money.

Senate Deputy Majority Leader John DeFrancisco, left, and Gov. Andrew Cuomo

The Assembly supports the funding but is more closely allied with Mr. de Blasio, who has defended NYCHA leaders and management. The Senate has said it is "open to discussing" measures to help.

Assemblyman Daniel O'Donnell, a Democrat, said the Cuomo administration budgetary offer is inadequate, and expressed reservations about any strings attached to the money. "Let's just fix it and stop trying to assign blame," he said.

Sexual Harassment

Mr. Cuomo and legislators are largely in agreement on a measure to end taxpayer settlements for sexual harassment in state government, but questions remain about who will be included in talks on the issue.

Mr. Cuomo's office recently said it would include Sen. Minority Leader Andrea Stewart-Cousins in the negotiations, which would add a woman to the otherwise all-male talks that include three legislative leaders and Mr. Cuomo. But Ms. Stewart-Cousin's spokesman said she hasn't heard from the governor yet. "She would add a powerful voice to what has always been just men," he added.

GREATER NEW YORK WATCH

NEW YORK STATE

Group Urges Albany Not to Forget the Poor

An organization representing churches around New York is urging lawmakers to remember the state's most vulnerable residents as they put together the next state budget.

The New York State Council of Churches is holding a series of events around the state this week to highlight the need for more help for the 1.7 million New Yorkers living in poverty.

One event will be held Tuesday in the state Capitol, where lawmakers are working to pass a new state budget before the April 1 deadline.

—*Associated Press*

NEW JERSEY

Shooting on Roadway Leaves Man in Critical

A shooting from one vehicle to another on a busy New Jersey roadway sent a man to the hospital in critical condition, authorities said.

The gunfire erupted between 5:15 a.m. and 5:45 a.m. Saturday on Routes 1 and 9 in Elizabeth, near the Newark line, the Union County prosecutor's office said.

Gunfire from a dark-colored sport utility vehicle or pickup truck hit an occupant of a white SUV, prosecutors said.

The driver took the 28-year-old victim to get emergency medical treatment. The Elizabeth resident was reported in critical condition at a hospital.

—*Associated Press*

CONNECTICUT

Charging Station Penalties Weighed

Connecticut lawmakers are considering whether to penalize people who illegally park at public electric-vehicle charging stations.

The General Assembly's judiciary committee has scheduled a public hearing on Monday to hear testimony on a bill that would make it an infraction, typically punishable by a fine, for parking a vehicle that isn't a plug-in hybrid electric vehicle or a battery-electric vehicle at a charging station.

There is a similar bill before the planning and development committee that would impose a $150 fine for violators. Repeat offenders would face a $250 penalty.

—*Associated Press*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LIFE & ARTS

FOOD

The Superfood You Always Knew

The latest trendy ingredients in snacks and at mealtime are old-fashioned beans, chickpeas, lentils and peas

BY ANNE MARIE CHAKER

ANNA HOWLE once swore she would never eat another bean.

The 53-year old government program manager in Washington, D.C., ate pinto beans every day growing up in a Native American community in Central New Mexico. "Beans were a sign of poverty," she recalls.

But she has focused more on nutrition in the past year and recently signed up with a Weight Watchers plan that, to her surprise, encourages people to eat beans. "I've gone back to pinto beans," she says, preparing them at least twice a week in her crockpot.

Beans are the new kale. More than 2,500 new food products touted pulses, a category that refers to beans and other dry-harvested legumes including chickpeas, lentils and peas, in 2017. That marks an 11% increase from 2016, according to Innova Market Insights, which tracks new foods. At the same time, products containing kale declined 15% and "ancient grains" like quinoa dipped 7%.

More than ever, food companies roll out waves of trendy ingredients to compete with one another. As labels, sourcing claims and dietary restrictions make eating more complicated, industry executives say, consumers want simplicity. An old-fashioned ingredient offers something easy to latch onto.

"Everything about a bean is fashionable," says Lu Ann Williams, Innova's director of innovation. "It says wholesome and natural and good for you."

Chickpeas are appearing in the snack aisle, black beans are in pastas and peas are a featured ingredient in substitutes for milk and meat. Pulses are a modern food marketer's dream. They're plant-based, a source of protein and naturally gluten-free.

Love Grown Foods, which makes cereals including Comet Crispies and Sea Stars, puts "Beans for Breakfast!" on boxes. Saffron Road chips made of chickpeas, lentils and peas claim to be "powered by plant protein." Hippeas chickpea puffs ask consumers to "give peas a chance."

Bean-based snacks are fighting their way out of the health-food aisles and into the mainstream. PowerPlant Ventures, a venture capital fund with investments in 15 food brands, purchased a majority stake in tortilla chip brand Beanfields in 2017.

The fund's managing partner, Mark Rampolla, thinks Beanfields can get millennial men to switch from Doritos. He says consumers in their 20s and 30s are growing up: "They're worried about their health. They've got girlfriends who are not so hot on Doritos." (A spokesman for Frito-Lay, which makes Doritos, says, "We're proud to offer a broad portfolio of products that meet a wide variety of consumer needs and preferences.")

Beanfields, founded in 2011 by a vegan couple in Los Angeles, netted $6 million in sales in 2016, Mr. Rampolla says. The chips were sold mainly in health food stores.

In the past six months, he has tripled staff to include a sales force charged with getting more chip bags into more stores, ensuring shelves are stocked and helping create in-store sampling programs—a strategy he calls "chips in mouths." Free sampling has doubled to 600 stores and the company has given away four times more 1.5 ounce bags.

The strategy seems to be working: In the past year, he has expanded distribution 67% to 5,000 stores. He expects to hit $10 million in sales by the end of the year and over $50 million by 2020.

Mr. Rampolla—who founded Zico coconut water, which Coca-Cola purchased in 2013—says trumpeting single ingredients in foods isn't always a smart long-term strategy. The ingredient usually only works in a limited number of foods, then consumers get bored and move on to something else. But beans are a broad enough category that can serve as a base for many foods, he says, offering a good foundation for expansion. "Right now, it's chips. But the brand could go across many things. How we do that, we don't know yet. But the potential is massive."

The rise in popularity of hummus, made largely from chickpeas, may have led the way for the pulse revolution. "Chickpeas were the gateway," says Tim McGreevy, chief executive of the American Pulse Association, which represents growers and processors of beans, peas, chickpeas and lentils. Planted acres of chickpeas alone nearly doubled in 2017 in the U.S. from a year earlier, he says. Roasted chickpeas are now a mainstay of the snack aisle. Chief executives at brands including The Good Bean and Biena Snacks, whose roasted chickpeas come in familiar flavors such as honey roasted and sour cream and onion, say sales have at least doubled in the past year.

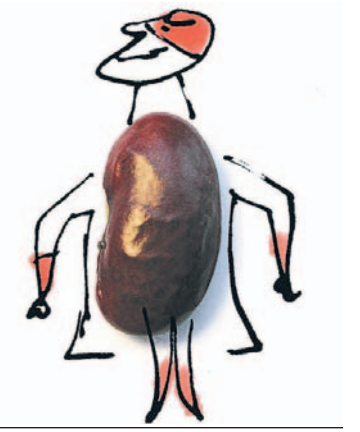
Talia Haslanger, a stay-at-home mother of two young boys in Kenner, La., says her family goes through about four 5-ounce bags of roasted chickpeas a week. She packs them in lunchboxes on most days and likes that they circumvent nut-free restrictions at preschool. "It's something I don't feel bad about eating in front of my kids and sharing with them," she says.

Snack giants like Frito-Lay are paying close attention. Last year, it tested a new line of chips called Off the Eaten Path—featuring ingredients such as peas, black beans and chickpeas. It is now broadening the snack lineup to include more varieties—including roasted chickpeas—and expanding distribution.

"People are looking for more out of their snacks than they have in the past," says Tyler Chapman, senior vice president of marketing at Frito-Lay, a unit of PepsiCo. He believes beans are more than a flash in the pan. "You can build pipelines of products using it as a base."

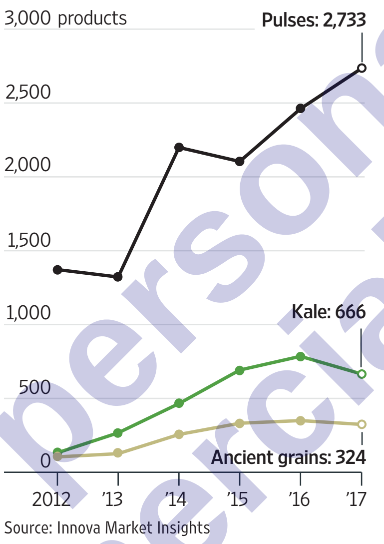
Some food brands, such as Banza pasta, are using chickpeas to create product lines that are gluten-free, grain-free and vegan. Just don't call it that.

"It doesn't say 'gluten-free' deliberately," says Brian Rudolph, Banza's co-founder. Instead, his line of rotinis, pennes and angel hair pastas tout "made from chickpeas" in bold letters on the front of boxes. "We like focusing on the positives," he says.



Move Over, Kale

A rising number of product launches feature pulses—a food category that includes beans, chickpeas, lentils and peas—as a key ingredient.



Source: Innova Market Insights

THE WALL STREET JOURNAL.

ChickBean Crisps by Saffron Road are made of chickpeas, lentils and peas.

The Story Behind the Rise of the Bean

Beans, it turns out, really are good for your heart.

Once a source of elementary school punchlines, beans are finally getting respect. More people are giving pulses a closer look as they embrace plant-based foods and cut back on meat. The American Heart Association says eating beans as part of a heart-healthy diet can improve blood cholesterol, a leading cause of heart disease.

About 36% of consumers say they are eating more meatless meals these days, according to a 2017 survey of 2,000 adults by Packaged Facts, a Rockville, Md.-based market research firm. About one-fifth also reported cutting back on red meat.

A half-cup serving of black beans, pinto beans or chickpeas contains about 7 grams of protein—the plant world, says Barbara Davis, vice president of medical and scientific affairs for PLT Health Solutions Inc., a Morristown, N.J.-based food ingredients company.

That is still not as protein-dense as meat. A 3-ounce serving of chicken breast has 27 grams of protein, while a 3-ounce serving of lean ground beef has 22 grams.

With the growing number of salty snacks containing ingredients such as black beans and chickpeas, consumers might be tempted to munch more. But take note of serving sizes and ingredients, nutritionists say. A 1-ounce serving of Frito-Lay's Off the Eaten Path Olive oil & Herb hummus crisps contain slightly more sodium, at 230 milligrams, than a 1-ounce serving of Nacho Cheese Doritos, which contain 210 milligrams.

A spokeswoman for Frito-Lay says it is phasing out those hummus crisps. A reformulated version, with 170 grams of sodium, is now hitting stores.

"People need to read labels," Dr. Davis says. A 1-ounce serving of hummus crisps still contains 130 calories and 5 grams of fat. "If you eat three or four times the serving size, that's going to add up."

ILLUSTRATIONS BY SERGE BLOCH; SAFFRON ROAD

ART

PAINTING FOR THE SCREEN, AND THE CANVAS

TRANSMISSION FILMS

Geoffrey Rush plays artist Alberto Giacometti, right, and Armie Hammer is his friend James Lord in the film 'Final Portrait.'

BY CARYN JAMES

THROUGH MUCH of the film "Final Portrait," Geoffrey Rush as Alberto Giacometti is seen working on a portrait of his friend James Lord. But when the scenes focus on the brush strokes applied to the canvas, it is a real-life artist, Rohan Harris, doing the painting, as if he were a stunt double leaping into an action scene. It's no exaggeration when the movie's production designer refers to him as "Giacometti's hand."

"Final Portrait," opening on Friday, chronicles a few weeks in the Swiss artist's life, attempting to replicate his work and creative process as accurately as possible. Another portrayal of an artist, the 10-part biographical television series "Genius: Picasso," which begins airing on National Geographic on April 24, takes on a similar challenge with a different approach: digitally inserting actual Picassos into its scenes.

Both of them grapple with issues that plague films about artists, from licensing rights to whether a recreated portrait should look like the original or the actor playing its subject. In "Final Portrait," that would be Armie Hammer, who plays Lord.

Movies about painters have a mixed record when it comes to how their work appears on-screen. "Mr. Turner," the acclaimed 2014 J.M.W. Turner biopic directed by Mike Leigh, was made with the full cooperation of Tate Britain, known for its Turner collection.

The 1996 James Ivory film "Surviving Picasso," one of his rare critical and commercial failures, didn't receive approval to reproduce any of the late artist's work. Instead, the movie used existing paintings by Vernon Witham that resembled Picassos.

"I don't think that had much to do with whether you enjoyed the film or not," Mr. Ivory says. It's the director's responsibility "to make a film in which you don't

Please see PAINTING page A12

WHAT'S YOUR WORKOUT | By Jen Murphy

From 'Swim Mom' to Athlete

A Georgia woman who cheered on her daughter for years makes her own flip turn, becoming a dedicated competitor

MOST PARENTS coach their children in sports. But Faith Pescatore credits her daughter, Skylar Schambs, with helping fine-tune her flip turn and swim stroke ahead of the 2017 National Senior Games.

Ms. Pescatore, 61 years old, jokes that she went from being a dedicated "swim mom" to a dedicated swimmer. "Now, my daughter is the one cheering me on from the stands during a meet," she says.

A lifelong "fitness swimmer," Ms. Pescatore says she never had the opportunity to compete growing up. When her daughter, now 21, began swimming competitively at age 7, Ms. Pescatore watched enviously from the stands. "I went to every meet and every practice, and lived vicariously through her," she says. "I'd even steal her workouts."

Her daughter hung up her Speedo when she went off to college in 2014. But Ms. Pescatore, a retired physician assistant in Suwanee, Ga., a suburb of Atlanta, continued to borrow her daughter's high-school pool workouts. On a whim, she entered the Georgia Golden Olympics in October 2016. Despite not being able to do a flip turn, she placed second in the 55-59 age group in both the 50-yard and 500-yard freestyle competitions.

A lifelong 'fitness swimmer,' Faith Pescatore didn't compete until 2016. Now, the 61 year old is training for her second National Senior Games.

That finish earned her entry to the 2017 National Senior Games in Birmingham, Ala. The biennial event, formerly called the National Senior Olympic Games, hosts around 10,000 competitors in 20 sports, including swimming, track and field, and even pickleball. Participants must be at least 50, with the oldest athletes in their 100s.

Leading up to the Games, her daughter provided instruction on how to do a flip turn as well as pointers on more efficient stroke technique. Her time of 8 minutes and 22 seconds in the 500-yard freestyle was a personal best and earned her a seventh-place finish and spot on the podium in the 60-64 age category.

"My daughter specialized in the 500 free," she says. "She was my inspiration."

Ms. Schambs says it's been exciting to watch her mother get into competitive swimming. "She was very involved and supportive of my swimming, including jumping in for parent and family relays," she says. "It's awesome that I can cheer her on after all the guidance she gave me."

Encouraged by her performance, Ms. Pescatore joined a U.S. Masters swim team last October. Masters programs provide coached pool workouts to adults of all swimming abilities.

She is currently training for the 2019 Senior Games, which will take place June 14-25 in Albuquerque, N.M. In addition to freestyle, she plans to compete in the backstroke.

"I'd like to be on the podium in three events," she says. "At this age, I relish the competition. There's something so rewarding about winning a race."

The Workout

Ms. Pescatore attends Masters group swim sessions from noon to 1 p.m. on Tuesdays and Thursdays. She arrives early and warms up with 20 minutes of freestyle swimming and 10 minutes of backstroke and kickboard drills.

Ms. Pescatore says a lot of Masters programs focus on yardage, but hers focuses on technique. Coach Kai Akubo Smith videotapes pool sessions so they can deconstruct her stroke.

Drills frequently incorporate kickboards and fins. They also do core work, which Ms. Pescatore says is crucial to maintaining good technique. They might go to the deep end of the pool and kick their feet and legs to keep their heads above water, without using their arms for assistance.

Lately, Ms. Pescatore has been working on her start. "A fast start off the blocks is critical in short distances," she says.

She swims with a TYR snorkel. "It allows me to focus on my arms and legs without worrying about turning my head to breathe," she says.

Ms. Pescatore has practiced yoga for 15 years and attends vinyasa classes twice a week. "My yoga breathing helps keep me centered at meets," she says. "I get up on the blocks, take deep breaths, and visualize my race."

The Diet

Ms. Pescatore has been a vegetarian for nearly 15 years, but she does eat fish and eggs. She starts the day with coffee and a breakfast of oatmeal or granola with almond milk, blueberries and walnuts. Lunch is a veggie burger or grilled cheese.

She packs snacks like oranges, hummus or corn chips to eat on the drive home from swim practice. "After an hour and a half of swimming, I'm ravenous," she says.

She and her husband cook dinner at home. Grilled fish with roasted vegetables, pasta and vegetables, and Thai shrimp curry are staples. Caramel corn is her favorite evening snack.

The Gear & Cost

Ms. Pescatore pays $480 annually for unlimited swimming and Masters group workouts at West Gwinnett Park Aquatic Center in Norcross, Ga. Her Speedo swimsuits cost about $75 each. A TYR swim snorkel costs $35, while TYR fins are $30. She swims in TYR Velocity goggles ($15) and wears nose clips for backstroke. Athleta is her go-to yoga apparel brand, and her classes at Johns Creek Yoga studio are $16 each.

The Playlist

"I hear noise all day," Ms. Pescatore says. "When my head is in the water, I don't want to hear anything. I find the quiet very meditative."

Testing Your Medal at The Senior Games

Every two years, men and women ages 50 and older are invited to test their athleticism in 20 medal sports at the National Senior Games.

If you think you're too old to compete, here are some stats that might inspire you to start training again:

- A 2015 research study of 4,000 Senior Games athletes showed the average athlete had a "fitness age" 25 years younger than their actual age.
- South Dakota's John Zilverberg competed at the 2017 National Senior Games at the age of 104, making him the oldest competitor in the history of the Games. He took home gold medals in bowling, hammer throw, javelin and shot put, and a silver in the discus.

- At those same Games, 101-year-old Julia "Hurricane" Hawkins, of Louisiana, set a Senior Games record for women over 100 in the 100-meter dash, with a time of 39.62 seconds.
- Hollyce Kirkland, 98, of Tennessee, set world records in 2017 in the 95-99 age category. She finished the 400-meter dash in under 5 minutes (4:29:64), and the 800-meter dash in under 10 (9:30:46).
- At 90, Atlanta's John Taylor is the oldest person to compete in the National Senior Games triathlon.

FROM LEFT: MELISSA GOLDEN FOR THE WALL STREET JOURNAL (3); BRIT HUCKABAY

PAINTING

Continued from page A11

miss the works of art."

"Genius" and "Final Portrait" are more authentic, in part because the Picasso and Giacometti estates insisted on it. Written and directed by Stanley Tucci, "Final Portrait" is based on Lord's memoir "A Giacometti Portrait," which details sitting for the artist in Paris in 1964, right down to the eight or nine brushes he held in his left hand while painting with his right.

The Giacometti Foundation, which controls the artists' rights, "were on us like a dog with a bone," even after reading the screenplay and licensing images, says James Merifield, the film's production designer. He was responsible for re-creating the artist's cluttered studio and supervised the team that made works-in-progress to fill it.

"Large Head," a plaster cast of a man's head, "was scrutinized to the point of the nodules on the nostril," he says, with an expert from the foundation advising "a little bit more plaster there, a little bit less plaster there."

The filmmakers never set eyes on the actual "Portrait of James Lord," which sold at a 2015 Christies auction for more than $20 million. Yet Mr. Harris painted about 15 versions at various stages to be used on camera, as the insecure Giacometti redid it repeatedly, painting over the canvas each time. For reference, Mr. Harris relied on photographs, other Giacometti paintings and footage of the artist, who died in 1966, at work.

The authentic painting, composed of scrawled black and white lines, isn't especially realistic. But Mr. Harris was asked to make the ears a bit smaller for the film version.

DUSAN MARTINCEK/NATIONAL GEOGRAPHIC

Antonio Banderas as Pablo Picasso in National Geographic's television series 'Genius: Picasso,' which begins airing in April.

Compared with Mr. Hammer, "James Lord wasn't nearly so handsome and chiseled," Mr. Merifield says.

"Genius," which stars Antonio Banderas as Picasso, is full of reproductions. The Picasso Administration, which controls the artist's rights, reviewed scripts for accuracy before licensing the works.

The first episode, which begins with a middle-aged Picasso in 1937 and flashes back and forth in time, contains many of the Spanish artist's best-known paintings, including "Guernica" and "Portrait of Dora Maar." Ken Biller, an executive producer, director and writer on "Genius," says that in most cases green screens replaced the canvases while shooting.

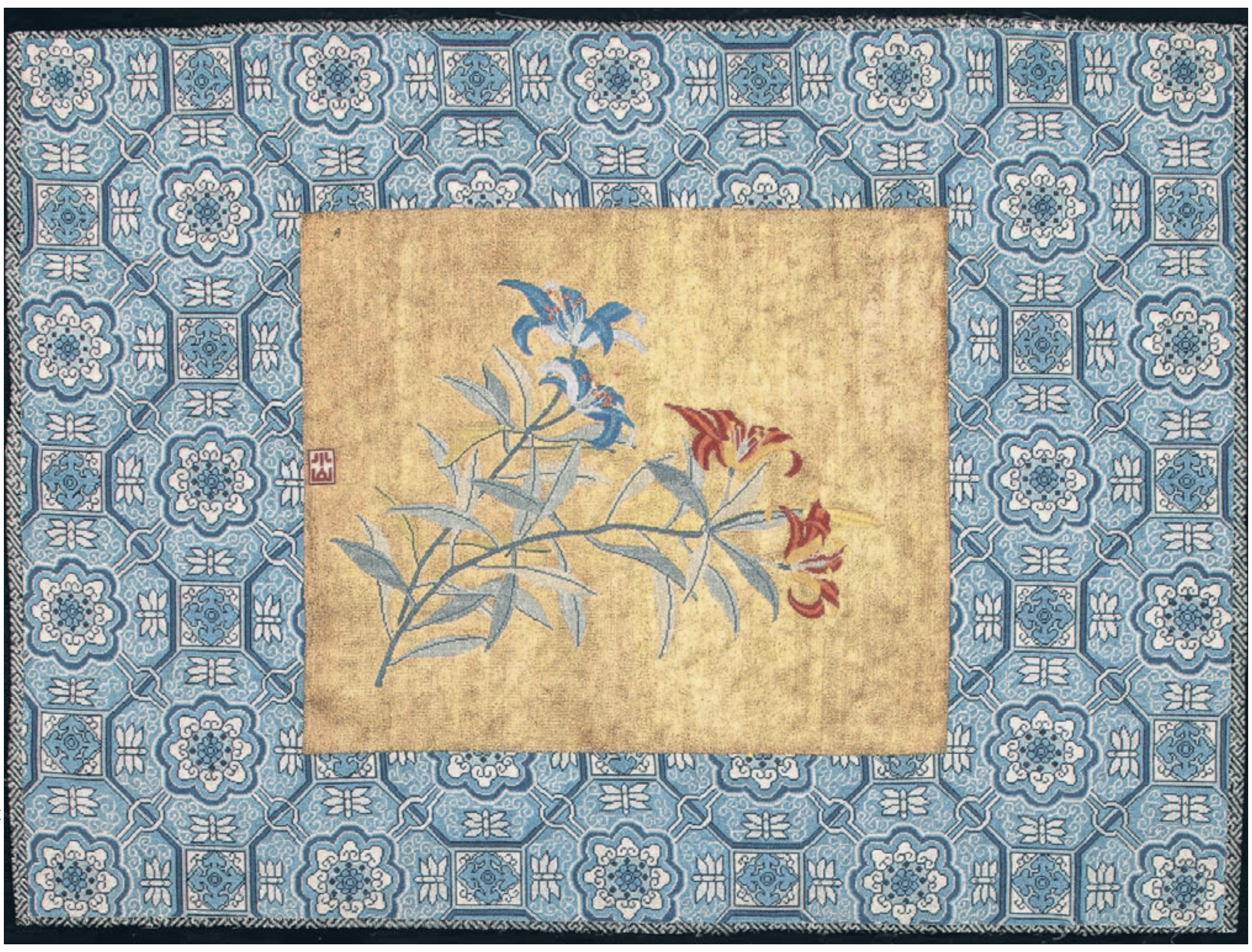
In postproduction, he says, "we put the best quality digital image that we could onto that canvas." In some scenes, digital prints were made of the actual paintings and placed on set.

Years ago, preparing for a never-realized Picasso movie, Mr. Banderas studied with an artist. "It was not so much to become a painter but to be very familiar with all the tools," he says. "There is not a lot of footage of Picasso. I tried to compose the way he walks, the way he related to others physically—which is very little. In a way I have to reinvent Picasso."

That approach suits "Genius," which aims to capture the imagination of the artist, who died in 1973. Depicting the creation of "Guernica," Picasso's monumental antiwar painting inspired by bombing during the Spanish Civil War, "we don't really see the painting evolving on the canvas, we see it evolving in his mind's eye," Mr. Biller says. The sequence is a montage, juxtaposing glimpses of Mr. Banderas holding a brush, small segments of the painting, bomb footage and film of a bull and a horse, images that made their way into "Guernica."

One element "Genius" and "Final Portrait" share: The artists' estates asked that all copies be destroyed after filming.

"I suppose I should take it as a compliment," Mr. Merifield says. "They feared our things were so good they could become black-market pieces."



NEWARK MUSEUM (5)

Clockwise from left, 'Red and Blue Lilies With Border,' China, Republic Period (1911-1949); Helmet and Armor, Korea (1905); 'Krishna and Gopis Dancing With Ganesh, Rats and Radishes,' India, late 19th/early 20th century; 'Wealth Boat With Cranes and Tortoise,' *fukusa*, Japan (1850-75)

ART REVIEW

The Very Fabric Of Asian Societies

BY LEE LAWRENCE

Newark

"DRAMATIC THREADS: Textiles of Asia" at the Newark Museum is not so much an exhibition as a roving spotlight, a clever way to refresh and recast the display of its permanent collection of Asian art. Katherine Anne Paul, the museum's curator for arts of Asia, does this by highlighting the medium in a number of ways.

In the Japanese gallery, for example, she has replaced ink paintings and *ukiyo-e* prints with seven *fukusa*, richly embroidered satin cloths people draped over gifts at celebrations. The effect is startling. Gold and colored silk threads shimmer against deep blues, their stitching forming complex scenes rife with symbols of protective deities. Some depicted bountiful harvests, from sprays of golden stalks, heavy with grain, to a giant radish with leaves fringed with autumn colors. Others, like a boat with dragon figurehead and wish-granting gems, bestowed wishes for a prosperous new year.

By contrast, in the Tibetan section, nothing looks different—until you spot the specialized labels drawing attention not to the altar filled with statuary, but to the canopy hanging above; not to the figures in a *tangka*, but to the Chinese brocade border believed to house the sacred image. Some borders emphasize this notion with a rectangular piece of silk at the base, considered a doorway.

Highlighting Asian textiles makes perfect sense for the Newark Museum. Its first purchase when it opened in 1909 consisted of some 3,000 mostly Japanese and Chinese pieces, including brocades and other fabrics. Its founding director, John Cotton Dana, was known for chafing against art-world elitism, preaching that "beauty has no relation to price, rarity or age." This helps explain the museum's remarkably large holding of some 4,000 Asian textiles, from the luxurious to the everyday.

While shows often stress how such easily transportable, highly traded commodities transmitted designs and technologies, what comes through most vividly here is the outsize social and cultural role cloth has played. Throughout the centuries, the elite have used it to affirm their status—the Korean gallery, for example, includes a lavish 1905 court costume made from red wool, as well as two 19th-century rank badges. Cranes denoted a civil official; twin leopards with bared fangs marked the wearer as military. In both, auspicious symbols abound. In a tricolor ball nestled between the felines, for example, the energies of heaven (blue), earth (red) and humanity (yellow) interlock in perfect balance.

Other fabrics generate a sense of reverence. Imagine the charming pattern of chain-stitched flowers on a South Asian cloth suspended above one of the devotional statues displayed nearby, invoking floral offerings to the god; or the embroidery of Lord Krishna dancing in a circle around Ganesh transforming a home shrine into a sacred space. Or, in a more secular vein, imagine the expectation an embroidered *fukusa* would spark, the recipient recognizing the difficulty of the stitches involved. For our part, we are helped by labels by Young Yang Chung, New York-based embroiderer and textile scholar.

For sheer virtuosity, one of the most eye-catching works is a rectangular panel from the first half of the 20th century displayed in a case of Chinese ceramics. Red and blue lilies bloom from a shared stem against a gold ground, framed by a blue and white border one might mistake for tiles with stylized lotus blossoms and butterflies. Yet everything is made of minute needlepoint stitches. More subtle but equally impressive, what looks like a painting on a hanging scroll is really a tapestry. Its split-weave technique dates back at least to the seventh century, perhaps imported to China from Europe or developed by Uighurs. We do know that by the 12th century weavers were using split-weave, or *kesi*, to imitate paintings as covers for scrolls. And by the Qing dynasty (1644-1911) when this was made, people prized such *kesi* as artworks in their own right.

Such exquisite workmanship, however, is but the final step in a process that includes everything from raising silkworms to dyeing threads. Little wonder, then, that people used textiles to pay taxes, trade for prized imports like horses, and make offerings to revered religious teachers. Look closely at the paintings in the substantial Tibetan section, and you will spot scenes depicting some of these transactions. Look closely, too, at the border of a Nepalese *tangka* painted in 1849. The "door" panel at the bottom, the dragon motif along the sides, even the corners where fragments of brocade appear stitched together, their patterns not quite matching up—all of it is *trompe l'oeil* painting. Just as in Europe faux marbling provided a cheaper alternative to stone, the painter here substituted pigments for brocade—eloquent testimony to the preciousness of textiles.

'Dramatic Threads: Textiles of Asia'
Newark Museum, through February 2019

Ms. Lawrence reviews Asian and Islamic art for the Journal.

'Paradise Flycatcher Couple on Flowering Branch With Rocks,' China, Qing Dynasty (1644-1911)

SPORTS

USOC Chairman Larry Probst

OLYMPICS

ATHLETES CALL FOR OVERHAUL

BY LOUISE RADNOFSKY

A GROUP OF OLYMPIANS are pushing for the ouster of U.S. Olympic Committee Chairman Larry Probst and an overhaul of his entire organization, citing its flat-footed response to sexual abuse and alleging broader litany of "dysfunction, neglect and out-of-whack priorities."

Alpine ski racer Bode Miller, judokas Kayla Harrison and Jimmy Pedro, rower Caroline Lind and shot putter August Wolf called for the change in a letter to the USOC viewed by The Wall Street Journal.

The letter describes the scandal surrounding USA Gymnastics' handling of sexual assault allegations against longtime team physician Larry Nassar, which U.S. Olympic Committee's then-chief executive officer was aware of in 2015, as "but the most egregious instance of the USOC's disregard for Olympic athletes."

The Olympians allege a series of additional missteps in the past decade, including in officials' handling of sexual misconduct by coaches in swimming and taekwondo, and physical and emotional abuse in speedskating. They say the alleged incidents suggest that the committee as a whole has been more interested in protecting its own reputation and that of coaches, rather than athletes.

"To repair the damage done to athletes and to reinstate trust in the organization, we call for senior executives and board members to offer their resignations en masse," the Olympians wrote.

A spokesman for the U.S. Olympic Committee, Patrick Sandusky, said that the committee's "top priority is to protect, support and empower every athlete in our community."

"Among the reforms being put in place, we are working to get an athlete fund operational, forming an advisory group, reviewing our governance structure, evaluating our safe sport procedures, doubling our funding of the U.S. Center for SafeSport and ensuring athletes have a stronger voice within the USOC," said Sandusky.

COLLEGE BASKETBALL | By Jason Gay

Why the Madness Is Delicious

A brilliant opening weekend underscores what makes the NCAA men's tournament a delightful feast

Remember when men's college basketball was doomed? Remember when the public had finally gotten fed up with all the corruption, skulduggery and FBI gumshoeing and decided to abandon the sport forever?

Remember that? Wasn't that like…six days ago?

Yeah, I don't remember it, either. The NCAA men's basketball tournament has roared into action and immediately overwhelmed all the cynicism and pearl-clutching about the future of the game.

College basketball is irredeemable? How could you say that, after watching the University of Maryland, Baltimore County stun the tournament's top seed, Virginia—the first time a No. 16 seed has beaten a No. 1?

How could you say it after Sunday night, when the Retrievers, newly anointed as America's Most Adorable Team, hit the court against Kansas State and…OK, so the game against Kansas State didn't go as well. Sigh.

How about this then: Nevada crawling back from a 22-point second half deficit to beat two seed Cincinnati. That was nutso.

With all of this insanity happening, how could anyone claim to be suffering from "March Sadness?" Explain your melancholy to the 98-year-old Loyola-Chicago superfan Sister Jean Dolores-Schmidt, who's headed to the Sweet 16 after back-to-back upsets by the Ramblers.

(I mean, I'm sure you're experiencing sadness if you're an Arizona fan. Or a North Carolina fan. Or a Cincinnati fan. Or a Virginia fan, even though Journal Sports Team wunderkind Andrew Beaton warned you that an upset could be coming, and is going to dine out on it the rest of his life.)

But how could you be conflicted about a sport that features the lustrous hair of Purdue's Matt Haarms? Or the stylish man-bun of Rob Gray?

I AM TRYING TO AVOID MENTIONING THAT MICHIGAN WON ON A LAST-SECOND BUZZER-BEATER, BECAUSE YOU GUYS KNOW HOW I FEEL ABOUT MICHIGAN—BUT I GUESS EVEN THAT WAS PRETTY OK, TOO. FINE, THERE, I SAID IT.

The point is this: If college basketball is dead, then long live college basketball.

I don't see any problem with holding the seemingly incongruous opinion that men's college basketball is a wreck—and that March Madness remains one of the most irresistible cocktails in sports.

Hypocrisy, Hypschmocrisy. Wiretap that, you FBI goody-goodies! Catch it if you can!

The Loyola-Chicago Ramblers celebrate after beating No. 3 seed Tennessee on Saturday to advance to the Sweet 16.

FROM LEFT: MARK REIS/ZUMA PRESS; GEORGE WALKER/ICON SMI/ZUMA PRESS

What makes this annual sports bash so great, of course, is that delightfully predictable unpredictability. You simply cannot rule anyone out. I am surely not the only one who looked over at his phone late Friday night to see a text telling me: TURN ON VIRGINIA-UMBC RIGHT NOW. And then going to the TV to turn on Virginia-UMBC.

Before the tournament, America barely knew what UMBC was. After the upset, the country was ransacking UMBC's souvenir store. It did not matter that half of the country *still* isn't sure what UMBC stands for. The Retrievers will always have that piece of history.

But I think my favorite part of the tournament is that it's do or die. Take your best-of-7 series and stuff it in the drawer. Find yourself a cold-blooded shooter like Loyola-Chicago's Clayton Custer, and you can turn the world upside down. Show up without your pants on, like UVA, and it's over.

The tournament craves a Cinderella, even if those Cinderellas mean the decimation of brackets.

Still, let's be real about brackets: you weren't winning anything. Was there any piece of data more clarifying than ESPN's announcement after UMBC's win that of the 17.3 million brackets submitted to the network, not a single one remained perfect. Not one!

(Meanwhile, I love the fact that Sister Jean reportedly has Loyola-Chicago getting bounced in the

> College basketball is a wreck—but March Madness remains an irresistible cocktail.

Sweet 16 of her bracket. Sister Jean may be a woman of faith, but it also seems she's a realist who makes clear-eyed decisions. Warren Buffett is probably going to hire Sister Jean this week.)

Look: I don't mean to suggest everything with college basketball is hunky dory because the tournament's fun. The sport is a mess, mainly because it believes it can run a multibillion-dollar business like it's some sort of amateur baking contest. The players should be paid, and the NCAA should be sent out to sea in a rowboat with no oars. But let's be real: A big part of the reason there's been little change is that March Madness is such a feast, it disguises the problems lurking below.

Meanwhile, I can't stand the incessant buttering up of the coaches—the media talks about half of these guys like they're Jonas Salk—and a lot of the games are sloppy. My eyes are considering a class-action lawsuit against the Sunday's Michigan State-Syracuse game, where the teams shot a combined 29.6% from the field.

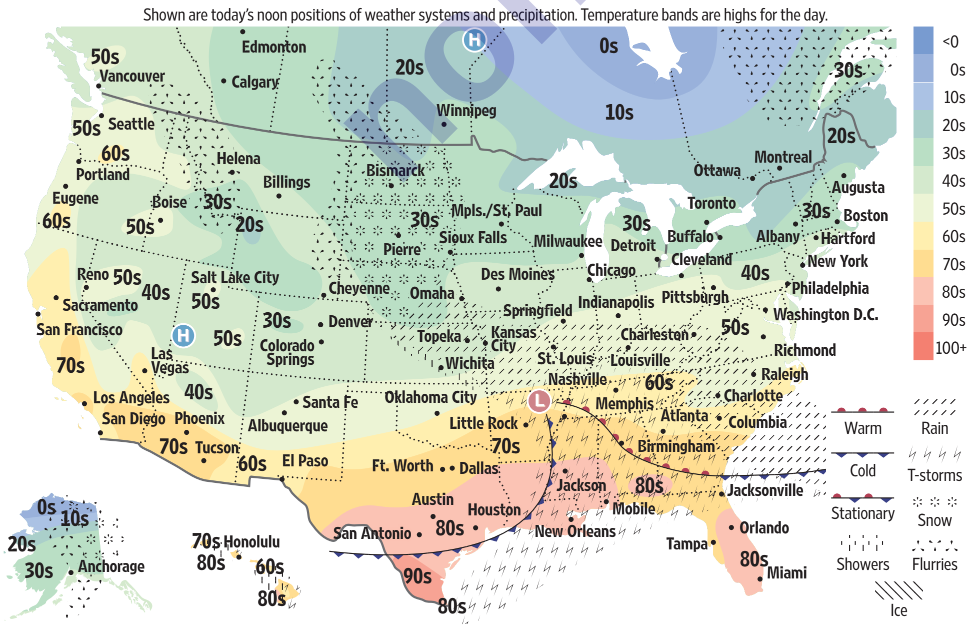
UMBC vs. Kansas State wasn't exactly a Golden State Warriors intrasquad, either. I still have a headache from all that rim-clanging. Oww. That's fine. March Madness isn't always pretty. Or anywhere near perfect.

But for now, it's the best show in sports. Until, you know, Thursday Night Football comes back.

Weather

AccuWeather DOWNLOAD OUR APP TODAY

Shown are today's noon positions of weather systems and precipitation. Temperature bands are highs for the day.



U.S. Forecasts

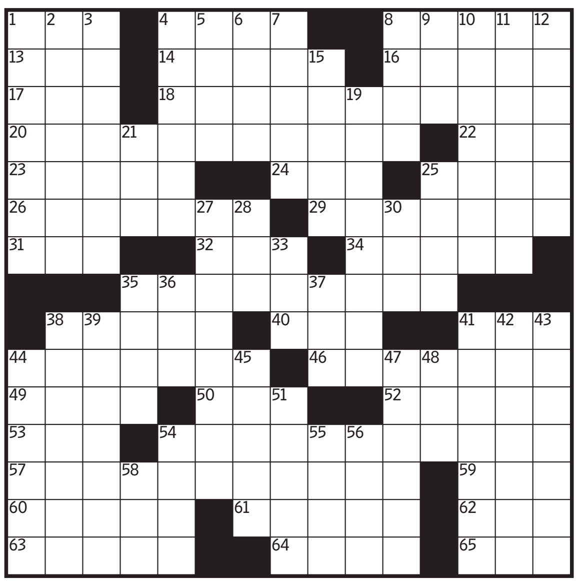
s...sunny; pc... partly cloudy; c...cloudy; sh...showers; t...t'storms; r...rain; sf...snow flurries; sn...snow; i...ice

City	Today Hi	Today Lo	Today W	Tomorrow Hi	Tomorrow Lo	Tomorrow W
Anchorage	40	23	pc	37	20	pc
Atlanta	69	53	t	69	42	pc
Austin	81	48	s	74	43	s
Baltimore	51	32	pc	41	28	sn
Boise	53	36	c	56	42	pc
Boston	37	21	s	37	25	pc
Burlington	25	11	s	30	11	s
Charlotte	57	49	r	62	39	c
Chicago	47	29	pc	40	30	pc
Cleveland	40	28	pc	37	26	pc
Dallas	77	47	s	69	45	s
Denver	45	24	c	52	27	pc
Detroit	42	24	pc	39	25	pc
Honolulu	79	68	c	80	70	pc
Houston	86	53	s	74	48	s
Indianapolis	55	28	r	43	26	c
Kansas City	46	34	r	50	30	c
Las Vegas	66	48	s	70	55	pc
Little Rock	77	46	sh	58	38	c
Los Angeles	71	53	s	67	57	c
Miami	87	71	pc	88	67	s
Milwaukee	41	27	pc	36	29	pc
Minneapolis	39	26	c	36	27	sn
Nashville	68	46	t	50	36	r
New Orleans	81	58	t	68	51	pc
New York City	44	31	s	40	30	c
Oklahoma City	55	36	pc	58	36	s
Omaha	44	34	r	47	29	sn
Orlando	86	67	pc	82	56	t
Philadelphia	50	32	pc	38	30	sn
Phoenix	73	51	s	80	57	s
Pittsburgh	53	31	pc	45	27	c
Portland, Maine	32	15	s	37	18	s
Portland, Ore.	58	37	pc	61	41	s
Sacramento	66	46	pc	58	51	r
St. Louis	52	33	r	47	31	c
Salt Lake City	52	35	c	57	42	pc
San Francisco	65	51	pc	58	53	r
Santa Fe	50	21	s	58	28	s
Seattle	55	38	pc	57	37	s
Sioux Falls	37	28	sn	39	27	sn
Wash., D.C.	55	37	pc	42	33	sn

International

City	Today Hi	Today Lo	Today W	Tomorrow Hi	Tomorrow Lo	Tomorrow W
Amsterdam	39	30	pc	46	32	s
Athens	66	53	sh	65	51	pc
Baghdad	81	54	pc	87	60	s
Bangkok	94	79	s	94	77	pc
Beijing	57	36	pc	50	27	pc
Berlin	39	23	s	41	23	sf
Brussels	37	25	s	46	27	pc
Buenos Aires	77	49	s	75	46	s
Dubai	80	66	s	83	67	s
Dublin	41	29	sf	45	33	pc
Edinburgh	41	28	c	46	33	pc
Frankfurt	37	22	s	43	24	sf
Geneva	45	31	c	41	28	pc
Havana	87	66	s	88	67	s
Hong Kong	78	65	sh	72	58	t
Istanbul	61	52	c	60	51	r
Jakarta	89	76	sh	91	76	sh
Jerusalem	79	56	s	73	51	s
Johannesburg	75	57	pc	77	59	t
London	40	34	pc	47	34	pc
Madrid	47	32	r	48	32	pc
Manila	93	77	s	94	77	c
Melbourne	78	58	pc	67	52	c
Mexico City	84	54	pc	83	53	pc
Milan	48	39	pc	52	35	c
Moscow	31	19	pc	33	19	pc
Mumbai	92	80	s	92	77	pc
Paris	38	27	c	46	30	pc
Rio de Janeiro	94	80	s	92	78	pc
Riyadh	84	65	s	91	68	s
Rome	55	42	t	56	40	r
San Juan	85	72	pc	86	74	pc
Seoul	54	34	c	48	34	c
Shanghai	52	43	r	50	42	r
Singapore	91	78	pc	91	78	s
Sydney	87	69	s	81	68	sh
Taipei City	84	67	pc	73	57	sh
Tokyo	63	46	c	48	43	r
Toronto	33	18	s	34	19	s
Vancouver	48	34	pc	48	38	c
Warsaw	33	17	c	37	22	sf
Zurich	36	25	c	38	25	pc

The WSJ Daily Crossword | Edited by Mike Shenk



COMING CLEAN | By Harold Jones

Across

1 That woman
4 Address for a baroness
8 "Don't Cry for Me Argentina" musical
13 Tie the knot
14 White heron
16 Spiked clubs
17 Pitcher's pride
18 They're clean
20 It's clean
22 Tool for pool
23 Wine grape
24 Possess
25 Make a right, say
26 Very last
29 Secondary wager
31 ___ Moines
32 Solo of the upcoming "Solo: A Star Wars Story"
34 Fronts of planes
35 It's clean
38 Choreographer Twyla
40 Baseball great Gehrig
41 Lab subj.
44 Three-horse Russian sleds
46 Letter after tau
49 Room on the Clue board
50 Possesses
52 Throat dangler
53 Cathedral city near Cambridge
54 It's clean
57 They're clean
59 "Norma ___"
60 Justice Kagan
61 French film star Anouk ___
62 Pilot's guess, for short
63 Sandy's love in "Grease"
64 Second to none
65 German article

Down

1 Overwhelmed with work
2 Jo March or Elizabeth Bennet
3 "Slipping Away" singer Dave
4 Given in a bequest
5 Taj Mahal city
6 Number after zwei
7 Like some simple questions
8 Dubai ruler
9 Mover's truck
10 Drink cooler
11 Terms of office
12 Give one's approval
15 Defrosts
19 Joining a queue
21 ___ de plume
25 Final, for one
27 Crow's-nest cry
28 Black goo
30 Cry from Homer Simpson
33 Org. for Titans and Texans
35 Be unsuccessful
36 Genesis vessel
37 Marker
38 Refrain syllables
39 Saintly sorts
41 Sounded drunk
42 Crest competitor
43 Twelve months hence
44 Interest rate determiner, informally
45 Tortilla chip topper
47 Twilight preceder
48 "So ___ been told"
51 Indian honorific
54 Do in, as a dragon
55 Colosseum site
56 Rams' mates
58 Bed-and-breakfast

▶ Solve this puzzle online and discuss it at **WSJ.com/Puzzles.**

Previous Puzzle's Solution

The contest answer is ARGO. Four three-by-three ENVELOPEs can be found in the grid, their top edges in Across answers CONVEYS, APOLOGY, BEEP and DEPOSIT. The letters sealed in those four envelopes, from top to bottom, spell the contest answer.

OPINION

Trump's Losing Trade Gambit

AMERICAS
By Mary Anastasia O'Grady

President Trump's practice of staking out extreme positions on trade as a negotiating tactic is a sign of his brilliance. Or so we're told. But that theory took on water last week, when Mr. Trump had to backtrack on a promise to hit Mexico and Canada with a 25% tariff on steel and a 10% tariff on aluminum, without any concessions from either Mexico City or Ottawa.

To understand the change of heart, take the list of products slated for a new Trump tariff on steel and total the value of those same products exported by U.S. producers. You will find that more than 75% of it goes to Mexico and Canada. Mexico and Canada buy 42% of the U.S. aluminum exports of products that would be subject to the new tariff. The U.S. has trade surpluses in steel and aluminum with both countries.

After the fact, Mr. "Art of the Deal" figured out that his opening tariff bid was on track to blow up the two best foreign markets for American-made steel and significant markets for American-made aluminum. It's a good bet that the same producers who are lobbying for protection asked the president to back off the neighbors.

The gaffe exposes the Trump administration's failure to grasp the complexity of the supply chains that interconnect the global economy. A few exemptions won't clean up the mess he has created with his tariff gambit. The new duties will clobber American fabricators, which rely on these imports to manufacture at competitive prices. Retaliation by injured trading partners will hurt U.S. exporters.

After giving Mexico, Canada and possibly Australia a pass, the administration said it reserves the right to set even higher new tariff rates on steel and aluminum coming from the rest of the world. Brazil is in the line of fire. It's the second-largest supplier of steel to the U.S., according to the January Commerce Department report that the administration wrote to justify the import protection. China, by the way, is No. 11.

Don't expect Brasília to stand down. In a meeting of the World Economic Forum in São Paulo Wednesday, President Michel Temer said his administration will gladly engage in a dialogue with the U.S. But if no satisfactory solution is found, he pledged to take the case to the World Trade Organization along with other countries harmed by the tariffs. "The combination of countries will give more strength to the representation," he predicted.

Should petitioners to the WTO prevail, they will gain the right to retaliate with tariffs of their own. Things could get ugly fast with a "combination" retaliation such as Mr. Temer suggested. A March 5 study by the Trade Partnership, a Washington-based consultancy, estimated that without any retaliation, the U.S. will lose five jobs in the broader economy for every job it creates in steel and aluminum.

Last week Trade Partnership economists Joseph Francois and Laura Baughman updated their study by assuming

> **The president had to back off new tariffs on Mexico and Canada, with no concessions.**

exemptions for Canada, Mexico and Australia and factoring in likely retaliation by countries that have to pay the tariffs. They found that the U.S. would lose 18 jobs for every job created in steel and aluminum, for a net loss of nearly 470,000 "High-skilled jobs (managers, professionals, technicians and related workers) account for 31 percent of the net job losses," their study says. More than two-thirds of the lost jobs would be in production and low-skilled labor.

California, New York and Texas would lose the most jobs. But there would be "large net employment losses in the states in which the steel and aluminum sector figures prominently: Illinois (-17,950), Indiana (-7,282), Michigan (-14,021), Ohio (-15,718), Pennsylvania (-16,535) and Wisconsin (-8,964)," the study said.

Commerce Secretary Wilbur Ross told a Senate committee last week that the administration will have to see "what kinds of retaliation people might have in mind and whether or not they have the authority to do it." In other words, it's a game of chicken.

Even if Brasília does not retaliate, the American coal industry could lose big in Brazil. According to the U.S. Energy Information Administration, Brazil was the second largest export market for American coal in 2016. Brazil uses coal to make steel; less steel production means less coal consumption.

Brazil could also buy its coal elsewhere. In the Western Hemisphere, Canada and Colombia are large suppliers. Australia, China and Russia would undoubtedly welcome a new export market like Brazil.

The 21st century's economic winners will deepen international commercial relationships, a fact that even traditionally closed Brazil recognizes. A recent paper published by the Temer government calls for broad trade liberalization as a development tool.

By increasing tariff protection, threatening to withdraw from the North American Free Trade Agreement, and dropping out of the Trans-Pacific Partnership last year, Mr. Trump is pulling the U.S. back from global engagement.

Or he's a genius with the best head fake in human history.

Write to O'Grady@wsj.com.

AT&T's 'South Park' Argument

INSIDE VIEW
By Andy Kessler

The biggest antitrust trial since *U.S. v. Microsoft* begins Monday in a federal court in Washington. The Justice Department seeks to block the $108 billion merger between AT&T and Time Warner. But the government doesn't stand a chance—like Wile E. Coyote chasing Road Runner off a cliff and ending up suspended in midair.

What may have started as a Trumpian jab at #FakeNews-CNN has tragically turned into a serious antitrust action. The Justice Department's case stands on such modern foundations as Section 7 of the Clayton Antitrust Act of 1914, which can block mergers whose effect "may be substantially to lessen competition."

The crux of the case is that AT&T's subsidiary DirecTV, with its 21 million U.S. subscribers (about a fifth of the cable and satellite market), should not be combined with Time Warner's HBO, with its 54 million U.S. subscribers. The result would be a "vertically integrated programmer" with the alleged ability to raise prices at will on other cable operators. It could even (horrors) withhold HBO's "Game of Thrones" from DirecTV's competitors.

I've got to admit, even four or five years ago, I might have agreed. The cable industry has abused geographic monopolies to raise prices almost since the first coaxial cables were strung on telephone poles. Comcast's 2011 merger with NBCUniversal was potentially anticompetitive, which is why the government imposed 150 different conditions on it. But the landscape has changed since then. A lot.

If I were AT&T's attorney, I'd introduce as evidence a clip from the "Franchise Prequel" episode of "South Park," which makes fun of Netflix for funding so many new TV series. A Netflix employee answers the phone saying: "Netflix, you're greenlit. Who am I speaking with? . . . Would you like a pilot or just go straight to an order of six episodes?"

Since "House of Cards" took off in 2013, Netflix has run amok, releasing an estimated 126 original series and films in 2016, and maybe 200 last year. That's something on the order of 1,000 hours, or 40 full days, of binge watching. Some of these efforts are great, some are good, and most are just filler, like "Bill Nye Saves the World." But so what? The point is they are distributed on the internet, via cable modems or mobile phones. AT&T and Time Warner have little influence, and nobody—from ABC to HBO—has a lock on entertainment these days.

Netflix has 55 million American subscribers and, gulp, raised its prices in November. Netflix doesn't license its shows to anyone else in the U.S.! Should the government break it up? By the way, that "South Park" episode is available on Viacom's Comedy Central, though Hulu's 17 million subscribers can also watch it online.

Amazon Prime has something like 80 million subscribers in the U.S., and 26 million of them watch the company's

> **While cartoons mock Netflix as a content spigot, a Time Warner merger is no threat.**

original content. Google's YouTube is now offering streaming TV, basically a $40-a-month substitute for cable. Similarly, Hulu has Live TV and Sony has PlayStation Vue. All March Madness games can be streamed online. Consumers have choices.

And we're just getting started. Worried about cord-cutting, Disney has paid $2.5 billion for a 75% stake in BAMTech, Major League Baseball's streaming company. RBC analyst Steven Cahall suggests Disney could spend $15 billion a year on streaming shows. That partially explains why Mickey Mouse is chasing 21st Century Fox.

Or look at the raw figures. Programming is a $90-billion-a-year business. Both Fox and Time Warner spend around $8 billion on nonsports content. Netflix spent $6 billion last year and hopes to hit $8 billion in 2018. Amazon spends $5 billion. Where is the market dominance?

Apple has sold more than a billion iPhones and is spending $1 billion this year getting its feet wet with original programming. The company recently put up millions for two seasons of a show about, ugh, a TV morning show, produced and starring Reese Witherspoon and Jennifer Aniston. If anything, extreme competition has shifted the balance of power to actors—or, as some in Silicon Valley call them, meat puppets.

The AT&T antitrust case smells quite similar to the arguments for net neutrality, which also ignore real competition and emerging technologies. The feds are chasing ghosts. As they should be well aware, vertically structured companies tend to fall ill or die from natural causes—see General Motors, IBM and, well, AT&T. No one pays 25 cents a minute for long-distance calls anymore.

Still, I'm not sure why AT&T needs to get in bed with Hollywood, which year after year degrades the meaning of "Best Picture." AT&T should instead return to a focus on technical excellence. I'd rather that it run fiber on every highway and byway in America than peddle mediocre sitcoms.

Drones Can Protect Us From Kim's Missiles

By Arthur Herman And Stephen C. Meyer

President Trump's announcement that he will meet with North Korean dictator Kim Jong Un caught everyone by surprise. The big question is: Will the meeting reduce the threat of North Korean ballistic missiles?

Given North Korea's record of deceit, the president will need an insurance policy against Mr. Kim's penchant for bad-faith negotiating, especially concerning his nuclear program.

Fortunately, Congress can make a down payment this week in its 2018 omnibus spending bill, and soon after when it authorizes the Pentagon's 2019 budget. Lawmakers should appropriate funds for an innovative but inexpensive missile-defense system that can neutralize North Korean missiles using high-altitude drones.

The concept behind the proposed system is simple. It would deploy remotely piloted drones to target missiles early in flight while the missile booster engines are firing. During this early "boost phase," the intense heat of the boosters makes missiles easier to detect.

Our existing ground-based missile-defense systems are designed to intercept intercontinental ballistic missiles during the later phases of flight.

> **But Congress has to act by this Friday's budget deadline.**

But missiles become harder to detect and destroy during later phases because they are colder, smaller, faster and capable of evasive countermeasures. Thus adding another layer of defense makes obvious sense.

The Pentagon's Missile Defense Agency recognizes the need for boost-phase intercept capability and is developing a laser-based system. But the agency acknowledges it won't be ready to implement until 2023 at the earliest. A drone-based boost-phase system can be developed within 18 months—soon enough to make a difference in the current standoff with North Korea.

Here's how the new system would work: Drones would circle above the Sea of Japan at roughly 45,000 feet for shifts of up to 20 hours. Detection systems the Air Force already uses on surveillance drones would pick up North Korean missiles soon after launch. Once operators identify a missile on a dangerous course, new high-speed missile interceptors launched from the drones would destroy the ICBMs during the boost phase—ensuring that any debris would fall onto or near North Korean territory.

Though Congress has authorized developing a "boost-phase defense" for the Pacific region "at the earliest practicable date," it has yet to appropriate funds for a drone-based system. Lawmakers should close this gap without delay by specifically appropriating discretionary funds from the 2018 supplemental appropriation for missile defense to build such a system. To prevent delays, Congress should also extend that funding with another specific appropriation for 2019. The new system would cost only $100 million to develop—about 1% of the Missile Defense Agency's annual budget.

Coincidentally, the March 23 budget deadline marks the 35th anniversary of President Reagan's Strategic Defense Initiative speech. Congress can take an important step toward realizing Reagan's dream by funding a new layer of missile defense—one tailored to protect our cities from Kim Jong Un's increasingly menacing ballistic missiles.

Mr. Herman is a senior fellow at the Hudson Institute. Mr. Meyer is a senior fellow at the Discovery Institute.

BOOKSHELF | By Andrew Scull

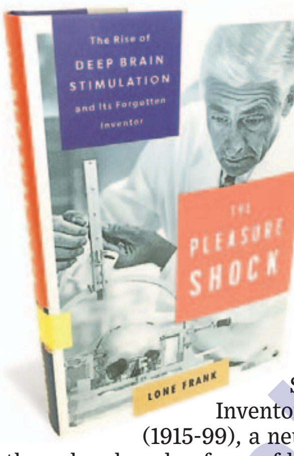
This Is Your Brain On Batteries

The Pleasure Shock

By Lone Frank
(Dutton, 305 pages, $28)

For much of the 20th century, those suffering from major mental illnesses were locked up in institutions that deliberately isolated them from society. Their pain and suffering were immense. As wards of the state, they were an enormous burden on the public purse.

The pressures on psychiatrists to do something about mental conditions they understood poorly, if at all, were thus correspondingly great, and the restraints on some professionals' zeal for therapeutic experimentation largely absent. Hence the host of desperate remedies aimed at these illnesses. There were programs to induce fevers by infecting patients with malaria, or to induce meningitis by injecting horse serum into their spinal canals; there was the surgical removal of teeth and tonsils, followed by the evisceration of stomachs, spleens, cervixes and colons; there was the induction of artificial epileptic seizures, first with drugs, then with electricity passed through the brain; and, most dramatically, there was the severing of brain tissue, either through surgical operations on the frontal lobes or by thrusting an ice pick through the eye socket—so-called transorbital lobotomies.



Lone Frank's "The Pleasure Shock: The Rise of Deep Brain Stimulation and Its Forgotten Inventor" focuses on Robert G. Heath (1915-99), a neurosurgeon who first studied, then abandoned, a form of lobotomy known as a topectomy, which extracted cubes of tissue from the frontal lobes. Instead, Heath pursued the novel idea that electric currents sent from a battery inserted in a patient's chest to electrodes implanted in the brain could be used to modify the patient's brain activity. Trained in both neurology and psychiatry, Heath left a promising career at Columbia University for the delights of Louisiana at the end of the 1940s, before topectomies proved disastrously ineffective. His position at Tulane University gave him unfettered access to patients at one of the country's most backward state hospitals and to inmates at one of the nation's most notoriously harsh penitentiaries—subjects on which he could test his new ideas.

Ms. Frank, a science writer whose previous book was "The Neurotourist: Postcards From the Edge of Brain Science" (2011), considers Heath a misunderstood and tragically neglected genius, the unacknowledged pioneer who invented techniques of deep-brain stimulation that now (at least on the author's account) promise to bring effective therapeutic interventions to a host of psychiatric conditions: anorexia, autism, depression, obsessive-compulsive disorder, PTSD, schizophrenia, Tourette syndrome, even alcoholism, heroin addiction and gluttony. (Heath also tried it as a remedy for homosexuality.) Ms. Frank suggests that brain pacemakers, as she calls these devices, are based on the most advanced findings of modern neuroscience and could potentially usher in a new era in which emotions and cognition can be massaged and manipulated to create blissful mental outcomes.

> **The book's author credulously believes that 'brain pacemakers' could jolt us into becoming happy, sober and thin.**

To Ms. Frank, Heath was "dapper," "charming," "tough as nails," "bubbling with ideas," "a gifted, curious scientist"—anything but the monster some of his contemporaries believed him to be. Ethical objections to his cavalier experiments or concerns about the purely speculative basis of his dangerous interventions, Ms. Frank seems to think, can safely be set aside. His "*project itself* was not objectionable, and his line of investigation has reappeared, riding a wave of great enthusiasm." (Ms. Frank's emphasis.) She suggests that one of Heath's wilder claims—to have discovered a protein in the blood of schizophrenics that interfered with the transfer of information in certain brain cells—might represent "something real." This, even though she acknowledges that the "biochemist" Heath had hired to perform the underlying "science" turned out to be a fraud bereft of scientific training, and a mobster besides.

"The Pleasure Shock" weaves back and forth between the quarter-century of Heath's uncontrolled experiments at Tulane and a breathless account of 21st-century experiments with deep-brain stimulation. The Defense Advanced Research Projects Agency, she tells us, is investing $70 million in deep-brain stimulation, paralleling the CIA's earlier involvement in Heath's work. Harvard psychiatrists funded by Darpa boast of working on "a little computer that could be integrated into the human brain and connected directly to nerve tissue in order to keep the organ on the path of the straight and narrow." No footnotes interrupt her cliché-ridden prose, and extraordinary claims are retailed with no attempt to assess the evidence on which they presumably rest.

Ms. Frank occasionally acknowledges that modern deep-brain stimulation has its critics. A neurosurgeon at University College London says that "history is repeating itself. The only difference from [Heath's work] and now is that the tools are more sophisticated. Otherwise, it is the same conduct as before." An ethicist at the University of Tasmania condemns the "thoroughly uncritical" coverage of deep-brain stimulation by science journalists—he might have had Ms. Frank in mind—and tells her that "it is disturbingly reminiscent of the original coverage of lobotomies." In passing, the author mentions that the two major controlled studies to date on deep-brain stimulation have failed to show that it produces better results than a placebo. One of the trials had such discouraging results that it was aborted midstream.

But soon Ms. Frank is back in her speculative science-fiction world. Brain pacemakers to adjust emotions and cognition are, she believes, the wave of the future: "I think it is likely that stimulation will develop from an experimental to a routine treatment. Not just because the techniques and the tools *are* better than before [Ms. Frank's emphasis], but because the spirit of the times is completely different." Credulity is a wonderful thing.

Mr. Scull is the author of "Madness in Civilization: A Cultural History of Insanity, From the Bible to Freud, From the Madhouse to Modern Medicine."

OPINION

REVIEW & OUTLOOK

The McCabe March Madness

For a microcosm of the current madness of American politics, look no further than the weekend meltdown after Attorney General Jeff Sessions fired former FBI deputy director Andrew McCabe late Friday.

Mr. Sessions acted on a recommendation by the FBI's own Office of Professional Responsibility, but Democrats and the media ignored that and called the firing part of Donald Trump's plot to undermine the FBI and steal American democracy. Mr. Trump then seemingly tried to confirm the accusations with a Twitter fusillade hailing Mr. McCabe's firing and escalating without cause to attack special counsel Robert Mueller. Which triggered another round of claims that Mr. Trump's days in office are numbered, or should be.

As Mr. Trump and his antagonists drive each other insane, it's hard to keep your eye on what matters. Start with the obligation of FBI agents to tell the truth. Mr. Sessions's statement was a straightforward explanation that he fired Mr. McCabe for a serious violation of duty.

The Justice Department's Inspector General has been examining the department's handling of the investigation of Hillary Clinton's private email server—a probe demanded by Democrats on grounds that former FBI Director James Comey's 2016 intervention cost her the election. The IG uncovered "allegations of misconduct" by Mr. McCabe, Mr. Sessions's statement said, which it forwarded to the FBI's Office of Professional Responsibility (OPR) that is composed of career officials.

Mr. Sessions added that both the IG and OPR reports "concluded that Mr. McCabe had made an unauthorized disclosure to the news media and lacked candor—including under oath—on multiple conclusions. The FBI expects every employee to adhere to the highest standards of honesty, integrity, and accountability. As the OPR proposal stated, 'all FBI employees know that lacking candor under oath results in dismissal and that our integrity is our brand.'"

Ergo, Mr. McCabe had to be fired.

The IG's report remains secret, and we hope it will become public shortly. But if Mr. Sessions's summary is accurate, failing to fire Mr. McCabe would have been a terrible signal to the bureau's agents.

Every agent at some point or another in a career is likely to testify in court. If a deputy director can get away with fudging answers, then every agent will assume he can too. The reference to "under oath" is also significant, since the FBI often charges people with the felony of making false statements without being under oath. The IG and OPR must have felt Mr. McCabe's lack of candor was serious enough to warrant making him swear to tell the truth.

Trump can never let the facts speak for themselves.

In response to his firing, Mr. McCabe said that "I answered questions truthfully and as accurately as I could amidst the chaos that surrounded me. And when I thought my answers were misunderstood, I contacted investigators to correct them." He added that "to be accused of lacking candor when at worst I was distracted in the midst of chaotic events, is incredibly disappointing and unfair."

The rest of his statement was devoted to blaming the OPR recommendation on Mr. Trump "and this Administration's ongoing war on the FBI and the efforts of the Special Counsel investigation." But Mr. McCabe knows that OPR lawyers aren't Trump partisans and its director was appointed by Mr. Mueller when he was running the FBI in 2004.

* * *

All of which should have been cause for Mr. Trump to let the dismissal speak for itself, but the President is too self-involved for such restraint. Instead he tweeted on Saturday, "Andrew McCabe FIRED, a great day for the hard working men and women of the FBI - A great day for Democracy."

He later blasted Mr. Comey, among others. And, for bad measure, his lawyer John Dowd suggested that Deputy Attorney General Rod Rosenstein should stop Mr. Mueller's probe. Mr. Trump then attacked Mr. Mueller for hiring Democratic prosecutors.

Naturally, Mr. McCabe and his partisans let it be known that he had shared with Mr. Mueller memos that he had written after his meetings with Mr. Trump. Oh, and John Brennan, Barack Obama's CIA director, tweeted in response to Mr. Trump's tweet that, "When the full extent of your venality, moral turpitude, and political corruption becomes known, you will take your rightful place as a disgraced demagogue in the dustbin of history."

Our politics really is debased when a former intelligence chief intimates that a President will be destroyed based on some information yet to be disclosed. Would he mind sharing what he knows on the record rather than leaking it to his press-corps pals? We've never believed in conspiracies about the "deep state," but the not-so-subtle threats from Messrs. Brennan, Comey and McCabe will persuade many Trump voters that they and others are out to destroy the President no matter the truth.

The country should be waiting for the facts of the multiple investigations to come out and then make a political judgment. Instead the brawl over the 2016 election has become a blood feud in which the facts seem irrelevant. This is going to get a lot uglier before it's over.

Putin's Next Six Years

Well, that was a nail-biter. Vladimir Putin won another six-year term as Russian President on Sunday, rolling up a mere 73.9% of the vote, according to a state-run exit poll before the votes were counted.

The exit pollsters had better hire food tasters in case the Kremlin strongman is unhappy with those estimates, including an expert in the Novichok nerve agent that is currently popular with Russian security. But then Mr. Putin did outperform the 63.6% he won in 2012. A good authoritarian these days has to maintain a modicum of democratic pretense, so he can't roll up Saddam Hussein-size victories. But a thoroughly modern strongman must also look like he's still the people's favorite.

Mr. Putin made sure of the latter by eliminating any serious competitor. He removed his most credible opponent, Alexei Navalny, by arresting him multiple times, and the Central Election Commission that the Kremlin controls barred him from the ballot. Mr. Navalny urged his supporters to boycott the election, but it will be news if Mr. Putin didn't managed to guarantee a healthy turnout.

The very model of a modern authoritarian election.

The candidates who did run lacked any serious financial backing, or for that matter any reasonable access to the media. The Kremlin long ago took over all broadcast media, which portray Mr. Putin as a defender of a beleaguered Mother Russia standing up against a malignant United States.

Mr. Putin has already ruled Russia for 18 years, and over time he has escalated his aggression abroad to support his nationalism at home. The Kremlin's latest chemical attack in Britain, against former double agent Sergei Skripal, is a warning that he may intend to escalate again as he sees a Europe with weak leaders in Germany and the United Kingdom. The Baltics and Balkans are two likely targets of mischief, and the West will have to be on alert.

As for the U.S., the Trump Administration has been stronger than the Obama Administration in standing up to him—for example, by sending lethal weapons to Ukraine. But Mr. Putin is still hoping he can manipulate Donald Trump into some kind of accommodation to the Kremlin's regional dominance. Mr. Trump shouldn't fall for it.

Tom Perez's Fiduciary Flop

The Obama Administration sold its fiduciary rule to the public as protecting retirees. This was never true, but now we learn it also was illegal, as the Fifth Circuit Court of Appeals explained last week in a tart decision striking down the rule.

The Dodd-Frank Act directs the Securities and Exchange Commission to promulgate standards of conduct for broker-dealers and investment advisers who render "personalized investment advice about securities to a retail customer." The law also prohibits the SEC from banning commissions.

The Labor Department under Tom Perez usurped the SEC and wrote a rule that ignored that prohibition. Mr. Perez essentially rewrote the 1974 Employee Retirement Income Security Act (Erisa), which regulates employer- and union-sponsored plans differently from individual retirement accounts. For instance, individuals are allowed to sue fiduciaries of employer and union plans for charging a commission. Labor applied the more rigorous protections for employer and union plans to IRAs.

Mr. Perez also extended Erisa's definition of "investment advice fiduciaries," who provide advice "on a regular basis," to broker-dealers and financial-insurance agents who merely sell a product. "Transforming sales pitches into the recommendations of a trusted adviser mixes apples and oranges," Judge Edith Jones wrote for the 2-1 majority.

An appeals court rules that another Obama regulation is illegal.

This created a Catch-22. "Thousands of brokers and insurance agents who deal with IRA investors must either forgo commission based transactions and move to fees for account management or accept the burdensome regulations and heightened lawsuit exposure required by the [best interest contract exemption] contract provisions," Judge Jones explained.

The effect is to raise costs for small savers, many of whom will have to turn to robo-advice. Several firms including MetLife, AIG and Merrill Lynch have already withdrawn from segments of the brokerage and retirement market.

The Trump Labor Department has said it won't enforce the rule and is working with the SEC on a new one that applies to all brokerage firms and investment advisers. The Fifth Circuit ruling will make this task easier. This is good news for retirement investors and the rule of law.

LETTERS TO THE EDITOR

Proposed Tech Export Bill Goes Way Too Far

Regarding Rep. Robert Pittenger's "How China Pushes the Limits on Military Technology Transfer" (WSJ.com op-ed, March 14): Few Americans would argue against measures to make this country more secure, and most would agree that protecting national security requires the proper tools. Still, many more would agree that being factual when discussing this topic is absolutely critical.

Legislation recently introduced in Congress and advocated in these pages by Rep. Robert Pittenger would make some needed improvements to the Committee on Foreign Investment in the U.S. (Cfius). For example, the measure would expand the ability of the government to block the purchase of buildings or other real estate near military installations.

But Mr. Pittenger's bill—the Foreign Investment Risk Review Modernization Act—goes much, much farther. It would drastically expand the mission of Cfius, an interagency committee staffed by fewer than a dozen people at the Treasury Department, bringing under government review countless international sales and licensing transactions by U.S. companies.

The new remit of Cfius would include such things as standard computer service and support contracts, technology manuals needed to operate machinery purchased by foreign customers and even the licensing of trademarks. Technologies that never were deemed sensitive by the Defense Department or that were long ago removed from control by the U.S. and its allies would be subject to new and opaque regulation by Cfius.

More concerning is that Mr. Pittenger's bill would do all of this unilaterally—without any effort at cooperation with our allies. The U.S. does not have a monopoly on innovative technologies. Congress can impose all the restrictions it wants on U.S. businesses. But, if America does not work with allies to enact similar controls, we will fail to protect both national security and our economic competitiveness.

In making his case to expand Cfius, Rep. Pittenger has misrepresented the facts. He cites examples of technology sold overseas by IBM and other companies that the U.S. government itself long ago ruled were nonsensitive and able to be freely sold around the world without a government license. In fact, everything IBM has done globally complies with U.S. and foreign export-control laws. For instance, sharing widely published, open-source software, or technology to assemble computer servers that are years behind state of the art, isn't threatening and therefore not legally controlled for export. But assisting with China's high-performance computing project is rightly prohibited by U.S. law, and the assertion that IBM has done so is flatly untrue.

Instead of putting thousands of nonsensitive transactions under review by a small committee that has neither the staff nor the experience to handle them, the better approach would be to update the export-control system we already have. A bipartisan bill introduced by Reps. Ed Royce and Eliot Engel, leaders of the House Foreign Affairs Committee, would modernize export controls to deal with emerging challenges.

Congress could also require that technology controls be kept up-to-date. The Departments of Commerce and State—which are today responsible for administering controls on dual-use and military technologies—have between them 500 experts, a transparent process of licensing and deep technical knowledge. But the Militarily Critical Technologies List, mandated by Congress as the baseline for what to control, hasn't been updated by the Defense Department since 2011.

As recent history has shown, controlling sensitive technology works best when done internationally, with a sharp focus on those technologies that are the most critical. Casting too broad a net on routine business risks losing focus on the real threats. Creating a new bureaucracy, instead of modernizing the one we already have, would be misguided.

Rep. Pittenger should get his facts straight. And Congress should act, both to improve Cfius and to update export controls, but it should use the proper tools for the proper job.

Christopher Padilla
IBM
Washington

Mr. Padilla is vice president for government and regulatory affairs at IBM. He was assistant secretary of commerce responsible for export controls from 2006-2007.

Court-Ordered Rehab Is Costly, Ineffective

"Rehab Costs Add to Anguish of Addiction" (page one, March 9) makes very clear the high cost of rehab and abysmal results that can be expected.

By now it is clear, to anyone who wishes to understand the science, that addiction is a chronic disease of the brain, the same way diabetes is a chronic disease of the endocrine system. In treating diabetes, we employ an arsenal of medications to help patients control blood sugar. Not using these when called for would be unthinkable, so when it comes to the chronic brain disease of opioid addiction, why would we withhold proven medications and expect an addict to stay "clean"?

A mountain of literature has demonstrated that, in the case of opioid addiction, abstinence doesn't work. Medically assisted treatment, using buprenorphine and other medications, is the current standard of care and is supported by stronger evidence than behavioral therapy. So why do less effective interventions still command so many resources?

One reason is that medicine is ruled by various fiefdoms that don't want to lose their relevance. Take psychoanalysis for depression and anxiety. This costly and time-consuming intervention has been replaced by very effective and relatively inexpensive medications.

If the judicial system insists on being so involved with opioid addiction, then those responsible for administering that system should be better educated about the disease and its treatment or stop practicing medicine without a license. Court-ordered rehab isn't helpful for the addict, nor is it cost effective.

David M. Barclay III, M.D., M.P.H.
Medical director, Prevention Point
Philadelphia

Public Disclosure of Pay Data Can Be Misleading

Information in the form of quantified data can be very useful but also very dangerous, as demonstrated by "In a First, U.S. Firms Reveal Workers' Pay Gap With CEO" (page one, March 12) on the results of corporate disclosures mandated by the 2010 Dodd-Frank Act.

On one hand, providing salary comparisons may be useful to owners (single party or stockholders) of a company or sports franchise to assess the fiscal and strategic decision-making management of the business, but the public disclosure of such data can be very misleading. Without additional contextual information about the relative responsibilities of the various duties and individual contribution to the success of the enterprise is like comparing the value of coal to diamonds. Both serve an essential purpose, but a major value-distinguishing characteristic is the scarcity and demand for a specific set of attributes.

A broad-based federal law enacted purportedly to ensure pay equality or fairness has the aura of heavy-handed social engineering by a group of legislators who themselves should be more than a little concerned about salary treatment based on useful contribution.

Joe Payne
Sharonville, Ohio

Idaho Should Take a Page From California's Book

Regarding former Sen. Phil Gramm's "How to Complete the Escape From ObamaCare" (op-ed, March 16): So the Democrats want to intimidate the state of Idaho because of its perceived free-market threat to ObamaCare. The response from Idaho's legislators should simply be to follow California Gov. Jerry Brown's example and declare themselves an ObamaCare sanctuary state.

Dave Erchull
Tucson, Ariz.

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Pepper ... And Salt

THE WALL STREET JOURNAL

"I'm a changed man, Lou—I'm wearing a wire and a Fitbit."

OPINION

How to Answer Russia's Escalation

By David Satter

The attempted murder of Russian former double agent Sergei Skripal in the U.K. represents a serious escalation. The March 5 attack, in which his daughter Yulia was also poisoned, shows that Moscow is directing terrorism toward defectors and using it as a political weapon against the West. The West should respond by imposing sanctions against President Vladimir Putin himself.

In response to a chemical attack in the U.K., impose sanctions directly against President Vladimir Putin.

In the 2006 attack that killed former Federal Security Service officer Alexander Litvinenko in London, the crime was not supposed to be solved. He showed symptoms of radiation poisoning, but there was no beta or gamma radiation in his blood. Before he died, however, samples of his urine were tested in a laboratory for alpha-emitting elements that cannot penetrate the body but are deadly when taken internally. The tests came back positive for polonium-210, an alpha emitter. If Litvinenko had died sooner, the cause would not have been detected.

In the Skripal case, the Russians are eager to take credit. Kirill Kleimenov, an anchor on the official government station Channel One, observed that traitors rarely live to a "ripe old age" and advised them: "Don't choose Britain as a place to live." Against the background of furious denials on the rest of Russian state-controlled television, this was, in the lexicon of the Russian security services, a "direct hint" that the attack on Mr. Skripal was an official act.

Maria Zakharova, the Russian foreign ministry spokesman, responded to a demand for answers by saying that Britain should not "threaten a nuclear power." That suggests a dual motive for the attack: It was undertaken to murder a former double agent and to assert Russian power and defiance of Western efforts to restrain Moscow's lawlessness.

Investigating the Skripal attack in Winterslow, England, March 12.

The Skripal attack is also a sign that Russia has expanded the category of persons targeted for murder. Mr. Skripal was one of four double agents Russia released in 2010 in exchange for 10 Russian spies in the U.S. Since the first spy swap in 1962—when KGB Col. Rudolf Abel was exchanged for Capt. Francis Gary Powers, the U-2 spy plane pilot who was shot down over the Soviet Union—it has been understood that swapped spies are not subject to retribution.

The targeting of Mr. Skripal echoes developments inside Russia, where the list of victims has expanded to include Russian opposition-leader Boris Nemtsov. In a Feb. 10, 2015, interview with the newspaper Sobesednik, Nemtsov expressed fear that Vladimir Putin would have him killed. But he believed, according to his assistant Olga Shorina, that he was likelier to be arrested and sent to a labor camp. Based on his knowledge of the system, Nemtsov, a former vice premier, said he thought Mr. Putin would be unlikely to order the killing of a former high official.

He was killed on a bridge near the Kremlin on Feb. 27, 2015. Evidence indicates it was a military operation involving 30 to 40 persons and the crime was carried out by the Federal Guards Service that answers directly to Mr. Putin.

The Skripal attack is significant because it was executed without regard for innocent victims. The polonium-210 that killed Litvinenko was not a danger to bystanders; it had to be ingested. The Skripals were attacked with a contact poison capable of harming anyone near it. The use of the poison, possibly a powder, was so indiscriminate that 19 people were affected in addition to Sergei and Yulia Skripal. Nick Bailey, a police detective who investigated the case, was poisoned and remains hospitalized.

The Skripal attack represents a major escalation in Russian terror in the West. Western governments have an obligation to their citizens to make sure such an attack never takes place again. The U.K. ordered the expulsion of 23 Russian diplomats but this is an exercise in futility. All previous expulsions—including four diplomats from the U.K. after the Litvinenko murder, and 50 or more from the U.S. at other times—did nothing to change Russian behavior.

U.S. rhetoric has been muted. White House press secretary Sarah Huckabee Sanders last Monday described the attack as "reckless, indiscriminate and irresponsible," an evasive way of describing a murderous act of political terror. President Trump waited until Tuesday to support the U.K. and did not condemn Russian actions.

The West needs to treat Mr. Putin the same way it treated Belarusian leader Alexander Lukashenko in response to his human-rights violations, including the disappearances of several political opponents. The Belarus Democracy Act 2004 provided for a U.S.-visa ban on Mr. Lukashenko, a freeze of his assets, and a freeze of the assets of companies believed to be connected to him. The European Union followed with a visa ban. After the sanctions were imposed, the disappearances in Belarus came to an end.

In the case of Mr. Putin, such measures could have a significant effect. In his first inaugural address, on May 7, 2000, he said that in Russia, "the head of the government was always and will always be the person who answers for everything." The West needs to take him at his word.

Mr. Satter is author, most recently, of "The Less You Know, the Better You Sleep: Russia's Road to Terror and Dictatorship under Yeltsin and Putin."

The Penn Law School Mob Scores a Victory

By Heather Mac Donald

The campus mob at the University of Pennsylvania Law School has scored a hit. Prof. Amy Wax will no longer be allowed to teach required first-year courses, the school's dean announced last week. Now the leader of Black Lives Matter Pennsylvania wants Ms. Wax's scalp. According to a weekend newspaper report, if she isn't fired within a week, "he plans to make things on the West Philadelphia campus very uncomfortable."

Ms. Wax's sin this time was to discuss publicly the negative consequences of affirmative action. Her punishment underscores again the dangers of speaking uncomfortable truths in a university setting.

The academic left has been gunning for Ms. Wax since last August, when she co-wrote a Philadelphia Inquirer op-ed calling for a return to the "bourgeois culture" of the 1950s. She was branded a white supremacist for advocating personal responsibility, even though the op-ed criticized "the single-parent, antisocial habits, prevalent among some working-class whites."

Half the Penn law faculty signed an open letter denouncing the op-ed. The dean, Ted Ruger, asked her to take a leave of absence and stop teaching her first-year course, Ms. Wax wrote last month in this newspaper. She declined his request. (The law school denied her account and said the discussion was merely "about the timing of a regularly-accrued sabbatical.")

The latest outrage arises from a web video Ms. Wax recorded in September with Glenn Loury, an economist at Brown University. Forty or so minutes in, the discussion turned to racial preferences. Mr. Loury noted that, on average, students admitted via preferences "are less academically qualified—by definition!" Ms. Wax brought up the "mismatch" effect: the idea that the so-called beneficiaries of preferences have difficulty competing with peers who were admitted without them. "Take Penn Law School, or some top 10 law school," Ms. Wax said. "Here's a very inconvenient fact, Glenn. I don't think I've *ever* seen a black student graduate in the top quarter of the class and rarely, rarely in the top half. I can think of one or two students who've scored in the top half in my required first-year course."

Ms. Wax added that she teaches a "class of 89, 95 students" each year, "so I'm going on that because a lot of this data is of course a closely guarded secret." That is an understatement. Schools pay fanatical attention to the racial makeup of their student bodies, then work just as fanatically to conceal the resulting gaps in qualifications and subsequent academic achievement.

Ms. Wax suggested that preference beneficiaries would do better in colleges where their academic preparation equaled that of their peers. "If they were better matched, it might be a better environment for them," she said. "We're not saying they shouldn't go to college. We're not saying that. I mean, some of them shouldn't." The statement that some

Now Black Lives Matter wants Amy Wax fired for arguing that preferences harm their 'beneficiaries.'

college students would be better off in vocational training or work is true for all races, particularly for the millions who drop out before getting a degree.

The video had been online for months before someone at Penn got wind of it. Cue an alumni and student petition protesting Ms. Wax's "disparaging, false and deeply offensive claims."

The petition worked. In the campus email last week announcing Ms. Wax's removal from first-year teaching, Mr. Ruger denounced her claims as false: "Black students have graduated in the top of the class at Penn law." At the same time, he insisted that Penn does not "collect, sort or publicize grade performance by racial group."

Although Ms. Wax's statements were general, Mr. Ruger accused her of violating the school's confidentiality policy and conscripting students in the service of her "musings about race in society." He also accused her of saying that some black law students at Penn shouldn't "even go to college," when she was speaking of the mismatch problem more broadly.

Though couched as a subjective perception, Ms. Wax's casual observations about the mismatch effect at Penn were too sweeping—there have undoubtedly been some black students in the top quarter of the class—and she might want to correct that overstatement. But the mismatch effect is absolutely real, at Penn and elsewhere. In the early 1990s, the Law School Admissions Council tracked 27,000 students at nearly 90% of all accredited law schools. Of the 2,000 students attending the most "elite" law schools, 52% of blacks were in the bottom tenth of their class, compared with 6% of whites. Only 8% of blacks were in the top half of their class. Bar failure rates were also skewed; the LSAC data showed that 19% of blacks graduating from these elite schools failed the bar, compared with 3.5% of whites.

In 1995 UCLA law professor Richard Sander gathered GPA data on first-year law students at 19 law schools, including Penn. Though the number of self-identifying black respondents from Penn was small, the patterns there closely tracked those in the LSAC data set. There is no reason to think anything has changed.

Mr. Ruger has accused Ms. Wax of a "conscious indifference" to the truth. The burden is on him to disclose the data that prove her thesis wrong. It is conceivable that to maintain plausible deniability about the effects of its racial preferences, Penn does not collect or analyze data on the performance of black law students. That information, however, would be easy to assemble.

The diversity industry has given notice: Discuss the costs of affirmative action, and you can be punished and publicly shamed. The real scandal is not what Ms. Wax said but that schools refuse to be transparent about admissions policies that impede students' success.

Ms. Mac Donald is a fellow at the Manhattan Institute and author of "The War on Cops" (Encounter, 2016).

The Supreme Court's Chance to Rebuild a 'Constitutional Bulwark'

By James W. Ely Jr.
And Nick Sibilla

An obscure dispute over life insurance could breathe new life into a long-neglected constitutional safeguard for economic freedom.

In 1998, Mark Sveen named Kaye Melin, then his wife, primary beneficiary of an insurance policy. The couple divorced almost a decade later, and Sveen died in 2011. He hadn't changed his policy, but in 2002 Minnesota had passed a law automatically removing a spouse as a life-insurance beneficiary if the couple divorces. Sveen's children claim to be the rightful beneficiaries. On Monday the U.S. Supreme Court considers whether Minnesota violated the Constitution's Contract Clause.

Sveen v. Melin is the first Contract Clause case to appear before the high court in more than 25 years. By accepting this case, the justices may be signaling a willingness to restore the clause, which has fallen into disuse, to its historical vigor.

Unlike some other disputed constitutional provisions, the clause is unequivocal: "No State shall . . . pass any . . . Law impairing the Obligation of Contracts." James Madison called it a "constitutional bulwark in favor of personal security and private rights." The Contract Clause was one of the few curbs on state government power placed in the original Constitution.

When it was drafted, the nation's economy was still reeling from the Revolutionary War. Recovery was hindered by many state legislatures, which passed debt-relief measures that often infringed on contracts. The risk that contracts could be rewritten at will caused investor confidence to plummet and credit markets to shrink.

The framers became convinced that contractual stability was a necessary condition of prosperity. Moreover, inviolable contracts could promote fairness and equity, since politically connected factions would not be able to gain an advantage through legislative interference.

In the century after ratification, the Supreme Court routinely cited the Contract Clause to invalidate schemes to discharge debts, repudiate bonds or halt mortgage foreclosures, while upholding grants of tax exemptions and corporate charters (including, most famously, for Dartmouth College). In fact, the first federal-court decision striking down a state law, in 1792, relied on the Contract Clause.

In 1878 Justice William Strong wrote that there was "no more important provision in the Federal Constitution" than the Contract Clause: "It is one of the highest duties of this Court to take care that this prohibition shall

The Contract Clause has been moribund since 1934. The justices could revive it in a case from Minnesota.

neither be evaded nor frittered away." By 1890, almost half of all Supreme Court decisions that held a state law unconstitutional were invalidated under the clause.

But starting in the late 19th century, the justices began ruling that the clause did not apply to a state's "police power" over health, safety and morals. The exceptions multiplied, culminating with the 1934 decision *Home Building & Loan Association v. Blaisdell*, in which the court upheld a state moratorium on mortgage foreclosure imposed during the Great Depression, virtually eviscerating the clause.

In the late 1970s, the Contract Clause briefly resurfaced when the High Court struck down laws in New Jersey and Minnesota that retroactively altered contracts. In one of the cases, Justice Potter Stewart felt it necessary to declare that the Contract Clause "remains part of the Constitution. It is not a dead letter."

But if it wasn't quite dead, it appeared moribund. Not only were both rulings narrow and technical, the Supreme Court also created a convoluted, multipronged test to decide Contract Clause cases. Instead of simply determining whether a state law impairs the obligation of contracts—and thus violates the clause's plain language—judges have to decide if a law causes a "substantial impairment" of contract rights, if the law advances a "significant and legitimate public purpose," and if the law's approach is "reasonable" and "appropriate," with wide deference granted to lawmakers.

This muddled and malleable test would have baffled Chief Justice John Marshall, who observed in an 1819 decision that the Contract Clause was "incapable of being misunderstood." The clause was based on "the inviolability of contracts," he wrote, which "was to be protected in whatsoever form it might be assailed."

Sveen v. Melin gives the justices a path to return to the clause's original meaning. A ruling for Ms. Melin would set an important precedent that could advance liberal priorities as well as conservative ones. With a reinvigorated Contract Clause, laws that impose rent control, alter franchise agreements, abolish teacher tenure, or modify public employees' benefits could all be scrutinized for infringing existing contracts. Restoring the Contract Clause to its rightful place in the constitutional order would also help ensure respect for the rule of law.

Mr. Ely is a professor emeritus of history and law at Vanderbilt and author of "The Contract Clause: A Constitutional History." Mr. Sibilla is a legislative analyst at the Institute for Justice. The Institute and Mr. Ely co-wrote a friend-of-the-court brief supporting the respondent in the Sveen case.

Notable & Quotable

From "San Francisco Is Suffering From the Excesses of Its Own Liberalism" by Erielle Davidson, TheFederalist.com, March 16:

Despite the dismal nature of these events, there is an occasional Chekhovian instance of laughter through tears. Just last month, a man attempted to break into my apartment around 3 a.m. After about five minutes of banging on my door and fidgeting with the handle, he scampered off as I screamed the cops were coming. Upon peering outside, I noticed the would-be robber left his small Chihuahua-Papillion mix behind, which I happily took for the night until I could locate her owners. I remember darkly chuckling to myself that only San Francisco could produce such miserable absurdity.

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Nigeria Abduction Seen as Copycat Attack

February kidnapping of 110 girls, like previous raids by Boko Haram, aims to bring funds and fame to a new, more dangerous group

DAPCHI, Nigeria—As evening prayers resounded across this northeastern Nigerian town last month, camouflage-clad jihadists drove up to a girls' school and kidnapped 110 students in a replay of one of the world's most infamous abductions: Boko Haram's 2014 seizure of 276 girls, only hours away in Chibok.

By Joe Parkinson, Drew Hinshaw and Gbenga Akingbule

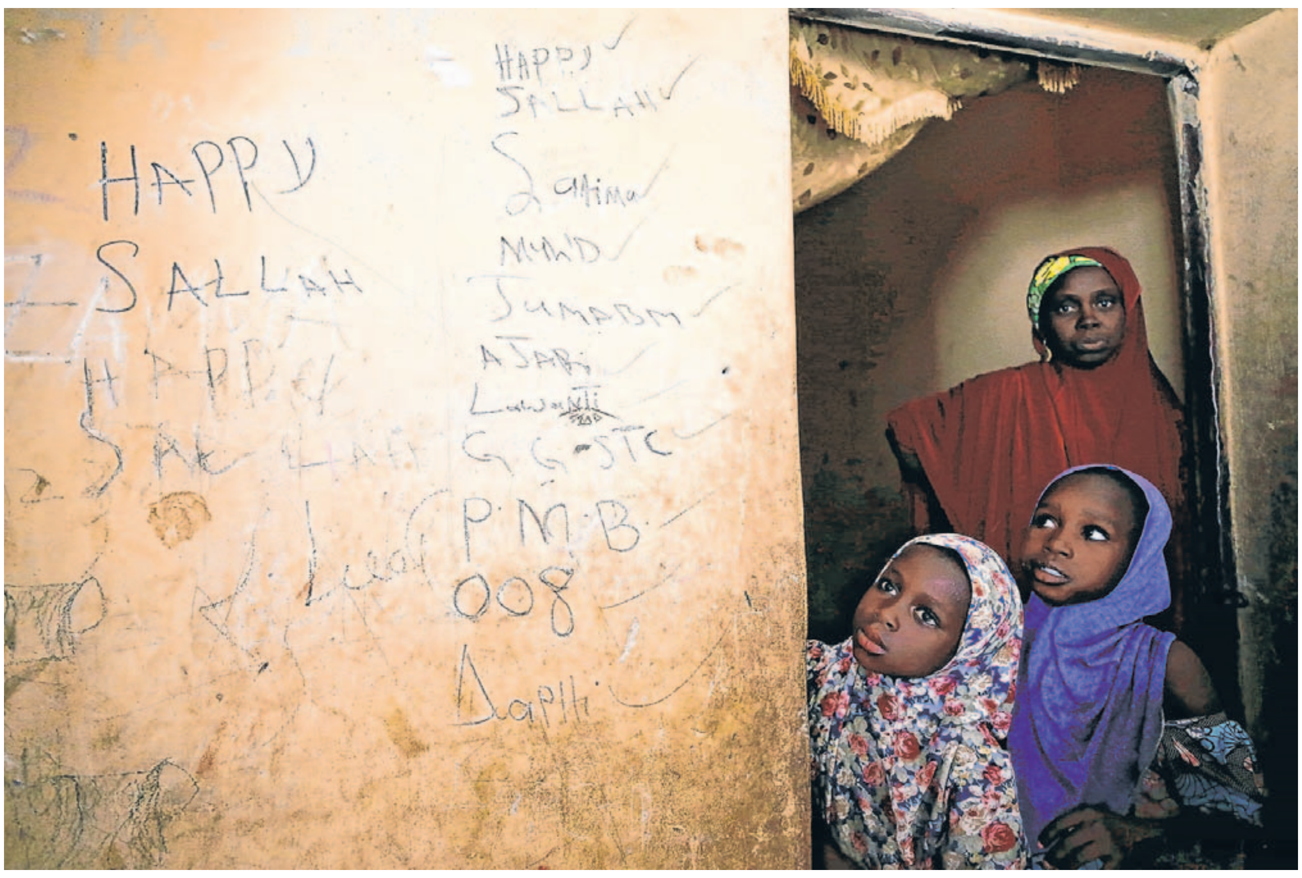
But the Feb. 19 attack was different in an important and unsettling way, according to U.S. and Nigerian officials. The culprit wasn't Boko Haram, but a breakaway faction allied with Islamic State and, in the eyes of Washington, the biggest terrorist threat in Africa's most-populous nation.

This splinter group, known as Islamic State West African Province, is better trained and more focused on Western targets, U.S. officials say. It is in regular contact with Islamic State commanders in Iraq and Syria, according to internal communications reviewed by The Wall Street Journal.

Boko Haram's Chibok kidnapping sparked a global campaign—#BringBackOurGirls—and ultimately won it a €3 million ($3.7 million) ransom, according to officials involved in the exchange, as well as world-wide notoriety.

The copycat attack seems similarly intended to bring the faction funds and fame. The 110 hostages are girls from Dapchi Girls Science and Technology College, the youngest aged 10.

"They've learned something: You can make money from taking girls," said Jacob Zenn, an analyst at the Jamestown Foundation, a foreign-policy think tank, who provided some of the communications between Islamic State and Boko Haram.



AFOLABI SOTUNDE/REUTERS (2)

Mother and sisters of Fatima Dala, one of the 110 students taken from their school in Dapchi, Nigeria, stand by a wall marked with Fatima's writings at home in February. Below, Hajiya Gana Mohammed, mother of Afisat Grah, with her daughter's books and clothes.

Jihadist Split Spurs A New Terror Group

Boko Haram and the splinter group blamed for the abduction of schoolgirls in the town of Dapchi lie on different ends of a generational and tactical divide.

In 2016, rifts inside the terror group exploded into a violent feud. Top commanders were forced to choose between factions, and turned their guns on each other.

On one side of the feud is Abubakr Shekau, the bellowing Boko Haram warlord whose scorched-earth tactics have included strapping suicide bombs to young women.

On the other is Abu Musab al-Barnawi,, the quiet roughly 23-year-old son of Boko Haram's deceased founder, Muhammed Yusuf. His Islamic State West African Province troops have opted for more surgical, commando-style attacks and quick kidnappings of security services and civilians working with Western groups.

At least 400 Boko Haram fighters have died battling each other since the split, officials say.

Nigeria's government response this time suggests it may pay again: On Tuesday, President Muhammadu Buhari said he would try to negotiate the girls' release, rather than risk a military confrontation. Several senior Nigerian and Western officials said back-channel talks were under way.

"We want to bring these girls back alive," Mr. Buhari said. Standing next to him, Rex Tillerson, in his final hours as America's top diplomat, seemed to back that approach, which contrasts with longstanding U.S. policy discouraging such talks. "We hope that's something that can be worked out and they will be persuaded to release these girls quickly," he said.

The kidnappers' group, dubbed ISIS-WA by U.S. officials, is led by Abu Musab al-Barnawi, a young militant so mysterious that Nigeria's intelligence agencies aren't sure what he looks like. The thousands-strong faction uses sophisticated communications technology and has kidnapped foreign workers and threatened to hit Western targets.

The Barnawi faction hasn't publicly claimed responsibility for the attack, but Nigerian and Western officials and sources close to the group confirmed it is holding the girls and may have taken some into neighboring Niger.

The faction's rise shows how Islamic State's legacy lives on, despite its defeats in the Middle East.

"There's now a reason to be very concerned. They have significant capabilities," said a senior U.S. official. "When this group clashes with the Nigerian military they consistently come out on top."

Nigeria last week closed dozens of boarding schools in its northeastern-most state, and has dispatched jets and drones to search for the girls. U.S. drones—which were used in an effort to find the 276 schoolgirls kidnapped from Chibok in 2014—remain active in the region.

Nigerian and U.S. officials stress the divided Boko Haram remains much weaker than four years ago, when it held a swath of territory the size of Belgium. But an uptick in attacks from both factions in the past year has shown the resilience of the insurgency.

Inside the pastel-colored dormitory of the girls' school in Dapchi, a dust-caked town of 15,000, a period of mourning has mutated into anger. Sandals and shawls lie strewn across the floor, discarded in the chaos of the abduction.

Outside the school, parents have assembled a billboard of 110 passport photos of the missing. On each is scrawled a name and age: Hassana, 14; Leah, 12; Fatima, 18.

"How could the government let them do this?" asked Alhaji Ali Kaumi Dapchi, whose daughters were seized from the school. "We can't sleep. We can't eat," he said, thumbing one of his daughter's textbooks. "When we hear the mention of their names, we are thrown to tears."

TECHNOLOGY: CHINA'S GIANTS TARGET THE AUTO INDUSTRY B4

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Last Week: **S&P** 2752.01 ▼1.24% **S&P FIN** ▼2.40% **S&P IT** ▼0.97% **DJ TRANS** ▼0.52% **WSJ $IDX** ▲0.16% **LIBOR 3M** 2.202 **NIKKEI** 21676.51 ▲0.97% **See more at WSJMarkets.com**

General Dynamics in IT Shootout

By Dana Mattioli And Doug Cameron

CACI International Inc. has made a roughly $7.2 billion bid to buy **CSRA** Inc. in an attempt to break up the information-technology provider's sale to **General Dynamics** Corp.

CACI has offered $44 per share in cash and stock, the company said in a statement Sunday, confirming an earlier report by The Wall Street Journal. The bid consists of $15 a share in cash and the rest in stock. That compares with the $40.75-a-share all-cash deal CSRA agreed to last month with General Dynamics that has yet to close.

CSRA on Sunday confirmed receiving the unsolicited proposal from CACI and said it would review it, though the board continued its support for General Dynamics' offer.

It would be a big bite for Arlington, Va.-based CACI, which has a market value of just under $4 billion even after its shares closed at an all-time high Friday. It could have a difficult time outgunning General Dynamics, a major aerospace-and-defense contractor with a market value of $66 billion.

$7.2B

Size of CACI's bid for CSRA to upset sale to General Dynamics.

In a separate statement Sunday, CACI raised its forecast for net income and the lower end of its revenue guidance for fiscal 2018.

General Dynamics late Sunday said that it would continue its tender offer for CSRA that is due to close on April 2, and questioned elements of CACI's unsolicited bid.

"We believe the nominal price of CACI's offer to CSRA overstates the real value of the CSRA shareholders and understates the risk attendant to it," General Dynamics said.

CSRA was approached by two companies early last year about a potential combination, according to a prior regulatory filing, triggering a three-way battle that General Dynamics appeared to have won. CACI was one of those companies, according to people familiar with the discussions.

Its latest move comes amid a scramble for greater scale among companies supplying the Pentagon and other government agencies with IT and analytic services.

Rising defense budgets and the boom in commercial jetliner sales have fueled a surge in deal-making in the aerospace and defense sectors.

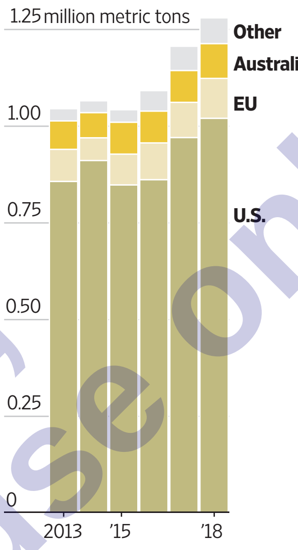
Endowments, Pension Funds Bet That Almond Crops Will Bear Fruit

ZUMAPRESS.COM

NUTTY PROFESSORS? Harvard and other institutional investors are building their holdings of almond farmland. Article on B9.

California dominates global almond production but acreage is growing elsewhere.

Almond production



Note: 2018 is a forecast. Production years end July 31 for the Northern Hemisphere and Dec. 31 for the Southern Hemisphere.
Source: U.S. Department of Agriculture
THE WALL STREET JOURNAL.

Facebook Provokes Storm Over User Data

By Deepa Seetharaman

Facebook Inc. ignited a firestorm over how it manages third-party access to its users' information, after the social network said a firm with ties to the 2016 Trump campaign improperly kept data for years despite saying it had destroyed those records.

U.S. and British lawmakers slammed Facebook over the weekend for not providing more information about how the data firm, **Cambridge Analytica**, came to access information about potentially tens of millions of the social network's members without their explicit permission.

"This is a big deal, when you have that amount of data. And the privacy violations there are significant," Sen. Jeff Flake (R., Ariz.), a member of the Senate Judiciary Committee, said in an appearance on CNN. "So, the question is, who knew it? When did they know it? How long did this go on? And what happens to that data now?"

The attorney general in Massachusetts said in social-media posts Saturday that her office planned to launch an investigation into the matter.

Damian Collins, the U.K. lawmaker who chairs a parliamentary committee on media and culture, said he intended to ask Facebook Chief Executive Mark Zuckerberg to testify before the group, or send a senior executive to do so, as part of its inquiry into how social-media manipulation affected Britain's referendum decision to exit from the European Union.

Late Friday, Facebook said it suspended Cambridge and two individuals—Aleksandr Kogan, a psychology professor from the University of Cambridge, and Christopher Wylie, who helped found Cambridge—after hearing "reports" they had violated Facebook policies that govern how third-party developers can deploy user data they obtained from the company. Facebook didn't elaborate on the source of its information.

Facebook said it learned in 2015 that Mr. Kogan broke Facebook policy and shared the user data with third parties. The company said it demanded he and third parties with access to the data delete those records but learned this month the data hadn't been destroyed.

Facebook executives spent much of Saturday arguing what happened didn't constitute a data breach—even as they and the company ac-

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KEYWORDS | By Christopher Mims

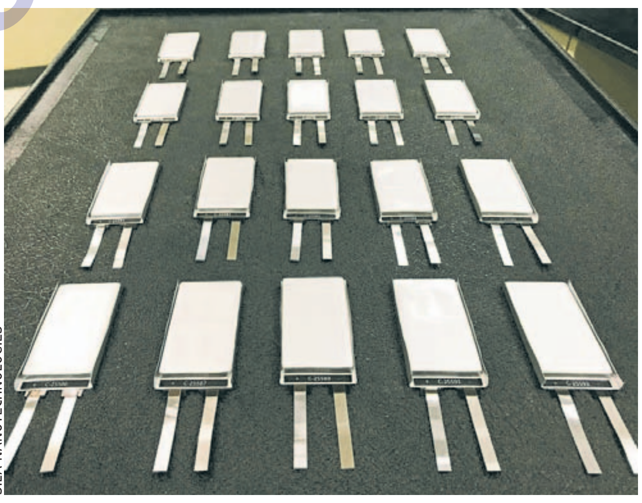
Battery Life Powers Ahead Toward Sizable Gains

The batteries that power our modern world—from phones to drones to electric cars—will soon experience something not heard of in years: Their capacity to store electricity will jump by double-digit percentages, according to researchers, developers and manufacturers.

The next wave of batteries, long in the pipeline, is ready for commercialization. This will mean, among other things, phones with 10% to 30% more battery life, or phones with the same battery life but faster and lighter. We'll see more cellular-connected wearables. As this technology becomes widespread, makers of electric vehicles and home storage batteries will be able to knock thousands of dollars off their prices over the next five to 10 years.

There is a limit to how far lithium-ion batteries can take us; surprisingly, it's about twice their current capacity. The single-digit percentage improvements we see year after year typically are because of improvements in how they are made, such as small tweaks to their chemistry. What's coming is a more fundamental change to the materials that make up a battery.

First, some science: Every lithium-ion battery has an anode and a cathode. Lithium ions traveling between them yield the electrical current that powers our devices. When a battery is fully charged, the anode has sucked up lithium ions like a sponge. And as it discharges, those ions travel through the electrolyte, to the cathode.



SILA NANOTECHNOLOGIES

Prototype batteries built by the startup Sila Nanotechnologies.

Typically, anodes in lithium-ion batteries are made of graphite, which is carbon in a crystalline form. While graphite anodes hold a substantial number of lithium ions, researchers know a different material, silicon, can hold 25 times as many.

The trick is, silicon brings with it countless technical challenges. For instance, a pure silicon anode will soak

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INDEX TO PEOPLE

Blackstone CEO Schwarzman Gets New Rewards

By Dawn Lim

Blackstone Group LP guaranteed Chief Executive Stephen Schwarzman new rewards for his contribution to the firm as a founder when he chooses to retire—and even after his death.

The entitlements cement the 71-year-old billionaire's unique status at the investment empire he helped create and tie his fortunes to the world's largest private-equity firm by assets.

The firm will provide Mr. Schwarzman free access to a car and driver for life, privileges he previously was guaranteed for a limited number of years.

If and when he retires, Mr. Schwarzman will be reimbursed for travel on behalf of Blackstone and entitled to legal representation for matters related to the firm, reflecting Mr. Schwarzman's possible continuing role as a public face of Blackstone.

As part of a new agreement, the buyout firm will allow Mr. Schwarzman's estate to invest in or alongside Blackstone funds without fees in the decade after his death, an unusual perk, in return for his contributions to the firm. A previous contract allowed him to make those investments without fees only during his lifetime.

These terms, disclosed early this month in a regulatory document, point to Mr. Schwarzman's clout and his intention to maintain links to the firm for years to come, even as Blackstone is transitioning other executives into leadership roles.

"Steve has absolutely no intention of retiring, and it's far from his mind," said Blackstone spokeswoman Christine Anderson.

The disclosure by the private-equity firm offers a rare glimpse into the unique privileges granted to founders of buyout shops. The rewards these executives enjoy have long been a topic of debate as investors scrutinize fund managers' plans to transfer leadership and reward younger executives.

It is difficult for some of these executives to scale back their role at the firms they have spent many years building, though there are also benefits to keeping founders with deep institutional knowledge on board.

Mr. Schwarzman has long been intimately involved in the day-to-day operations of the firm. He also is seen as an elder statesman in the private-equity industry and chaired a group of business leaders created to advise the White House on policy before it was disbanded last year.

The terms Mr. Schwarzman set with Blackstone this month replace an agreement made when the firm went public in 2007. Since then, the firm's assets have grown about fivefold to more than $430 billion. It marks the firm's global growth since Mr. Schwarzman helped found Blackstone in 1985.

He sealed the new terms following a year in which Blackstone returned $55 billion in realized gains to fund investors. These gains benefited its executives, whose earnings are linked to the firm's investment performance. Mr. Schwarzman earned at least $800 million in 2017, most of which came from dividends and fund payouts.

JASON LEE/REUTERS

In an unusual perk, the CEO's estate will be able to invest in Blackstone funds without fees in the decade after his death.

BUSINESS & FINANCE

Stores Tinker With Strategy

Traditional retailers rush to keep up with customers increasingly using tech to shop

By Sarah Nassauer

JUSTIN SULLIVAN/GETTY IMAGES

A focus of the Shoptalk industry conference in Las Vegas will be ways to compete over the coming year.

Can traditional retailers keep pace with consumers as they increasingly use technology to shop? That is the question confronting hundreds of executives as they gather in Las Vegas this week.

THE WEEK AHEAD

After one of the strongest winter holiday shopping periods in years, many retail chains find themselves in a position of relative strength compared with where they stood a year ago. A strong economy and high employment have made Americans willing to spend, but they are visiting stores less often and increasingly using smartphones to check prices or just check out.

At the Shoptalk industry conference that started Sunday, executives from retail and technology, including **Amazon.com** Inc., **Alphabet** Inc.'s Google, **Macy's** Inc. and **Walmart** Inc., will meet to discuss how they will navigate the coming year.

"It's the first time in a very long time when it feels like the wind is at our back as an industry versus we have to walk into very strong headwinds," said Steve Barr, leader of the retail and consumer sector at consulting firm PwC.

In the most recent quarter, **Target** Corp., Macy's, **Best Buy** Co. and Walmart said an overall strong economy and solid holiday spending helped revenue growth. Retailers finally have the money to get basics right—customer service, store remodels and better technology—details that will help traditional chains compete with each other and online, said Mr. Barr.

"The elephant in the room is Amazon, but there is no single technology or magic potion that is going to instantly provide a solution," he said.

Amazon's purchase of Whole Foods last year put in motion a race for brick-and-mortar retailers to add home-delivery services and for Amazon to increase sales in categories traditionally sold from stores. Walmart said last Wednesday it plans to offer home delivery of groceries in 100 metro areas by year's end. Target, **Kroger** Co, and **Costco Wholesale** Corp are adding more cities and products to their home grocery-delivery services.

Higher consumer spending and lower corporate tax rates have helped retailers spend on new technology and improving stores. But profit pressures remain and any perceived bump on the road to compete with Amazon can hurt.

Online sales growth slowed at Walmart in the most recent quarter, though overall sales were strong and Walmart has made big moves to grow online, including buying online retailer Jet.com for $3.3 billion. The day of the earnings announcement, Walmart's stock fell more than 10%, the biggest one-day drop in the price since 1988. Walmart executives have said they are still on track to achieve 40% U.S. e-commerce sales growth in the current fiscal year.

Retailers should focus on pleasing customers, not just beating Amazon or keeping up with Walmart's investments in the space, said Brendan Witcher, digital strategy analyst at Forrester Research. "The reality is they aren't usually behind their competitors. They are behind their customers," he said.

"If you don't understand your customer, there is no technology in the world that is going to save you," he added.

Last week, the industry had a stark reminder when Toys "R" Us Inc. set plans to close all its U.S. stores, succumbing to a hefty debt load that limited its ability to compete with both Amazon and discounters.

DANIEL LEAL-OLIVAS/AGENCE FRANCE-PRESSE/GETTY IMAGES

Facebook offices in London. Facebook said it learned in 2015 that Aleksandr Kogan shared the user data with third parties.

DATA

Continued from the prior page

knowledged Mr. Kogan and Cambridge abused user data that previously was provided openly to third parties.

The episode highlighted Facebook's continuing struggle to grasp how its platform and the data it generates are handled by others. It comes as Facebook struggles to respond to last fall's disclosure that Russian-backed actors leveraged its tools to manipulate Americans during and after the 2016 U.S. presidential race.

Rep. Adam Schiff of California, the top Democrat on the House Intelligence Committee, said lawmakers should investigate how Cambridge got hold of the data. "We need to find out what we can about the misappropriation of the private information of tens of millions of Americans," Mr. Schiff told ABC News on Sunday.

The Russian manipulation disclosed last year showed how a small group of pro-Kremlin actors created fake accounts to sow discord through posts, images and videos shared widely on Facebook. The activity disclosed Friday is a case where outsiders harvested Facebook user data and deployed it seemingly out of public view.

"This could be a data privacy reckoning for Americans. It's a wake up call," said David Carroll, an advocate for increased regulation of Facebook and an associate professor of media design at the New School's Parsons School of Design.

"We are in the process of conducting a comprehensive internal and external review as we work to determine the accuracy of the claims that the Facebook data in question still exists," Paul Grewal, Facebook's deputy general counsel, said in a written statement. "That is where our focus lies as we remain committed to vigorously enforcing our policies to protect people's information."

The current controversy has its roots in a 2007 decision by Facebook to give outsiders access to the company's "social graph"—the friend lists, interests and "likes" that tied Facebook's user base together. Tapping that rich store of information required that a person create an app and plug it into Facebook's platform.

The move helped Facebook become a fixture in its members' lives, catapulting the company from 58 million users to more than 2 billion today. It also addressed criticism from people who argued the company shouldn't have sole custody over the data generated by users.

Users of dating apps who signed in using Facebook, for example, could see which friends they had in common with a potential date—even if those mutual friends didn't use the app. President Barack Obama's 2012 re-election campaign created a voter-outreach app that plugged into the Facebook platform to find potential supporters among a user's friends.

In 2014, Facebook said it would reverse course after users questioned their data being shared with outsiders without their knowledge. Those changes went into effect in 2015, forcing many dating, job-search and political apps to close their doors, and sparking a fresh round of criticism that Facebook changed its rules at whim.

Despite the changes, Facebook couldn't ensure data already gleaned by developers wasn't shared with third parties. Such a move would violate the Facebook policies governing how third-party developers can deploy data they obtained from the company.

In a Friday evening post, Facebook said it had learned in 2015 that Mr. Kogan broke its data policies when he shared user data he gathered from his personality-prediction app, "thisisyourdigitallife," to third parties including Cambridge and Mr. Wylie.

Cambridge Analytica has said it didn't use Facebook data collected by Mr. Kogan's company, Global Science Research, during the 2016 U.S. presidential election.

Facebook said about 270,000 people downloaded the app, giving consent for Mr. Kogan to access information such as their city or content they had liked. Mr. Kogan also could see some information about friends whose privacy settings allowed the access of such data.

A 2011 paper co-written by Facebook researchers said the average Facebook user had 190 friends. That could mean that

Facebook is still struggling to grasp how its platform and data are handled by others.

through the 270,000 people who downloaded Mr. Kogan's app, data from 51.3 million people were obtained.

A Facebook spokesman said the company's goal in 2015 was securing the data in question, a goal it believed it had accomplished at the time. The company reiterated that it didn't consider the abuse as a "data breach" because Mr. Kogan gained access to the data through legitimate means.

—Dave Michaels contributed to this article.

Meredith to Cut Up to 300 Jobs

FFREY A. TRACHTENBERG

eredith Corp., the coun- largest magazine pub-, is expected to lay off o 300 staffers as soon as week after recently com-g the acquisition of Time according to people fa-r with the situation.

e job cuts, designed to e duplicative corporate ng, are expected to pri-y affect Time Inc.'s cor-e employees in New York.

publisher wants rim $400 million 500 million in s over two years.

cuts are part of Mere- efforts to trim $400 mil-o $500 million in costs the next two years.

edith is also expected to l a new sales structure provides greater focus on fic magazine brands, the le said. In recent years, Inc. embraced a sales ap-h that emphasized ad-sing categories such as maceuticals rather than idual magazines. As part e changes, Meredith is ring a new way to pitch rtisers with much larger and digital offerings.

eredith, which owns dcast television stations ublishes such magazines etter Homes & Gardens hape, closed its $1.85 bil-acquisition of Time Inc. an. 31. One reason that Inc. was attractive to dith was the opportunity minate hundreds of mil- of dollars in duplicative including administration such as legal, financial uman resources.

itorial staffers across the er Time Inc. portfolio t expected to be affected significantly by the coming layoffs, according to people familiar with the situation. Meredith, which is considering the possible sale of Fortune, Time, Sports Illustrated and Money, would prefer to allow potential new owners of those publications to make staffing decisions, according to a person familiar with the situation.

Meredith has said it is undergoing a complete portfolio review. In a signal that the review might be coming to a close, Meredith has scheduled employee meetings for March 28 in New York City that will be led by Chief Executive Tom Harty and Jon Werther, president of Meredith's national media group. There will be separate meetings on April 11 for Meredith employees in Des Moines, Iowa.

The layoffs expected this week will likely be only the first round, with more expected throughout the year as Meredith continues to integrate Time Inc. functions.

According to regulatory filings, Time Inc. at the end of 2016 employed about 7,450 people, including about 4,950 based in the U.S., while Meredith employed about 3,500 full-time and 120 part-time employees as of June 30, 2017.

At a recent Deutsche Bank conference, Meredith Executive Chairman Steve Lacy said the company operated all of its back-office activities—including circulation, production, information technology, finance and legal—in Des Moines, where the costs are much lower than in New York.

The restructuring comes at a turbulent time in the media business. Magazine print advertising continues to decline, and even digital businesses are under intensifying pressure as tech giants Google and **Facebook** leverage their audiences and data to collect the majority of digital ad dollars.

—Lukas I. Alpert contributed to this article.

A drone used by Farmers Insurance in Texas last year. About 450,000 commercial drones are expected in U.S. airspace by 2022.

Drones Are Set for a Surg

FAA sees quadrupling of the aerial vehicles for commercial uses over coming five years

BY ANDY PASZTOR

U.S. regulators expect the number of commercial drones and people flying them to quadruple over the next five years, the latest positive indicator for the industry.

Updated Federal Aviation Administration numbers released last week project about 450,000 such unmanned aerial vehicles will be operating in domestic airspace in 2022, versus today's roughly 110,000. That increase is anticipated even if federal restrictions are loosened more slowly than growth advocates desire.

The agency also expects the ranks of commercial-drone pilots to climb past 300,000 over the same period, up from roughly 70,000 now. Under what the FAA considers the most likely scenario, both the number of commercial drones and their pilots are anticipated to substantially exceed totals for private aviators and associated manned aircraft.

If drone deregulation gains as much traction as White House, FAA and industry officials envision, the agency estimates overall commercial-drone numbers could top 600,000 by the start of the next decade, or about three times the country's general aviation fleet.

The FAA document sketches out growth possibilities as new drone designs "become operationally more efficient and safe, battery life expands and regulatory constraints are reduced." Package delivery and other new business models, according to the agency, represent an "enormous potential" that could boost cumulative annual growth rates close to 50%.

When it comes to recreational uses—which have racked up the most explosive growth so far—FAA experts are dialing back expectations. Their latest forecast indicates the market segment most likely will double to roughly 2.4 million drones by 2021, but that is still a million fewer than the agency predicted just a year ago.

The primary factors, according to FAA analysts, are market saturation and shifting consumer tastes similar to those that negatively affected sales of videogame consoles and video cameras in the past.

Beyond the impressive outlook for commercial drones, proponents already are enjoying an unprecedented surge in attention and political influence across Washington. "We're committed to helping our greatest innovators develop, test and deploy their technologies here in the U.S.," Michael Kratsios, the W House's deputy chief tec ogy adviser, told a feder dustry drone conferen Baltimore earlier this m

The U.S. "cannot allow promise of tomorrow t hamstrung by the bureau of the past," Mr. Kratsios

Jesse Kallman, preside **Airbus** SE's drone-ser unit, told conference atte tions increasingly are ma that evolving public pe drones "part of everyday while industry officials r "regulators are not tryi stop things."

FAA leaders have pu pledged to use waivers emptions—bureaucratic neuvers to get around ex regulatory hurdles—to the way for widespread mercial applications. managers are inclined t on policy papers to growth, because routine making can stretch from 36 months.

China's Tech Giants Take to the Road

Baidu, Alibaba and Tencent pose threat to auto industry amid shift to online services

By Trefor Moss and Liza Lin


VCG/VCG/GETTY IMAGES
Companies such as Baidu have made autonomous cars and connectivity software a priority.

SHANGHAI—Chinese technology giants **Baidu** Inc., **Alibaba Group Holding** Ltd. and **Tencent Holdings** Ltd.—dominant forces in e-commerce, mobile payments and social media—now are elbowing their way into autos, threatening established car makers.

These three companies—the so-called BATs—are plowing millions of dollars into electric-vehicle startups, car-sharing services and online retailers, as well as software platforms for autonomous driving and online car selling.

U.S. tech companies, notably **Alphabet** Inc. and its self-driving car unit Waymo, also are pushing into the auto sector. But the BAT companies have an advantage in China, where government internet controls make it difficult for foreign enterprises to compete. For example, non-Chinese companies aren't allowed to operate digital mapping systems needed for autonomous driving.

That has prompted both foreign and domestic auto companies like **Ford Motor** Co., **BMW** AG, **SAIC Motor** Corp. and **Zhejiang Geely Holding Group** Co. to seal tech partnerships with the BAT firms. This month, **Renault** SA said it is aiming for a fivefold increase in Chinese sales by 2023 as the result of a deal to sell cars on Alibaba's online retail platforms. Renault also said it would start using Alibaba's connectivity software in its cars in China.

The threat posed by China's internet giants was underscored when Li Shufu, the founder of Zhejiang Geely, said last month that the company would invest $9 billion in a 9.7% stake in Mercedes-Benz parent **Daimler** AG.

"The competitors that challenge the global car industry in the 21st century technologically are not part of the automotive industry today," Mr. Li said in a statement. "No current car industry player will be able to win this battle against the invaders from outside independently."

Baidu, Alibaba and Tencent are betting that the auto industry is going to shift from selling hardware to selling services, with revenues derived mainly from selling subscriptions to features like shared autonomous vehicles and high-speed mobile internet.

"The BATs want people in cars using their online services. They see mobility as an on-ramp into their ecosystems," said Bill Russo, an ex-Chrysler executive who now runs Shanghai consultancy Automobility. "So they're all actively investing in mobility....This is a game that's not happening anywhere else. It's what makes China so unique."

Baidu Chief Executive Robin Li has made developing self-driving cars a priority for the search and mapping company. "In future commutes, you won't have to focus much on driving anymore," he said on the sidelines of China's national legislative session in Beijing recently. "You'll be able to have hot pot and sing karaoke on the ride."

Chen Hong, chairman of SAIC Motor, China's biggest car maker, speaking separately at the legislative session, acknowledged the tech giants' threat but said traditional auto makers have an edge in understanding drivers and their needs.

Still, these auto makers need partners. SAIC has launched an internet-connected car powered by AliOS, Alibaba's in-car operating system. Two big state-run car makers, **Beijing Auto** and **Guangzhou Auto**, are developing similar so-called smartcars with Baidu and Tencent, respectively. Last year, Ford and BMW both said they, too, would launch smartcars using Alibaba's software.

The BATs are also generously bankrolling startups that are making smartcars slated to hit the China market this year.

Alibaba-backed startup **Xpeng Motors**' new G3 SUV comes loaded with maps, music apps, Mandarin voice recognition and even a camera mounted on the roof, for buyers looking to post their travels on social media. Alibaba's technology and its knowledge of the consumer, accrued over nearly two decades as China's biggest e-commerce player, is helping Xpeng grow quickly, said founder Xiaopeng He.

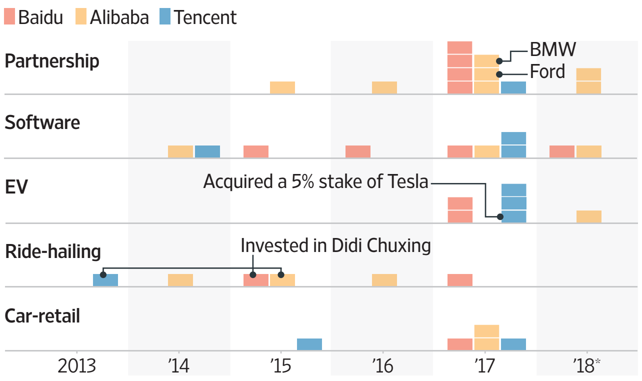
Traditional car makers need the BATs' strategic insights in a fast-changing marketplace, said Freeman Shen, whose electric-vehicle startup **WM Motor** is backed by Baidu and Tencent. Unless auto makers work with the BATs, said Mr. Shen, a former Geely executive, "I don't think they can survive."

—Yoko Kubota in Beijing contributed to this article.

BAT-Mobiles

Chinese tech giants Baidu, Alibaba and Tencent have become major players in the auto business. Their interests range from electric-vehicle startups to smartcar software and online retail channels.

Major BAT activities by type



*Through March

Sources: Dealogic, staff reports

THE WALL STREET JOURNAL.

Trade-Secret Theft in China at Issue

By Liza Lin and Yoko Kubota

The Trump administration's move to impose at least $30 billion in new trade tariffs on China comes amid continuing complaints by U.S. businesses that their trade secrets aren't safe in China.

The corporate playbook in China has long required a few extra pages on defense for companies with intellectual property at risk. To protect confidential discussions, companies sweep conference rooms and hotel suites for hidden listening devices, people familiar with corporate security say.

Executives visiting China from abroad are often equipped with burner phones that don't have stored contacts, emails or other data vulnerable to theft. Text messages are sometimes encrypted, these people say.

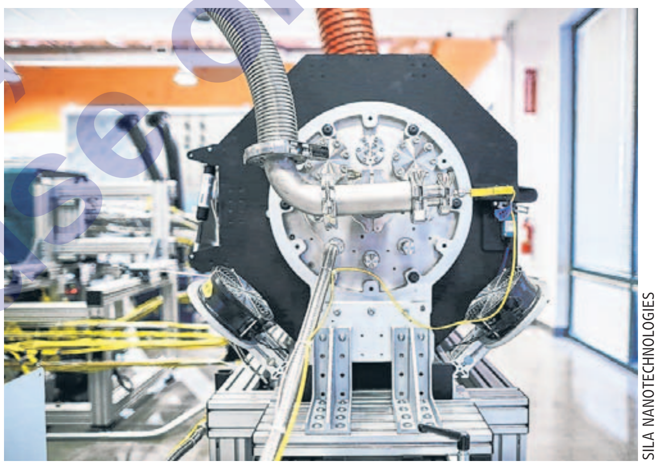
While theft of trade secrets isn't unique to China, the sheer size and developing nature of the Chinese economy have heightened the risk for foreign companies, said Violet Ho of corporate investigations firm Kroll.

"It is the second-largest economy in the world; there are so many enterprises and activities going on," said Ms. Ho, who oversees Kroll's investigations and dispute practice in Greater China. "The commercial motivation, the financial gain, in a short period, is very tempting."

In a recent survey, U.S. companies doing business in China said their biggest concerns for their intellectual property were insufficient legal protections and the difficulty seeking legal redress for violations.

Most said the IP theft and data security risks were greater in China than other regions, although by a smaller margin than in 2014, according to the survey by the American Chamber of Commerce.

China's government rejects assertions that it permits infringement of intellectual property or forces foreign companies to transfer technology—another claim at the heart of the Trump administration's plan to impose new tariffs. Mr. Trump wants China to unwind policies that require auto makers, cloud-service providers and others to share technology with Chinese partners for the right to operate there.


SILA NANOTECHNOLOGIES
Sila equipment used to make material for lithium-silicon batteries.

MIMS

Continued from page B1

up so many lithium ions that it gets "pulverized" after a single charge, says George Crabtree, director of the Joint Center for Energy Storage Research, established by the U.S. Department of Energy at the University of Chicago Argonne lab to accelerate battery research.

Current battery anodes can have small amounts of silicon, boosting their performance slightly. The amount of silicon in a company's battery is a closely held trade secret, but Dr. Crabtree estimates that in any battery, silicon is at most 10% of the anode. In 2015, Tesla founder Elon Musk revealed that silicon in the Panasonic-made batteries of the auto maker's Model S helped boost the car's range by 6%.

Now, some startups say they are developing production-ready batteries with anodes that are mostly silicon. **Sila Nanotechnologies**, **Angstron Materials**, **Enovix** and **Enevate**, to name a few, offer materials for so-called lithium-silicon batteries, which are being tested by the world's largest battery manufacturers, car companies and consumer-electronics companies.

For Sila, in Alameda, Calif., the secret is nanoparticles with a hard graphite-silicon shell and lots of empty space inside. This way, the lithium can be absorbed into the particle without making the anode swell and shatter, says Sila Chief Executive Gene Berdichevsky. Cells made with Sila's particles could store 20% to 40% more energy, he adds.

Angstron Materials, in Dayton, Ohio, makes similar claims about its nanoparticles for lithium-ion batteries.

Dr. Crabtree says this approach is entirely plausible, though there's a trade-off: By allowing more room inside the anode for lithium ions, manufacturers must produce a larger anode. This anode takes up more space in the battery, allowing less overall space to increase capacity. This is why the upper bound of increased energy density using this approach is about 40%.

Sila's clients include **BMW** and **Amperex Technology**, one of the world's largest makers of batteries for consumer electronics, including both **Apple**'s iPhone and **Samsung**'s Galaxy S8 phone.

China-based Amperex is also an investor in Sila, but Amperex Chief Operating Officer Joe Kit Chu Lam says his company is securing several suppliers of the nanoparticles necessary to make lithium-silicon batteries. Having multiple suppliers is essential for securing enough volume, he says.

The first commercial consumer devices to have higher-capacity lithium-silicon batteries will likely be announced in the next two years, says Mr. Lam, who expects a wearable to be first. Other companies claim a similar timetable for consumer rollout.

Enevate produces complete silicon-dominant anodes for car manufacturers. CEO Robert Rango says its technology increases the range of electric vehicles by 30% compared with conventional lithium-ion batteries.

BMW plans to incorporate Sila's silicon anode technology in a plug-in electric vehicle by 2023, says a company spokesman. BMW expects an increase of 10% to 15% in battery-pack capacity in a single leap. While this is the same technology destined for mobile electronics, the higher volumes and higher safety demands of the auto industry mean slower implementation there.

Enovix, whose investors include Intel and Qualcomm, has pioneered a different kind of 3-D structure for its batteries, says CEO Harrold Rust. With much higher energy density and anodes that are almost pure silicon, the company claims its batteries would contain 30% to 50% more energy in the size needed for a mobile phone, and two to three times as much in the size required for a smartwatch.

BUSINESS NEWS


EPIC GAMES

Scene from 'Fortnite,' which had let rival consoles play together.

Videogamers Plead for Play Between Consoles

BY SARAH E. NEEDLEMAN

For a short while on a Thursday in September, fans of the videogame "Fortnite" got something that had seemed hopelessly out of reach—a chance to play together on competing consoles.

Epic Games Inc., creator of the popular combat game, had accidentally flipped a switch of sorts, letting people using **Microsoft** Corp.'s Xbox One play alongside those using **Sony** Corp.'s PlayStation 4.

"This is HUGE," a person wrote on Reddit. It didn't last.

Epic said it turned off "cross-play" once it discovered the error, the latest roadblock to a dream feature for gamers that is technologically possible but frustratingly elusive.

The major console makers—Sony, Microsoft and **Nintendo** Co.—have long supported cross-play between their machines and personal computers, and more recently with mobile devices.

But the three don't always play well together, creating headaches for friends who own different consoles and game developers who say the block limits the potential to expand their audiences.

Matthew Ross, a 30-year-old graphic designer in State College, Pa., plays games with strangers because he owns a PlayStation 4 and most of his friends have an Xbox One. "It's infuriating," he said.

People playing the same game on different hardware can link up online, provided the developer has built software into allow the two systems to talk to each other. But the developer must still need each hardware makers' blessing.

At around 2 a.m. ET Thursday, more than 600,000 people tuned into **Amazon.com** Inc.'s Twitch live-streaming platform to watch rapper Drake play "Fortnite" on a PlayStation 4 with a popular streamer who was using a PC. The live stream, which handily beat the previous Twitch record for simultaneous viewers on the channel of an individual broadcaster, occurred days after Epic said it would enable both PlayStation 4 and Xbox users to play against people on PCs and mobile devices—though not against each other.

Epic's announcement prompted a "Fortnite" player on Twitter to implore Phil Spencer, Microsoft's head of games, to add cross-play with Sony's console. "We really want cross-play system between XB1 and PS4," the tweeter said. "Me 2," Mr. Spencer tweeted back minutes later. The next day, the official account for "Fortnite" chimed in: "We 3."

"Fortnite" isn't playable across the two systems because both Sony and Microsoft would need to allow it. Sony declined to comment.

Snap Revamp Vexes Users

Social-media company faces backlash, but history shows change can reap rewards

BY GEORGIA WELLS

Social-media businesses are built on getting people to broadcast their feelings as much as possible. That strategy can cut both ways.

Snap Inc. is battling a backlash from users over a new version of its Snapchat social-media app, which was launched in February and is aimed at broadening its business beyond its core teen and young-adult audience. More than 1.2 million Snapchat users have signed a petition to roll back the revamp. In late February, the company's shares fell about 6% in reaction to this tweet by reality-television celebrity Kylie Jenner: "sooo does anyone else not open Snapchat anymore?"

Separately, on Thursday, pop star Rihanna urged her fans to delete Snapchat because it featured an ad for a mobile game that appeared to mock her relationship with pop star Chris Brown. Snap said the ad was "disgusting" and never should have appeared on its service. Snap's shares dropped 3.6%.

The reaction toward the new app is worrying even Wall Street. Citi analyst Mark May in February downgraded Snap's shares to "sell" from "neutral" in part, he wrote, because of the app redesign. The jump in negative app reviews "could result in a decline in users and user engagement, which could negatively impact financial results," he said.

The fury doesn't appear to be damaging the app's popularity yet. Despite the uproar over the redesign, first-time installs of Snapchat increased about 18% in the month after its launch, compared with the prior approximately month-long period, according to app-research firm Sensor Tower Inc. Users also appear to be spending more time in the premium content section of the app called Discover, according to people close to Snap.


LUCAS JACKSON/REUTERS

Rihanna slammed Snapchat over an ad for a game that mocked her relationship with Chris Brown.

Industry veterans warn that there is often a disconnect between what users say and do. Instead of focusing on what users say, people in the industry say, social-media companies track how frequently users log on and the duration of their visits and how much content they are creating.

History shows that website and app redesigns can pay off: **Facebook** Inc., Instagram (part of Facebook) and **Twitter** Inc. all experienced similar pushback at times, only to see their user numbers grow. For social-media companies with a loyal following, retooling is a challenging step to keep growing.

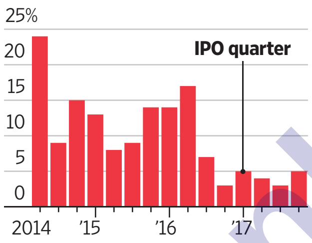
"Everything is at stake," says Mike Hoefflinger, an ex-Facebook executive who wrote a book about the company. "Making the decision between faster horses and the Model T can be the beginning of a decline towards death or a re-energizing towards growth."

When Facebook introduced its news feed in 2006, for example, hundreds of thousands of users emailed Facebook to express their outrage. "Twelve years later, the news feed has proven to be not only the most important feature at Facebook, but also one of the most influential media ever," he says.

Mixed Message

Snap's quarterly growth in daily users has been volatile since 2014.

Change in daily users from previous quarter



Source: the company

THE WALL STREET JOURNAL.

In November, Twitter doubled the length of its tweets to 280 characters, spurring many users to tweet complaints. Three months later, Twitter Chief Executive Jack Dorsey said the extra characters had resulted in fewer people abandoning messages and more retweets.

Tech companies aren't immune from failure, either. In 2013, Facebook announced a new version of its Android app that would replace the phone's home screen with Facebook content. After months of criticism, Facebook Chief Executive Mark Zuckerberg killed the project.

In its February update, Snap rearranged features and streamlined the interface to make it simpler to navigate.

Users said they struggled to find their friends' video and photo montages, and some lost track of their Snapstreaks, threads of messages they reply to every 24 hours.

Snap responded by saying it would make it easier for users to find their stories with a new section of the app, called tabs, but stopped short of promising any rollback to the old version. "We completely understand that the new Snapchat has felt uncomfortable for many," Snap said in its post.


WARNER BROS/EVERETT COLLECTION

'Tomb Raider,' starring Alicia Vikander as adventurer Lara Croft, opened in second place.

'Black Panther' in First Place For Fifth Straight Weekend

Associated Press

NEW YORK—Not since "Avatar" has a box-office hit had the kind of staying power of "Black Panther." Ryan Coogler's comic-book sensation on Sunday became the first film since James Cameron's 2009 smash to top the weekend box office for five straight weekends.

The **Disney** release grossed $27 million in ticket sales over the weekend, according to studio estimates, pushing its domestic haul to $605.4 million. World-wide, "Black Panther" has grossed more than $1.1 billion.

Though "Black Panther" has had little competition to contend with throughout February and March, such consistency is especially rare in today's moviegoing world. Before "Avatar," the last film to do it was 1999's "The Sixth Sense."

That left second place to the **MGM-Warner Bros.** rebooted "Tomb Raider," starring Alicia Vikander as the archaeologist adventurer Lara Croft. The $90 million film opened with $23.5 million, largely failing to stir much excitement among moviegoers. Critics gave it mediocre reviews (49% fresh on Rotten Tomatoes) and ticket-buyers responded with a "meh," giving it a B CinemaScore.

Estimated Box-Office Figures, Through Sunday

FILM	DISTRIBUTOR	SALES, IN MILLIONS: WEEKEND*	CUMULATIVE	% CHANGE
1. Black Panther	Disney	$27	$605.4	-34
2. Tomb Raider	Warner Bros.	$23.5	$23.5	--
3. I Can Only Imagine	Roadside Attractions	$17.1	$17.1	--
4. A Wrinkle in Time	Disney	$16.6	$61.1	-50
5. Love, Simon	Twentieth Century Fox	$11.5	$11.5	--

*Friday, Saturday and Sunday Source: comScore

With Ms. Vikander stepping in for Angelina Jolie, Roar Uthaug's "Tomb Raider" is an attempt to rekindle a videogame-adapted franchise that faded quickly the first time around. The 2001 original opened at $47.7 million and grossed $274.7 million worldwide, but the big-budget 2003 sequel flopped, opening with $21.8 million domestically and grossing $156.5 million worldwide.

Jeff Goldstein, distribution chief for **Warner Bros.**, said "Tomb Raider" came close to studio expectations in North America but that international ticket sales were a primary focus. "Tomb Raider" was No. 1 overseas, grossing $84.5 million, including $41.1 million in China.

The surprise of the weekend was the Lions Gate-Roadside Attractions Christian drama, "I Can Only Imagine," which grossed $17.1 million on 1,629 screens—less than half the number that "Black Panther," "Tomb Raider" and "A Wrinkle in Time" played on. The film, which co-stars Dennis Quaid and Cloris Leachman, cost only $7 million to make. It stars J. Michael Finley as the singer behind one of the most popular Christian songs, by the band MercyMe.

"I Can Only Imagine" doubled expectations by sticking to the typical tactic of "faith-based" releases, with a grassroots marketing effort that focused on Southern, and suburban moviegoers. Eighty percent of the audience was over 35.

Bear Stearns Ex-CEOs Move On

James Cayne has left Wall Street behind but is still mixing it up at the bridge table

BY JUSTIN BAER

A decade after the financial crisis, the U.S. economy is cruising again and the stock market keeps climbing. But for many of the men and women at the center of the extraordinary events that nearly led to the collapse of the U.S. banking system, those frantic days changed their lives permanently.

THE WORLD THE CRISIS CREATED

Some made a name for themselves. Others have retreated from the public eye or sought to reinvent themselves.

*The Wall Street Journal checked in on 48 of the bankers, government officials, chief executives, hedge-fund managers and others who left a mark on the financial crisis to find out what they are doing now. Starting today with former **Bear Stearns** CEOs James Cayne and Alan Schwartz, and for the next few months, we will be sharing their stories.*

—Craig Karmin

REUTERS

James Cayne, left, and Alan Schwartz have taken vastly different paths since leaving Bear Stearns.

James Cayne spent last week more or less as he had a decade ago, when the Wall Street firm he once ran was imploding, playing bridge.

The former Bear Stearns Cos. chairman was in Philadelphia for the spring North American Bridge Championships. Mr. Cayne's squad advanced to the final 16 at the Vanderbilt tournament, a marquee event at the seasonal competition, before bowing out on Thursday.

There was no second act on Wall Street for Mr. Cayne after Bear Stearns collapsed in the spring of 2008. Former Bear Stearns colleagues who have crossed paths with him at bridge events say he splits his time between homes in Florida and New Jersey.

In 2015, two of his teammates were accused by an opponent of cheating. Mr. Cayne responded to the controversy by removing the accused from his team and offering to surrender the points his group had accumulated at the tournament.

Last year, Mr. Cayne sued Wall Street executive Alexandra Lebenthal, alleging she refused to repay fully a $1 million personal loan he had given her in 2008. Ms. Lebenthal, a longtime friend to Mr. Cayne and daughter of renowned bond salesman James Lebenthal, argued she had been manipulated by the former Bear Stearns CEO. A New York judge ruled in his favor in October.

He didn't return calls seeking comment on this article.

"Where he is now is where you'd expect him to be: doing what he loves—playing bridge," his wife, Patricia Cayne, said this week. "He's retired and doing what he loves the best. Actually, it was second best. Bear was first."

Mr. Cayne was already a renowned bridge player when he joined Bear Stearns in 1969, and his skill helped put him on the fast track at a firm whose former chief, Alan "Ace" Greenberg, also played the game.

Mr. Cayne succeeded Mr. Greenberg in the role in 1993. At the time of his retirement, he was Wall Street's longest-serving CEO.

The run ended abruptly. Criticized for his absences during key stretches of the firm's struggles with a deepening credit crisis, Mr. Cayne ceded the post to investment banker Alan Schwartz in January 2008. He remained chairman.

Two months later, Bear Stearns was hemorrhaging cash.

On Sunday, March 16, JPMorgan Chase & Co. stepped in with a rescue bid backed by the U.S. government.

The 85-year-old Bear Stearns didn't fold, but the firm lost its independence.

As executives scrambled to stem the loss of confidence in the days leading up to that deal, "I was playing bridge in Detroit," Mr. Cayne said during a 2010 interview with the Financial Crisis Inquiry Commission.

Mr. Cayne had returned to New York from his tournament for the final discussions over Bear's sale, but his disappearances still cling to a legacy he has done little to rewrite in the decade since.

Last Bear Stearns Chief Takes On Wall Street Goliaths

Alan Schwartz was the last chief executive of Bear Stearns before the venerable securities firm sold itself to **JPMorgan Chase** & Co. as a way of avoiding collapse. A decade later he is trying to challenge Bear Stearns's rescuer as an adviser on megadeals.

From an office a few blocks south of Bear Stearns's old Madison Avenue headquarters, Mr. Schwartz oversees **Guggenheim Partners** LLC's foray into investment banking. The upstart firm hired Mr. Schwartz in 2009 as executive chairman and assembled around him a team of bankers and traders, some of whom also carry scars from the 2008 financial crisis.

Together they are trying to turn Guggenheim into a major force in the investment-banking world dominated by incumbents such as JPMorgan and **Goldman Sachs Group** Inc.

Guggenheim advised on 29 mergers and acquisitions in 2017 with a combined value of $114 billion, 16th among investment banks, according to Dealogic. Five years earlier, Guggenheim had placed at No. 135.

"Building something, instead of just working somewhere, was what lured me to Guggenheim," he said in an interview. "The businesses we are building are ones that can grow for a long period of time."

Mr. Schwartz spent what would be a brief stint as CEO racing to overcome suspicions that Bear Stearns wouldn't survive the worst financial crisis in decades.

By March 2008, Bear Stearns had lost the confidence of investors and clients, forcing Mr. Schwartz to turn to JPMorgan and the U.S. government for help. Mr. Schwartz negotiated the firm's sale to JPMorgan, a deal backed by support from the Federal Reserve.

On Sunday, March 16, 2008, he gathered Bear Stearns employees at the firm's Midtown Manhattan boardroom to deliver the news. Many had spent their entire careers with the firm, known for its scrappy, underdog culture, and had accumulated large holdings of Bear Stearns shares, which had been a top performer during the U.S. housing boom, at one point hitting $159 each.

"We have a deal," he said, "but you're not going to like it."

JPMorgan's final offer: $10 a share. The agreement ended the firm's independence.

Mr. Schwartz said he expects Guggenheim to endure. "Long after I'm gone, it will be a great firm," he said.

U.S. Lifts A Payday Lender Restriction

BY LALITA CLOZEL

WASHINGTON—The Office of the Comptroller of the Currency has lifted a prohibition on partnerships between payday loan chain **ACE Cash Express** Inc. and national banks, as the agency's Trump-appointed head, Joseph Otting, is encouraging financial institutions to offer more small-dollar consumer loans.

The OCC rescinded a 2002 consent order that restricted ACE's ability to offer payday loans funded by nationally chartered banks. "The safe and sound operation of the banking system does not require the continued existence of" those restrictions, the agency said in an order that came last month but was announced publicly Friday.

In addition, an OCC spokesman said in an email that changes in the law have "placed the company under the primary supervision of the Consumer Financial Protection Bureau, which has a current order against the company."

In 2014, the CFPB ordered ACE to pay $10 million in fines and restitution over unfair debt collection practices and other abuses. The CFPB also imposed restrictions on ACE's record-keeping procedures, but did not prohibit the company from partnering with banks.

In its 2002 action, the OCC accused ACE of discarding payday-loan files in a dumpster and engaging in other activities deemed "unsafe and unsound." It slapped the firm with a $250,000 fine and record-keeping requirements.

ACE also was prohibited from joining with national banks to provide payday loans without obtaining prior approval from the OCC. ACE didn't immediately respond for a request to comment.

MARKETS DIGEST

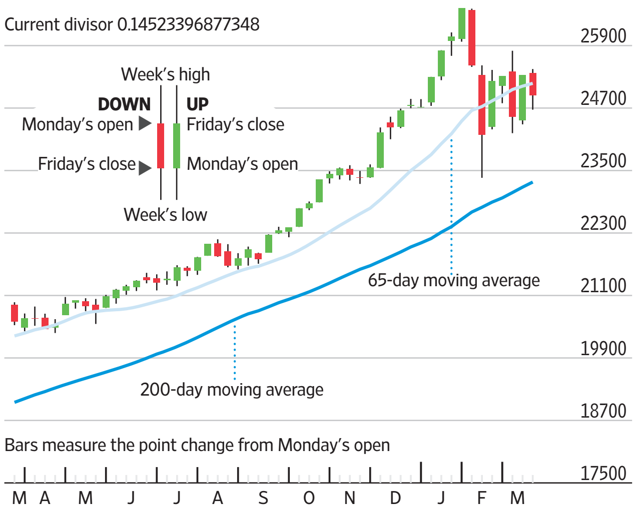
Dow Jones Industrial Average

24946.51 ▼389.23, or 1.54% last week

High, low, open and close for each of the past 52 weeks

	Last	Year ago
Trailing P/E ratio	26.11	21.36
P/E estimate *	16.90	17.92
Dividend yield	2.14	2.33
All-time high	26616.71, 01/26/18	

Current divisor 0.14523396877348



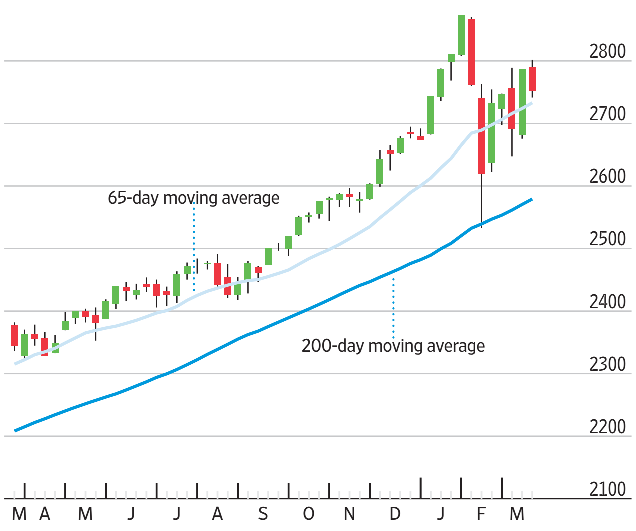
Bars measure the point change from Monday's open

S&P 500 Index

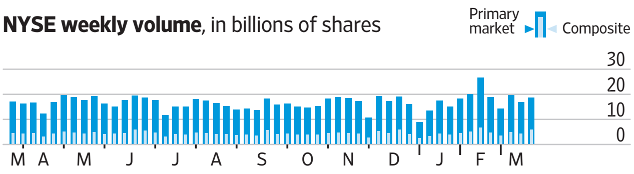
2752.01 ▼34.56, or 1.24% last week

High, low, open and close for each of the past 52 weeks

	Last	Year ago
Trailing P/E ratio *	25.68	24.89
P/E estimate *	17.60	18.35
Dividend yield	1.86	1.97
All-time high	2872.87, 01/26/18	



NYSE weekly volume, in billions of shares



*Weekly P/E data based on as-reported earnings from Birinyi Associates Inc.

Financial Flashback

The Wall Street Journal, March 19, 1987

Fleet Financial Group and Norstar Bancorp agreed to merge in a stock swap valued at about $1.3 billion in what was then the largest banking combination ever.

Major U.S. Stock-Market Indexes

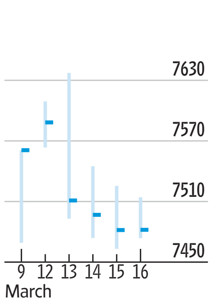
	Latest Week High	Low	Close	Net chg	% chg	52-Week Low	Close (●)	High	% chg	% chg YTD	3-yr. ann.
Dow Jones											
Industrial Average	25449.15	24668.83	**24946.51**	-389.23	**-1.54**	20404.49		26616.71	**19.3**	0.9	**11.5**
Transportation Avg	10837.51	10548.50	**10683.82**	-56.09	**-0.52**	8783.74		11373.38	**16.8**	0.7	**5.5**
Utility Average	692.67	671.25	**691.82**	19.54	**2.91**	647.90		774.47	**-0.7**	-4.4	**5.9**
Total Stock Market	28996.83	28379.96	**28505.36**	-328.04	**-1.14**	24125.20		29630.47	**15.6**	3.0	**9.4**
Barron's 400	747.47	730.35	**735.91**	-5.34	**-0.72**	610.89		757.37	**16.9**	3.5	**9.3**
Nasdaq Stock Market											
Nasdaq Composite	7637.27	7463.18	**7481.99**	-78.82	**-1.04**	5793.83		7588.32	**26.8**	8.4	**14.9**
Nasdaq 100	7186.09	7010.01	**7019.95**	-81.23	**-1.14**	5332.53		7131.12	**29.8**	9.7	**17.1**
S&P											
500 Index	2801.90	2741.47	**2752.01**	-34.56	**-1.24**	2328.95		2872.87	**15.7**	2.9	**9.8**
MidCap 400	1960.21	1918.43	**1935.65**	-13.41	**-0.69**	1681.04		1995.23	**11.8**	1.8	**8.7**
SmallCap 600	979.52	958.09	**969.45**	-0.81	**-0.08**	815.62		979.57	**14.1**	3.5	**10.9**
Other Indexes											
Russell 2000	1609.05	1572.16	**1586.05**	-11.09	**-0.69**	1345.24		1610.71	**14.0**	3.3	**8.6**
NYSE Composite	12963.42	12722.93	**12784.39**	-134.43	**-1.04**	11324.53		13637.02	**10.3**	-0.2	**5.5**
Value Line	572.09	559.63	**564.37**	-4.34	**-0.76**	503.24		589.69	**8.2**	0.4	**3.6**
NYSE Arca Biotech	4931.10	4781.84	**4792.11**	-82.43	**-1.69**	3449.61		4939.86	**34.2**	13.5	**4.7**
NYSE Arca Pharma	553.41	544.54	**548.48**	-1.51	**-0.27**	498.46		593.12	**6.7**	0.7	**-1.2**
KBW Bank	116.53	112.05	**112.92**	-3.18	**-2.74**	88.02		116.52	**18.4**	5.8	**15.2**
PHLX§ Gold/Silver	80.49	78.12	**78.70**	-0.20	**-0.25**	76.42		93.26	**-4.7**	-7.7	**6.3**
PHLX§ Oil Service	141.15	133.56	**137.43**	-2.17	**-1.56**	117.79		171.55	**-18.2**	-8.1	**-9.2**
PHLX§ Semiconductor	1464.61	1410.60	**1422.54**	-8.62	**-0.60**	960.01		1445.9	**41.6**	13.5	**25.6**
CBOE Volatility	17.59	14.94	**15.80**	1.16	**7.92**	9.14		37.32	**40.1**	43.1	**0.4**

§Nasdaq PHLX

Sources: SIX Financial Information; WSJ Market Data Group

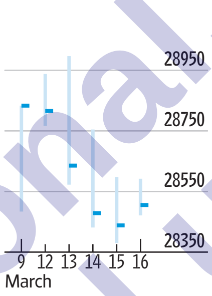
Nasdaq Composite

▼ 78.82, or -1.04% last week



DJ US TSM

▼ 328.04, or -1.14% last week



International Stock Indexes

Region/Country	Index	Latest Week Close	% chg	52-Week Range Low	Close	High	YTD % chg
World	**The Global Dow**	3122.20	**–0.67**	2647.00		3323.74	1.2
	DJ Global Index	404.34	**–0.50**	343.54		425.41	1.8
	DJ Global ex U.S.	268.35	**0.19**	228.10		285.34	0.6
Americas	**DJ Americas**	658.23	**–1.22**	562.20		687.75	2.5
Brazil	**Sao Paulo Bovespa**	84886.49	**–1.72**	60761.74		87652.64	11.1
Canada	**S&P/TSX Comp**	15711.33	**0.86**	14951.88		16412.94	–3.1
Mexico	**S&P/BMV IPC**	47477.58	**–2.22**	46973.30		51713.38	–3.8
Chile	**Santiago IPSA**	4228.16	**–0.72**	3593.92		4442.56	0.4
EMEA	**Stoxx Europe 600**	377.71	**–0.14**	367.04		402.81	–2.9
	Stoxx Europe 50	3015.58	**–0.03**	2940.84		3276.11	–5.1
Eurozone	**Euro Stoxx**	381.60	**0.03**	364.55		404.86	–1.0
	Euro Stoxx 50	3437.40	**0.49**	3324.75		3697.40	–1.9
Austria	**ATX**	3443.71	**–1.20**	2799.12		3688.78	0.7
Belgium	**Bel-20**	3961.55	**–0.64**	3730.01		4176.88	–0.4
France	**CAC 40**	5282.75	**0.16**	4990.25		5541.99	–0.6
Germany	**DAX**	12389.58	**0.35**	11904.12		13559.60	–4.1
Greece	**Athex Composite**	813.91	**–0.93**	635.66		886.54	1.4
Israel	**Tel Aviv**	1504.95	**1.59**	1363.50		1549.87	–0.3
Italy	**FTSE MIB**	22857.69	**0.49**	19443		23890	4.6
Netherlands	**AEX**	536.92	**–0.04**	507.15		570.82	–1.4
Portugal	**PSI 20**	5435.94	**0.22**	4613.88		5791.88	0.9
Russia	**RTS Index**	1254.29	**–2.43**	973.33		1324.62	8.7
South Africa	**FTSE/JSE All-Share**	58101.02	**–1.81**	50831.89		61684.77	–2.4
Spain	**IBEX 35**	9761.00	**0.77**	9531.1		11135.4	–2.8
Sweden	**SX All Share**	571.55	**–0.88**	545.83		600.20	0.5
Switzerland	**Swiss Market**	8882.53	**–0.55**	8529.28		9611.61	–5.3
U.K.	**FTSE 100**	7164.14	**–0.84**	7069.90		7778.64	–6.8
Asia-Pacific							
Australia	**S&P/ASX 200**	5949.40	**–0.23**	5651.8		6135.8	–1.9
China	**Shanghai Composite**	3269.88	**–1.13**	3052.79		3559.47	–1.1
Hong Kong	**Hang Seng**	31501.97	**1.63**	23825.88		33154.12	5.3
India	**S&P BSE Sensex**	33176.00	**–0.39**	29167.68		36283.25	–2.6
Japan	**Nikkei Stock Avg**	21676.51	**0.97**	18335.63		24124.15	–4.8
Malaysia	**FTSE Bursa Malaysia KLCI**	1846.39	**0.13**	1713.13		1871.46	2.8
Singapore	**Straits Times**	3512.14	**0.76**	3118.19		3609.24	3.2
South Korea	**Kospi**	2493.97	**1.40**	2123.85		2598.19	1.1
Taiwan	**Weighted**	11027.70	**1.50**	9632.69		11253.11	3.6

Source: SIX Financial Information; WSJ Market Data Group

Commodities and Currencies

	Last Week Close	Net chg	% Chg	YTD % chg
DJ Commodity	**628.83**	-3.12	**-0.49**	0.55
TR/CC CRB Index	**194.46**	-0.69	**-0.36**	0.30
Crude oil, $ per barrel	**62.34**	0.30	**0.48**	3.18
Natural gas, $/MMBtu	**2.688**	-0.044	**-1.61**	-8.97
Gold, $ per troy oz.	**1311.30**	-11.10	**-0.84**	0.38
U.S. Dollar Index	**90.18**	0.09	**0.10**	-2.11
WSJ Dollar Index	**83.96**	0.14	**0.16**	-2.35
Euro, per dollar	**0.8136**	0.0011	**0.13**	-2.34
Yen, per dollar	**105.98**	-0.83	**-0.78**	-5.97
U.K. pound, in dollars	**1.39**	0.0096	**0.69**	3.19

	52-Week Low	Close (●)	High	% Chg
DJ Commodity	532.01		645.87	**11.42**
TR/CC CRB Index	166.50		200.52	**5.41**
Crude oil, $ per barrel	42.53		66.14	**27.80**
Natural gas, $/MMBtu	2.55		3.63	**-8.82**
Gold, $ per troy oz.	1208.60		1362.40	**6.63**
U.S. Dollar Index	88.59		101.13	**-10.10**
WSJ Dollar Index	82.70		90.93	**-7.28**
Euro, per dollar	0.80		0.94	**-12.64**
Yen, per dollar	105.74		114.29	**-5.95**
U.K. pound, in dollars	1.24		1.43	**12.48**

New to the Market
Public Offerings of Stock
IPOs in the U.S. Market

Initial public offerings of stock expected this week; might include some offerings, U.S. and foreign, open to institutional investors only via the Rule 144a market; deal amounts are for the U.S. market only

Expected pricing date	Filed	Issuer/business	Symbol/ primary exchange	Shares (mil.)	Pricing Range($) Low/High	Bookrunner(s)
3/22	2/23	Dropbox Provides cloud-based file-hosting services.	**DBX** Nq	**36.0**	16.00/ 18.00	GS, JPM, DB, Allen & Co, BofA ML
3/22	2/8	PolyPid Pharmaceutical company.	**POLY** Nq	**3.3**	21.00/ 24.00	GS, Cowen & Co, Cantor Fitzgerald & Co
3/22	2/23	Sunlands Online Education Group Provides online post-secondary & professional education.	**STG** N	**5.2**	11.50/ 13.50	GS, JPM, Credit Suisse

Lockup Expirations

Below, companies whose officers and other insiders will become eligible to sell shares in their newly public companies for the first time. Such sales can move the stock's price.

Lockup expiration	Issue date	Issuer	Symbol	Offer price($)	Offer amt ($ mil.)	Through Friday (%)	Lockup provision
March 19	Sept. 20, '17	Zai Lab	**ZLAB**	18.00	172.5	**16.8**	180 days
March 20	Sept. 21, '17	Secoo Holding	**SECO**	13.00	110.5	**–13.7**	180 days
	Sept. 21, '17	TDH Holdings	**PETZ**	4.25	6.5	**8.5**	180 days
March 25	Sept. 26, '17	RYB Education	**RYB**	18.50	166.0	**–3.9**	180 days

Sources: Dealogic; WSJ Market Data Group

IPO Scorecard

Performance of IPOs, most-recent listed first

Company SYMBOL IPO date/Offer price	Friday's close ($)	% Chg From Offer price	1st-day close	Company SYMBOL IPO date/Offer price	Friday's close ($)	% Chg From Offer price	1st-day close
Senmiao Technology **AIHS** March 16/$4.00	5.65	**41.3**	...	BioXcel Thera **BTAI** March 8/$11.00	10.87	**–1.2**	–1.5
Zscaler **ZS** March 16/$16.00	33.00	**106.3**	...	Union Acquisition **LTN.U** Feb. 28/$10.00	10.04	**0.4**	0.3
Arcus Biosciences **RCUS** March 15/$15.00	17.60	**17.3**	3.5	Farmmi **FAMI** Feb. 16/$4.00	6.55	**63.8**	6.0
Bridgewater Bancshares **BWB** March 14/$11.75	12.86	**9.4**	1.9	DFB Healthcare Acquisitions **DFBHU** Feb. 16/$10.00	10.19	**1.9**	1.9
Opes Acquisition **OPESU** March 14/$10.00	10.03	**0.3**	0.1	Biofrontera **BFRA** Feb. 14/$9.98	17.20	**72.3**	41.2

Sources: WSJ Market Data Group; FactSet Research Systems

Other Stock Offerings

Secondaries and follow-ons expected this week in the U.S. market

None expected this week

Off the Shelf

"Shelf registrations" allow a company to prepare a stock or bond for sale, without selling the whole issue at once. Corporations sell as conditions become favorable. Here are the shelf sales, or takedowns, over the last week:

Issuer/Industry	Takedown date/ Registration date	Deal value ($ mil.)	Registration (mil.)	Bookrunner(s)
Vanda Pharmaceuticals Healthcare	March 15 July 6,'15	**$93.5**	$150.0	Citi, Jefferies, Stifel
Invuity Healthcare	March 15 July 1,'16	**$21.7**	$100.0	W. Blair
RGC Resources Utility & Energy	March 15 Aug. 10,'17	**$14.0**	$50.0	BB&T Cptil Mrkts, Janney Montgomery Scott
Hilton Grand Vacations Dining & Lodging	March 14 March 13,'18	**$1,029.1**	...	BofA ML, JPM, UBS, GS, DB, Credit Suisse, SunTrust
ABM Industries Construction/Building	March 14 Feb. 26,'18	**$322.1**	$331.7	GS, UBS
La Jolla Pharmaceutical Healthcare	March 14 Oct. 27,'17	**$100.3**	$150.0	Cowen & Co
CatchMark Timber Trust Real Estate/Property	March 14 June 2,'17	**$63.0**	$600.0	Raymond James & Assoc, Citi, Stifel, RBC Cptl Mkts
Black Knight Technology	March 13 May 8,'17	**$343.0**	...	GS
Apollo Commercial Real Estate Finance Real Estate/Property	March 13 May 7,'15	**$279.5**	...	JPM, MS, BofA ML, Citi, DB
Agree Realty Real Estate/Property	March 13 June 2,'17	**$144.0**	...	Citi
Helix Energy Solutions Group Oil & Gas	March 13 Oct. 26,'16	**$125.0**	...	WFS, BofA ML
Rapid7 Technology	March 13 May 23,'17	**$52.5**	$387.3	Barclays
Sabre Technology	March 12 May 18,'15	**$336.8**	...	MS
BlackLine Technology	March 12 Nov. 13,'17	**$332.0**	$1,275.8	MS
Moelis & Co Finance	March 12 Nov. 25,'16	**$255.0**	$576.6	GS, UBS
Houlihan Lokey Finance	March 12 Oct. 20,'17	**$189.0**	...	MS

Public and Private Borrowing
Treasurys

Monday, March 19
Auction of 13 and 26 week bills;
announced on March 15; settles on March 22

Tuesday, March 20
Auction of 4 week bill;
announced on March 19; settles on March 22

Thursday, March 22
Auction of 10 year TIPS;
announced on March 15; settles on March 29

Public and Municipal Finance

Deals of $150 million or more expected this week

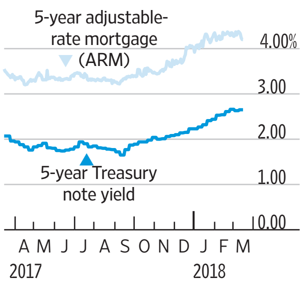
Sale	Final maturity	Issuer	Total ($mil.)	Rating Fitch	Moody's	S&P	Bookrunner/ Bond Counsel(s)
March 20	Oct. 1, 2047	Anne Arundel Co-Maryland	263.7	N.R.	N.R.	N.R.	Preliminary/ McKennon Shelton & Henn
March 20	June 15, 2037	San Francisco City/Co-California	251.3	N.R.	N.R.	N.R.	Preliminary/ Norton Rose Fulbright
March 23	prelim.	Los Angeles Dept of Airports	230.5	N.R.	N.R.	N.R.	Ramirez & Co Inc/—

Source: Thomson Reuters/Ipreo

Consumer Rates and Returns to Investor

U.S. consumer rates

A consumer rate against its benchmark over the past year



Selected rates

Five-year ARM, Rate

Bankrate.com avg†:	4.20%
American Airlines Federal Credit Union	2.88%
Ft Worth, TX	800-533-0035
Foxboro Federal Savings	3.00%
Foxboro, MA	877-369-3331
Family Federal Savings	3.25%
Fitchburg, MA	978-353-0000
United Teletech Financial	3.25%
Tinton Falls, NJ	732-530-8100
Third Federal Savings and Loan	3.29%
Cleveland, OH	866-627-1785

Interest rate	Yield/Rate (%) Last (●)	Week ago	52-Week Range (%) Low	High	3-yr chg (pct pts)
Federal-funds rate target	**1.25-1.50**	1.25-1.50	0.75	1.50	**1.25**
Prime rate*	**4.50**	4.50	4.00	4.50	**1.25**
Libor, 3-month	**2.20**	2.09	1.15	2.20	**1.93**
Money market, annual yield	**0.34**	0.30	0.25	0.36	**-0.08**
Five-year CD, annual yield	**1.64**	1.62	1.27	1.64	**0.14**
30-year mortgage, fixed†	**4.41**	4.46	3.73	4.48	**0.41**
15-year mortgage, fixed†	**3.88**	3.90	2.99	3.94	**0.68**
Jumbo mortgages, $424,100-plus†	**4.71**	4.74	4.21	4.96	**0.27**
Five-year adj mortgage (ARM)†	**4.20**	4.35	3.20	4.38	**0.44**
New-car loan, 48-month	**3.55**	3.54	2.85	3.60	**0.51**

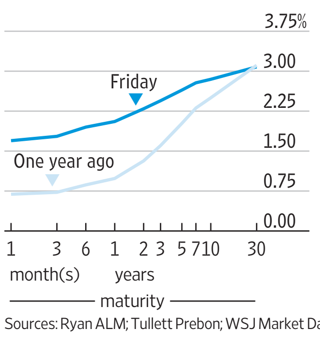
Bankrate.com rates based on survey of over 4,800 online banks. *Base rate posted by 70% of the nation's largest banks. † Excludes closing costs.

Sources: SIX Financial Information; WSJ Market Data Group; Bankrate.com

Benchmark Yields and Rates

Treasury yield curve

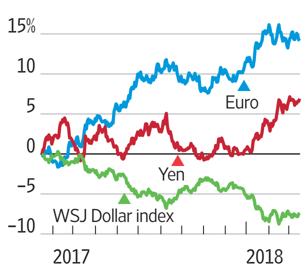
Yield to maturity of current bills, notes and bonds



Sources: Ryan ALM; Tullett Prebon; WSJ Market Data Group

Forex Race

Yen, euro vs. dollar; dollar vs. major U.S. trading partners



Corporate Borrowing Rates and Yields

Bond total return index	Yield (%) Last	Wk ago	Spread +/- Treasurys, in basis pts, 52-wk Range Last	Low	High	Total Return 52-wk	3-yr
10-yr Treasury, Ryan ALM	**2.848**	2.894				-0.83	-0.30
DJ Corporate	**3.746**	3.747				2.53	2.36
Aggregate, Barclays Capital	**3.170**	3.180	n.a.	34	45	1.44	1.31
High Yield 100, Merrill Lynch	**6.105**	6.059	343	304	394	3.758	3.794
Fixed-Rate MBS, Barclays	**3.340**	3.380	n.a.	20	34	1.01	1.14
Muni Master, Merrill	**2.488**	2.480	14	5	18	2.564	1.929
EMBI Global, J.P. Morgan	**6.001**	5.997	316	289	339	3.704	6.221

Sources: J.P. Morgan; Ryan ALM; S&P Dow Jones Indices; Barclays Capital; Merrill Lynch

A Week in the Life of the DJIA

A look at how the Dow Jones Industrial Average component stocks did in the past week and how much each moved the index. The DJIA lost 389.23 points, or 1.54%, on the week. A $1 change in the price of any DJIA stock = 6.89-point change in the average. To date, a $1,000 investment on Dec. 31 in each current DJIA stock component would have returned $30,135, or a gain of 0.45%, on the $30,000 investment, including reinvested dividends.

The Week's Action Pct chg (%)	Stock price change	Point chg in average*	Company	Symbol	Close	$1,000 Invested (year-end '17)
3.26	5.12	35.25	**McDonald's**	MCD	$162.36	$949
1.08	2.43	16.73	**UnitedHealth Group**	UNH	227.86	1,037
0.96	0.53	3.65	**Merck**	MRK	55.67	998
0.75	0.56	3.86	**Exxon Mobil**	XOM	75.12	907
0.60	0.95	6.54	**IBM**	IBM	160.26	1,055
0.51	0.45	3.10	**WalMart**	WMT	89.17	908
0.03	0.01	0.07	**Pfizer**	PFE	36.78	1,025
0.02	0.02	0.14	**Visa**	V	124.53	1,094
-0.09	-0.12	-0.83	**Johnson & Johnson**	JNJ	133.68	963
-0.59	-0.39	-2.69	**Nike**	NKE	65.91	1,057
-0.69	-0.98	-6.75	**Travelers**	TRV	141.32	1,047
-0.79	-0.36	-2.48	**Cisco Systems**	CSCO	45.01	1,184
-0.92	-0.45	-3.10	**Verizon**	VZ	48.56	928
-1.09	-1.96	-13.50	**Apple**	AAPL	178.02	1,056
-1.13	-1.79	-12.32	**Caterpillar**	CAT	156.46	997
-1.17	-3.17	-21.83	**Goldman Sachs**	GS	267.60	1,053
-1.55	-1.82	-12.53	**Chevron**	CVX	115.40	931
-1.64	-1.32	-9.09	**Procter & Gamble**	PG	78.97	866
-1.71	-4.13	-28.44	**3M**	MMM	237.22	1,014
-1.76	-3.20	-22.03	**Home Depot**	HD	178.96	950
-1.78	-1.86	-12.81	**Walt Disney**	DIS	102.87	957
-1.95	-1.02	-7.02	**Intel**	INTC	51.17	1,116
-2.01	-1.94	-13.36	**Microsoft**	MSFT	94.60	1,111
-2.20	-2.60	-17.90	**JPMorgan Chase**	JPM	115.44	1,085
-3.03	-1.36	-9.36	**Coca-Cola**	KO	43.46	956
-3.47	-3.44	-23.69	**American Express**	AXP	95.61	966
-4.22	-0.63	-4.34	**General Electric**	GE	14.31	827
-4.28	-5.74	-39.52	**United Technologies**	UTX	128.33	1,011
-5.91	-4.27	-29.40	**DowDuPont**	DWDP	67.96	959
-6.78	-24.05	-165.59	**Boeing**	BA	330.47	1,126

*Based on Composite price. DJIA is calculated on primary-market price.
Source: WSJ Market Data Group; FactSet.

CLOSED-END FUNDS

wsj.com/funds

Listed are the 300 largest closed-end funds as measured by assets. Closed-end funds sell a limited number of shares and invest the proceeds in securities. Unlike open-end funds, closed-ends generally do not buy their shares back from investors who wish to cash in their holdings. Instead, fund shares trade on a stock exchange. **NA** signifies that the information is not available or not applicable. **NS** signifies fund not in existence of entire period. 12 month yield is computed by dividing income dividends paid (during the previous twelve months for periods ending at month-end or during the previous fifty-two weeks for periods ending at any time other than month-end) by the latest month-end market price adjusted for capital gains distributions.

Source: Lipper

Friday, March 16, 2018

Fund (SYM)	NAV	Close	Prem/Disc	52 wk Ttl Ret
General Equity Funds				
Adams Divers Equity Fd **ADX**	18.09	15.36	-15.1	22.0
Boulder Growth & Income **BIF**	13.16	11.16	-15.2	22.8
Central Securities **CET**	33.46	27.62	-17.5	21.1
CohSteer Opprtnty Fd **FOF**	13.66	12.69	-7.1	11.3
Cornerstone Strategic **CLM**	13.34	15.56	+16.6	19.7
Cornerstone TR Fd **CRF**	12.98	15.50	+19.4	19.9
EtnVnc TaxAdvDiv **EVT**	23.56	22.55	-4.3	13.9
Gabelli Dividend & Incm **GDV**	24.60	22.82	-7.2	15.5
Gabelli Equity Trust **GAB**	6.46	6.25	-3.3	16.0
Genl American Investors **GAM**	41.19	34.84	-15.4	13.3
Guggenheim Enh Fd **GPM**	8.81	8.67	-1.6	19.5
HnckJohn TxAdv **HTD**	23.64	21.80	-7.8	-2.1
Liberty All-Star Equity **USA**	6.97	6.39	-8.3	28.5
Royce Micro-Cap **RMT**	10.69	9.60	-10.2	23.9
Royce Value Trust **RVT**	17.66	15.93	-9.8	20.7
Source Capital **SOR**	46.00	41.65	-9.5	13.6
Tri-Continental **TY**	30.64	27.24	-11.1	23.0
Specialized Equity Funds				
Adams Natural Rscs Fd **PEO**	21.78	18.36	-15.7	1.2
AllnzGl NFJ Div Interest **NFJ**	14.82	12.98	-12.4	9.4
AlpnGlblPrProp **AWP**	7.09	6.44	-9.2	26.2
BlkRk Enh Cap Inco **CII**	17.11	16.16	-5.6	20.0
BlkRk Engy Res Tr **BGR**	14.31	13.30	-7.1	5.5
BlackRock Enh Eq Div Tr **BDJ**	9.81	9.01	-8.2	13.3
BlackRock Enh Gl Div Tr **BOE**	12.68	11.76	-7.3	13.3
BlkRk Intl Grwth&Inco **BGY**	6.75	6.18	-8.4	14.8
BlkRk Health Sci **BME**	36.43	35.94	-1.3	12.0
BlackRck Rscs Comm Str Tr **BCX**	9.95	9.09	-8.6	15.7
BlackRock Science & Tech **BST**	31.28	31.91	+2.0	68.0
BlackRock Utilities Infr **BUI**	20.22	19.64	-2.9	7.0
CBREClarionGlblRlEstIncm **IGR**	8.53	7.47	-12.4	9.0
Sprott Physical Gold **CEF**	NA	13.15	NA	4.5
ClearBridge Amer Engy **CBA**	NA	7.29	NA	-15.5
ClearBridge Engy MLP Fd **CEM**	NA	13.60	NA	-9.0
Clearbridge Engy MLP Opp **EMO**	NA	10.45	NA	-11.3
Clearbridge Engy MLP TR **CTR**	NA	10.56	NA	-10.8
Cohen & Steers Infr Fd **UTF**	24.19	21.55	-10.9	10.0
C&S MLP Incm & Engy Opp **MIE**	9.98	9.54	-4.4	-5.6
Cohen & Steers Qual Inc **RQI**	12.31	12.20	-0.9	7.0
CohnStrsPfdInco **RNP**	21.30	19.01	-10.8	6.6
Cohen & Steers TR **RFI**	12.42	12.18	-1.9	6.4
CLSeligmn Prem Tech Gr Fd **STK**	23.19	23.68	+2.1	29.1
Duff & Phelps **DNP**	8.90	10.32	+15.9	4.3
Duff&PhelpsGblUtilIncFd **DPG**	15.70	14.22	-9.4	-3.1
Eaton Vance Eqty Inco Fd **EOI**	15.39	14.42	-6.3	18.5
Eaton Vance Eqty Inco II **EOS**	16.82	16.46	-2.1	29.7
EtnVncRskMngd **ETJ**	9.97	9.22	-7.5	9.7
Etn Vnc Tax Mgd Buy-Write **ETB**	16.10	16.23	+0.8	6.8
Eaton Vance BuyWrite Opp **ETV**	15.15	15.53	+2.5	9.9
Eaton Vance Tax-Mng Div **ETY**	12.44	11.95	-3.9	16.5
Eaton Vance Tax-Mngd Opp **ETW**	11.58	11.91	+2.8	19.6
EtnVncTxMngGlDvEqInc **EXG**	9.41	9.16	-2.7	18.6
Fiduciary/Clymr Opp Fd **FMO**	11.49	11.50	+0.1	-14.9
FT Energy Inc & Growth Fd **FEN**	22.39	22.92	+2.4	-8.5
FstTrEnhEqtIncFd **FFA**	16.73	15.45	-7.7	15.0
First Tr Engy Infr Fd **FIF**	16.35	15.66	-4.2	-9.7
First Tr MLP & Engy Incm **FEI**	12.95	12.97	+0.2	-13.0
Gabelli Hlthcr & Well **GRX**	11.53	9.87	-14.4	1.9
Gabelli Utility Tr **GUT**	4.87	6.92	+42.1	16.5
GAMCOGlblGoldNatRscs&Inc **GGN**	5.01	4.85	-3.3	3.0
Goldman Sachs MLP Inc Opp **GMZ**	NA	8.30	NA	-12.0
Goldman Sachs MLP Energy **GER**	NA	6.02	NA	-14.9
John Hancock Finl Opps Fd **BTO**	39.22	40.33	+2.8	15.8
Macquarie Glbl Infrstrctr **MGU**	25.52	22.49	-11.9	8.7
Neuberger Berman MLP Incm **NML**	8.90	8.50	-4.5	-6.9
Neubrgr Brm Rl Est Sec Fd **NRO**	5.06	4.84	-4.3	2.6
Nuveen Dow 30 Dynamic **DIAX**	18.72	17.93	-4.2	20.6
Nuveen Core Eq Alpha **JCE**	15.07	14.76	-2.1	24.8
Nuveen Diversified Div **JDD**	12.19	11.99	-1.6	12.7
Nuveen Engy MLP Fd **JMF**	10.67	10.45	-2.1	-12.0
Nuv NASDAQ 100 Dyn Over **QQQX**	23.81	25.46	+6.9	29.1
Nuveen Real Est Incm Fd **JRS**	10.22	9.74	-4.7	-3.3
Nuveen Real Asset Income **JRI**	18.60	16.47	-11.5	5.0
Nuv S&P 500 Dyn Overwrite **SPXX**	NA	17.30	NA	21.5
Nuveen S&P 500 Buy-Write **BXMX**	13.94	13.47	-3.4	7.8
Reaves Utility Fund **UTG**	31.43	28.59	-9.0	-6.2
Tekla Hlthcr Investors **HQH**	24.79	22.96	-7.4	3.9
Tekla Healthcare Opps Fd **THQ**	19.34	17.36	-10.2	8.0
Tekla Life Sciences **HQL**	20.99	20.16	-4.0	13.6
Tekla World Hlthcr Fd **THW**	14.53	13.46	-7.4	1.7
Tortoise Energy **TYG**	24.98	26.01	+4.1	-12.1
Tortoise MLP Fund **NTG**	15.99	16.71	+4.5	-6.9
Voya Gl Equity Div **IGD**	8.00	7.40	-7.5	12.4
Income & Preferred Stock Funds				
Calamos Strat Fd **CSQ**	13.21	12.26	-7.2	19.9
Cohen & Steers Dur Pfd **LDP**	26.72	25.62	-4.1	7.7
Cohen & Strs Sel Prf Inco **PSF**	27.10	26.34	-2.8	6.3
FT Interm Duration Pfd **FPF**	24.35	23.23	-4.6	8.2
Flaherty & Crumrine Dyn **DFP**	25.66	24.78	-3.4	9.2
Flaherty & Crumrine Pfd **FFC**	20.00	19.01	-5.0	1.6
John Hancock Pfd Income **HPI**	21.00	20.65	-1.7	6.5
John Hancock Pfd II **HPF**	20.73	20.17	-2.7	4.4
John Hancock Pfd Inc III **HPS**	18.50	17.64	-4.6	4.2
JHancock Pr Div **PDT**	14.44	15.01	+3.9	5.9
LMP Cap & Inco Fd **SCD**	NA	13.26	NA	2.1
Nuveen Pfd & Incm Opps Fd **JPC**	10.45	9.84	-5.8	8.3
Nuveen Pfd & Incm Secs Fd **JPS**	10.09	9.54	-5.5	7.8
Nuveen Preferred & Incm **JPI**	25.23	23.75	-5.9	7.2
Nuv Tax-Adv Div Gr **JTD**	17.72	16.94	-4.4	23.5
TCW Strategic Income Fund **TSI**	NA	5.50	NA	4.6
Virtus Global Dividend **ZTR**	11.28	11.21	-0.6	8.0
Convertible Sec's. Funds				
AdvntClymrFd **AVK**	17.57	15.71	-10.6	10.5
AllianzGI Conv & Incm **NCV**	6.48	6.81	+5.1	16.0
AllianzGI Conv & Incm II **NCZ**	5.81	6.03	+3.8	14.9
AllianzGI Equity & Conv **NIE**	23.98	21.49	-10.4	20.7
Calamos Conv Hi Inco Fd **CHY**	11.93	11.85	-0.7	16.5
Calamos **CHI**	11.29	11.25	-0.4	14.7
World Equity Funds				
Alpine Tot Dyn Div **AOD**	10.24	9.43	-7.9	23.1
Calamos Glbl Dyn Inc **CHW**	9.25	9.24	-0.1	31.5
Cdn Genl Inv **CGI**	34.54	24.25	-29.8	21.6
China Fund **CHN**	25.60	22.89	-10.6	40.7
Clough Global Opp Fd **GLO**	12.57	11.18	-11.1	22.0
EtnVncTxAdvGblDiv **ETG**	18.60	17.15	-7.8	17.9
EatonVance TxAdv Opport **ETO**	24.90	25.71	+3.2	17.6
First Trust Dynamic Eur **FDEU**	18.81	18.29	-2.8	16.3
Gabelli Glbl Multimedia **GGT**	9.39	9.75	+3.8	34.6
GDL Fund **GDL**	11.39	9.46	-16.9	0.9
India Fund **IFN**	28.36	25.11	-11.5	15.3
Japan Sml Cap **JOF**	14.11	12.44	-11.8	36.7
Korea Fund **KF**	47.75	41.78	-12.5	30.0
Mexico Fund **MXF**	NA	16.14	NA	4.0
Morgan-Stanley Asia-Pac **APF**	21.58	18.74	-13.2	25.8
MS China a Shr Fd **CAF**	29.91	25.35	-15.2	44.6
MS Emerging Fund **MSF**	21.16	18.70	-11.6	28.7
MS India Invest **IIF**	34.85	31.06	-10.9	17.4
New Germany Fund **GF**	22.05	19.93	-9.6	45.1
Swiss Helvetia Fund **SWZ**	13.89	12.70	-8.6	11.7
Templeton Dragon **TDF**	26.64	22.97	-13.8	36.8
Templeton Emerging **EMF**	19.02	16.82	-11.6	29.3
Virtus Total Return Fund **ZF**	11.61	11.20	-3.5	9.0
Voya Infr Indls & Matls **IDE**	16.42	15.40	-6.2	15.9
Wells Fargo Gl Div Opp **EOD**	6.19	5.72	-7.6	12.0

Fund (SYM)	NAV	Close	Prem/Disc	12 Mo Yld
U.S. Mortgage Bond Funds				
BlackRock Income Trust **BKT**	6.41	5.88	-8.3	5.3
Nuveen Mtg Opp Term Fd **JLS**	24.42	23.71	-2.9	7.7
Investment Grade Bond Funds				
Blackrock Core Bond Tr **BHK**	14.25	13.10	-8.1	5.9
BlkRk Credit Alloc Incm **BTZ**	14.30	12.57	-12.1	6.5
John Hancock Income Secs **JHS**	14.76	14.04	-4.9	5.6
MFS Inc Tr **MIN**	4.23	3.89	-8.0	9.8
WstAstClymr InfLnkd Fd **WIW**	NA	11.35	NA	3.7
WstAssetClymr InflLnk Sec **WIA**	NA	11.48	NA	3.5
Loan Participation Funds				
Apollo Sr Fltg Rate Fd **AFT**	17.89	16.56	-7.4	6.5
BlkRk Debt Strat Fd **DSU**	12.61	11.62	-7.9	7.1
BlackRock FR Incm Strat **FRA**	14.98	14.57	-2.7	5.0
Blkrk FltRt InTr **BGT**	14.44	14.12	-2.2	5.0
BlackstoneGSO Strat Cred **BGB**	17.04	15.98	-6.2	7.9
Blackstone GSO Sr Float **BSL**	17.84	18.14	+1.7	6.5
Eagle Point Credit **ECC**	NA	17.90	NA	14.4
Eaton Vance FR Incm Tr **EFT**	NA	14.88	NA	5.6
EatonVnc SrFltRate **EFR**	NA	14.74	NA	5.8
Eaton Vance Sr Incm Tr **EVF**	NA	6.59	NA	5.5
First Trust Sr FR Fd II **FCT**	14.08	12.98	-7.8	6.0
FT Sr Floating Rate 2022 **FIV**	9.69	9.39	-3.1	5.3
Highland FR Opps Fd **HFRO**	15.26	NA	NA	NA
Invesco Credit Opps Fund **VTA**	13.11	11.66	-11.1	7.1
Invesco Senior Income Tr **VVR**	4.90	4.41	-10.0	5.7
Nuveen Credit Strt Inc Fd **JQC**	9.05	7.96	-12.0	7.4
NuvFloatRteInco Fd **JFR**	11.49	10.90	-5.1	7.3
Nuv Float Rte Opp Fd **JRO**	11.40	11.06	-3.0	7.5
Nuveen Senior Income Fund **NSL**	6.83	6.46	-5.4	7.3
Pioneer Floating Rate Tr **PHD**	12.40	11.46	-7.6	6.3
Voya Prime Rate Trust **PPR**	5.68	5.17	-9.0	5.6
High Yield Bond Funds				
AllianceBernstein Glbl **AWF**	13.57	12.00	-11.6	6.9
Barings Glbl Short Dur HY **BGH**	20.57	18.72	-9.0	9.7
BlackRock Corp Hi Yd Fd **HYT**	11.98	10.56	-11.9	7.9
BlackRockDurInco Tr **BLW**	16.80	15.14	-9.9	6.4
Brookfield Real Assets **RA**	24.21	21.68	-10.5	10.8
Credit Suisse High Yld **DHY**	2.71	2.65	-2.2	9.8
DoubleLine Incm Solutions **DSL**	NA	20.11	NA	9.1
Dreyfus Hi Yd Strat Fd **DHF**	3.44	3.21	-6.7	9.2
Fst Tr Hi Inc Lg/Shrt Fd **FSD**	17.34	15.46	-10.8	9.5
Guggenheim Strat Opps Fd **GOF**	19.32	20.37	+5.4	10.9
Ivy High Income Opps Fund **IVH**	15.94	14.17	-11.1	9.7
Neuberger Berman HYS **NHS**	12.83	11.16	-13.0	7.8
NexPoint Credit Strat Fd **NHF**	26.01	23.97	-7.8	10.0
Nuveen Credit Opps 2022 **JCO**	9.83	9.42	-4.2	NS
Nuveen Gl Hi Incm Fd **JGH**	18.15	16.28	-10.3	8.8
Nuveen High Incm Dec18 **JHA**	9.98	9.82	-1.6	4.6
Nuveen High Incm Dec19 **JHD**	10.07	9.84	-2.3	5.7
Nuveen Hi Incm Nov 2021 **JHB**	10.00	9.65	-3.5	6.1
Pioneer High Income Trust **PHT**	10.60	9.47	-10.7	8.1
Prud Gl Shrt Dur Hi Yd **GHY**	16.18	13.97	-13.7	7.9
Prudentl Sh Dur Hi Yd Fd **ISD**	16.33	14.25	-12.7	7.9
Wells Fargo Incm Opps Fd **EAD**	9.06	8.09	-10.7	8.6
Wstrn Asset Glbl Hi Inco **EHI**	NA	9.59	NA	8.5
Wstrn Asset High Inco II **HIX**	NA	6.68	NA	8.9
Wstrn Asset Opp Fd **HIO**	NA	4.88	NA	7.2
West Asst HY Def Opp Fd **HYI**	NA	14.80	NA	7.7
Other Domestic Taxable Bond Funds				
Ares Dynamic Credit Alloc **ARDC**	NA	16.31	NA	7.0
Barings Corp Investors **MCI**	NA	14.85	NA	6.0
BlackRock Multi-Sector IT **BIT**	19.03	16.94	-11.0	8.8
BlackRock Taxable Mun Bd **BBN**	23.21	22.51	-3.0	7.2
Doubleline Oppor Credit **DBL**	NA	22.20	NA	9.2
Duff & Phelps Utl & Cp Bd **DUC**	9.34	8.67	-7.2	6.5
EtnVncLtdFd **EVV**	NA	13.06	NA	7.4
Franklin Ltd Duration IT **FTF**	12.00	11.26	-6.2	13.3
Guggenheim Taxable Muni **GBAB**	22.77	21.73	-4.6	7.1
Invesco High Incm 2023 **IHIT**	9.94	9.73	-2.1	6.1
KKR Income Opps Fund **KIO**	NA	15.88	NA	9.8
MFS Charter **MCR**	8.93	8.16	-8.6	9.1
MFS Multimkt **MMT**	6.36	5.76	-9.4	9.2
Nuveen Build Am Bd Fd **NBB**	21.74	20.25	-6.9	5.9
PIMCO Corporate & Incm **PTY**	NA	16.71	NA	9.4
PIMCO Corporate & Incm **PCN**	NA	16.88	NA	8.0
PIMCO HiInco **PHK**	NA	7.56	NA	12.9
PIMCO Inco Str Fd **PFL**	NA	11.60	NA	9.4
PIMCO Incm Strategy Fd II **PFN**	NA	10.42	NA	9.2
Putnam Mas Inco **PIM**	5.06	4.78	-5.5	6.6
Putnam Premier Income Tr **PPT**	5.64	5.29	-6.2	6.0
Wells Fargo Multi-Sector **ERC**	14.09	13.06	-7.3	9.8
World Income Funds				
Aberdeen Asia-Pacific **FAX**	5.29	4.78	-9.7	8.8
Brandywine Global Incm **BWG**	NA	12.80	NA	8.0
Etn Vnc Short Dur Fd **EVG**	15.18	13.67	-9.9	6.8
MS EmMktDomDebt **EDD**	9.19	7.87	-14.4	7.9
PIMCO Dynamic Credit **PCI**	NA	23.03	NA	8.8
PIMCO Dynamic Income Fund **PDI**	NA	30.86	NA	8.7
PIMCO Income Opportunity **PKO**	NA	26.14	NA	9.0
PIMCO Strat Income Fund **RCS**	NA	9.06	NA	9.6
Templeton Emerging **TEI**	12.71	11.65	-8.3	5.2
Templeton Global **GIM**	7.25	6.35	-12.4	6.8
Wstrn Asset Emerg Mkts **EMD**	NA	14.74	NA	8.1
Wstrn Asset Gl Def Opp Fd **GDO**	NA	16.87	NA	8.0
National Muni Bond Funds				
AllianceBrnstn NtlMun **AFB**	14.33	12.51	-12.7	4.8
Blackrock Invest **BKN**	15.32	13.62	-11.1	5.3
BlackRock Mun 2030 Target **BTT**	23.47	21.30	-9.2	4.1
BlackRock Municipal Trust **BFK**	14.08	13.03	-7.5	5.8
BlackRockMuni **BLE**	14.65	13.42	-8.4	6.2
BlackRockMuni Tr **BYM**	14.71	13.12	-10.8	5.6
BlkRk MuniAssets Fd **MUA**	14.03	13.51	-3.7	5.0
BlkRk Munienhanced **MEN**	11.55	10.62	-8.1	6.1
BlkRk MuniHldgs Inv **MFL**	14.23	13.14	-7.7	6.2
BlkRk MuniHldgs Qlty II **MUE**	13.63	12.36	-9.3	5.9
BlkRk MuniVest **MVF**	9.40	8.90	-5.3	6.0
BlkRk MuniVest II **MVT**	14.85	15.07	+1.5	5.8
BlkRk MuniYield **MYD**	14.47	13.36	-7.7	6.1
BlkRk MuniYld Quality **MQY**	15.34	14.02	-8.6	5.9
BlkRk MuniYld Qlty II **MQT**	13.48	11.99	-11.1	5.7
BlRkMunyldQltyIII **MYI**	13.97	12.58	-9.9	6.2
Deutsche Mun Income Tr **KTF**	12.16	11.19	-8.0	6.3
Dreyfus Mun Bd Infr Fd **DMB**	13.93	12.23	-12.2	5.1
Dreyfus Strat Muni Bond **DSM**	8.16	7.66	-6.1	6.4
Dreyfus Strategic Munis **LEO**	8.38	7.68	-8.4	6.5
Eaton Vance Mun Bd Fd **EIM**	13.26	11.82	-10.9	5.3
Eaton Vance Mun Income **EVN**	12.91	11.54	-10.6	5.6
EV National Municipal Opp **EOT**	21.34	21.26	-0.4	4.9
Invesco Adv Mun Incm II **VKI**	11.77	10.66	-9.4	6.0
Invesco Mun Incm Opps Tr **OIA**	7.40	7.47	+0.9	5.4
Invesco Mun Opportunity **VMO**	13.13	11.70	-10.9	6.0
Invesco Municipal Trust **VKQ**	13.10	11.61	-11.4	6.0
Invesco Qlty Mun Inco **IQI**	13.20	11.82	-10.5	5.5
Invesco Inv Grade Muni **VGM**	13.57	12.25	-9.8	6.1
Invesco Value Mun Incm Tr **IIM**	15.75	14.42	-8.4	5.1
MainStay Mac Defined Muni **MMD**	19.78	18.75	-5.2	5.7
MFS Munl Inco **MFM**	7.22	6.60	-8.6	5.8
Nuveen AMT-Free Mun Value **NUW**	16.33	15.86	-2.9	4.4
Nuveen AMT-Free Quality **NEA**	14.64	12.93	-11.7	5.5
Nuveen AMT-Free Mun **NVG**	15.91	14.40	-9.5	6.0
Nuveen Mun Credit Incm Fd **NZF**	15.47	14.06	-9.1	6.2
Nuveen Enhncd Mun Val Fd **NEV**	14.54	13.32	-8.4	5.9
Nuveen Intermed Dur Mun **NID**	13.45	12.37	-8.0	4.9
NuveenMuniIncoOpp Fd **NMZ**	13.19	12.55	-4.9	6.1
Nuveen Muni Value Fund **NUV**	10.04	9.38	-6.6	4.0
Nuveen Qual Mun Incm Fd **NAD**	14.93	13.03	-12.7	5.5
Nuveen Sel TF **NXQ**	14.48	13.34	-7.9	3.7
PIMCO MuniFd **PMF**	NA	12.43	NA	5.7
Pimco Muni Inc II **PML**	NA	12.60	NA	6.3
PIMCO Muni Inc III **PMX**	NA	11.10	NA	6.1
Pioneer Mun Hi Inc Adv Tr **MAV**	11.51	10.63	-7.6	5.6
Pioneer Mun Hi Incm Tr **MHI**	12.52	11.19	-10.6	5.3
Putnam Tr **PMM**	7.83	7.04	-10.1	5.5
Putnam Muni Opportunities **PMO**	13.01	11.65	-10.5	5.4
Wstrn Asset Mngd Muni **MMU**	NA	13.13	NA	5.8
Western Asset Mun Tr Fund **MTT**	NA	21.73	NA	4.6
Single State Muni Bond				
BlackRock CA Municipal Tr **BFZ**	14.80	13.05	-11.8	5.3
BlkRk MuniHldgs CA Qlty **MUC**	15.03	13.23	-12.0	5.3
Blkrck MunHl NJ Qlty **MUJ**	15.18	13.34	-12.1	5.8
BlRk MuHldg NY Qlty **MHN**	14.35	12.61	-12.1	5.2
BlkRk MuniYld CA Fd **MYC**	15.04	13.53	-10.0	5.3
BlkRk MuniYld CA Quality **MCA**	15.23	13.38	-12.1	5.4
BlkRk MuniYld MI Qlty **MIY**	15.04	13.44	-10.6	5.5
BlRk Muyld NY Qlty **MYN**	13.76	12.15	-11.7	5.1
Eaton Vance CA Mun Bd **EVM**	11.95	10.40	-13.0	5.4
Invesco CA Value Mun Incm **VCV**	12.97	11.74	-9.5	5.4
Invesco PA Value Mun Incm **VPV**	13.62	11.69	-14.2	5.3
Invesco Inv Grade NY Muni **VTN**	14.08	12.88	-8.5	5.2
Nuveen CA AMT-Free Qual **NKX**	15.24	13.67	-10.3	5.5
Nuveen CA Muni Value **NCA**	10.21	9.40	-7.9	4.2
Nuveen CA Quality Muni **NAC**	15.17	13.54	-10.7	5.7
Nuveen MD Qual Muni **NMY**	14.13	12.02	-14.9	5.0
Nuveen MI Qual Muni **NUM**	14.93	12.73	-14.7	4.8
Nuveen NJ Qual Muni **NXJ**	15.35	13.01	-15.2	5.3
Nuveen NY AMT-Free **NRK**	13.98	12.18	-12.9	5.0
Nuveen NY Qual Muni **NAN**	14.59	12.73	-12.7	5.3
Nuveen OH Qual Muni **NUO**	16.12	13.75	-14.7	5.0
Nuveen PA Qual Muni **NQP**	14.68	12.42	-15.4	5.5
Nuveen VA Qual Muni **NPV**	14.02	12.22	-12.8	4.5
PIMCO California Muni **PCQ**	NA	14.72	NA	6.3
PIMCO California Mun II **PCK**	NA	8.16	NA	6.6

Fund (SYM)	NAV	Close	Prem/Disc	52 wk Ttl Ret
General Equity Funds				
Specialized Equity Funds				
Griffin Inst Access RE:A	26.84	NA	NA	5.7
Griffin Inst Access RE:C	26.34	NA	NA	4.9
Griffin Inst Access RE:I	27.02	NA	NA	5.9
Griffin Inst Access RE:L	26.81	NA	NA	NS
Griffin Inst Access RE:M	26.67	NA	NA	5.2
NexPointRlEstStrat;A	19.83	NA	NA	2.9
NexPointRlEstStrat;C	19.90	NA	NA	2.7
NexPointRlEstStrat;Z	19.91	NA	NA	3.8
NorthStar RE Cap Inc:Adv	NA	NA	NA	NS
PREDEX;T	25.95	NA	NA	NS
PREDEX;W	25.95	NA	NA	NS
Resource RE Div Inc:A	9.94	NA	NA	3.4
Resource RE Div Inc:C	9.92	NA	NA	2.6
Resource RE Div Inc:D	10.09	NA	NA	2.9
Resource RE Div Inc:I	10.37	NA	NA	3.8
Resource RE Div Inc:L	9.94	NA	NA	NS
Resource RE Div Inc:T	9.91	NA	NA	2.7
Resource RE Div Inc:U	9.95	NA	NA	3.4
Resource RE Div Inc:W	10.10	NA	NA	3.5
SharesPost 100;A	27.02	NA	NA	7.1
SharesPost 100:I	27.04	NA	NA	NS
Tot Inc+ RE:A	29.81	NA	NA	7.4
Tot Inc+ RE:C	28.96	NA	NA	6.6
Tot Inc+ RE:I	30.18	NA	NA	7.7
Tot Inc+ RE:L	29.75	NA	NA	NS
USQ Core Real Estate:I **USQIX**	25.28	NA	NA	NS
USQ Core Real Estate:IS **USQSX**	25.28	NA	NA	NS
Versus Cap MMgr RE Inc:I	27.65	NA	NA	NE
Versus Capital Real Asst **VCRRX**	25.19	NA	NA	NS
Wildermuth Endwmnt Str	13.29	NA	NA	12.8
Wildermuth Endwmnt S:C	13.08	NA	NA	11.9
Wildermuth Endwmnt S:I	13.37	NA	NA	NS
Income & Preferred Stock Funds				
MultiStrat Gro & Inc:A	14.54	NA	NA	-1.2
MultiStrat Gro & Inc:C	14.19	NA	NA	-2.0
MultiStrat Gro & Inc:I	14.73	NA	NA	-1.1
MultiStrat Gro & Inc:L	14.30	NA	NA	-1.8
The Relative Value:CIA **VFLEX**	25.25	NA	NA	NS
Convertible Sec's. Funds				
Calamos Dyn Conv & Incm **CCD**	21.32	20.25	-5.0	16.6
World Equity Funds				
BMO LGM Front ME	11.64	NA	NA	24.5
Calamos Global Tot Ret Fd **CGO**	13.62	15.01	+10.2	19.0

Fund (SYM)	NAV	Close	Prem/Disc	12 Mo Yld
U.S. Mortgage Bond Funds				
Vertical Capital Inc:A	12.30	NA	NA	3.3
Vertical Capital Inc:C	12.36	NA	NA	NS
Vertical Capital Inc:I	12.36	NA	NA	NS
Vertical Capital Inc:L	12.36	NA	NA	NS
Loan Participation Funds				
504 Fund	9.78	NA	NA	3.9
Angel Oak Strategic Crdt **ASCIX**	25.10	NA	NA	NS
Blackstone/GSO FR El I	25.03	NA	NA	NS
FedProj&TrFinanceTendr	10.09	NA	NA	2.2
FS Global Crdt Opptys D	NA	NA	NA	4.7
Invesco Sr Loan A	6.72	NA	NA	4.0
Invesco Sr Loan C	6.74	NA	NA	3.3
Invesco Sr Loan IB	6.73	NA	NA	4.3
Invesco Sr Loan IC	6.73	NA	NA	4.1
Invesco Sr Loan Y	6.72	NA	NA	4.3
RiverNorth MP Lending **RMPLX**	23.97	NA	NA	11.3
Sierra Total Return:T **SRNTX**	24.84	NA	NA	NS
Voya Senior Income:A	12.61	NA	NA	5.0
Voya Senior Income:C	12.59	NA	NA	4.5
Voya Senior Income:I	12.57	NA	NA	5.3
Voya Senior Income:W	12.62	NA	NA	5.3
High Yield Bond Funds				
Griffin Inst Access Cd:A	NA	NA	NA	NS
Griffin Inst Access Cd:C	NA	NA	NA	NS
Griffin Inst Access Cd:F	NA	NA	NA	NS
Griffin Inst Access Cd:I	NA	NA	NA	NS
Griffin Inst Access Cd:L	NA	NA	NA	NS
PIMCO Flexible Cr I;Inst	NA	NA	NA	5.8
PionrILSInterval	9.50	NA	NA	1.4
WA Middle Mkt Dbt	NA	NA	NA	10.7
WA Middle Mkt Inc **WMF**	NA	NA	NA	10.7
Other Domestic Taxable Bond Funds				
BlackRock Mlt-Sctr Oppty	99.90	NA	NA	NS
Capstone Church Capital	11.69	NA	NA	3.4
CION Ares Dvsfd Crdt;A	NA	NA	NA	5.0
CION Ares Dvsfd Crdt;C	NA	NA	NA	NS
CION Ares Dvsfd Crdt;I	NA	NA	NA	NS
CION Ares Dvsfd Crdt;L	NA	NA	NA	NS
CNR Select Strategies	9.62	NA	NA	NS
GL Beyond Income	2.98	NA	NA	NE
Palmer Square Opp Income	19.61	NA	NA	4.7
Resource Credit Inc:A	11.18	NA	NA	6.4
Resource Credit Inc:C	11.29	NA	NA	5.7
Resource Credit Inc:I	11.21	NA	NA	6.7
Resource Credit Inc:L	11.17	NA	NA	NS
Resource Credit Inc:W	11.18	NA	NA	6.4

Cash Prices | WSJ.com/commodities

Friday, March 16, 2018

These prices reflect buying and selling of a variety of actual or "physical" commodities in the marketplace—separate from the futures price on an exchange, which reflects what the commodity might be worth in future months.

	Friday
Energy	
Propane,tet,Mont Belvieu-g	0.8080
Butane,normal,Mont Belvieu-g	0.8996
NaturalGas,HenryHub-i	2.610
NaturalGas,TranscoZone3-i	2.590
NaturalGas,TranscoZone6NY-i	2.840
NaturalGas,PanhandleEast-i	2.060
NaturalGas,Opal-i	2.100
NaturalGas,MarcellusNE PA-i	2.390
NaturalGas,HaynesvilleN.LA-i	2.530
Coal,C.Aplc.,12500Btu,1.2SO2-r,w	63.100
Coal,PwdrRvrBsn,8800Btu,0.8SO2-r,w	12.400
Metals	
Gold, per troy oz	
Engelhard industrial	1319.39
Engelhard fabricated	1418.34
Handy & Harman base	1310.10
Handy & Harman fabricated	1454.21
LBMA Gold Price AM	*1323.35
LBMA Gold Price PM	*1318.75
Krugerrand,wholesale-e	1364.69
Maple Leaf-e	1377.81
American Eagle-e	1377.81
Mexican peso-e	1590.12
Austria crown-e	1289.22
Austria phil-e	1377.81
Silver, troy oz.	
Engelhard industrial	16.4500
Engelhard fabricated	19.7400
Handy & Harman base	16.2810
Handy & Harman fabricated	20.3510
LBMA spot price	£11.7900
(U.S.$ equivalent)	16.4750
Coins,wholesale $1,000 face-a	12043
Other metals	
LBMA Platinum Price PM	*959.0
Platinum,Engelhard industrial	954.0
Platinum,Engelhard fabricated	1054.0
Palladium,Engelhard industrial	992.0
Palladium,Engelhard fabricated	1092.0
Aluminum, LME, $ per metric ton	*2062.5
Copper,Comex spot	3.0930
Iron Ore, 62% Fe CFR China-s	69.6
Shredded Scrap, US Midwest-s,m	366
Steel, HRC USA, FOB Midwest Mill-s	852
Fibers and Textiles	
Burlap,10-oz,40-inch NY yd-n,w	0.6200
Cotton,1 1/16 std lw-mdMphs-u	0.8185
Cotlook 'A' Index-t	*92.85
Hides,hvy native steers piece fob-u	66.000
Wool,64s,staple,Terr del-u,w	n.a.
Grains and Feeds	
Barley,top-quality Mnpls-u	n.a.
Bran,wheat middlings, KC-u	101
Corn,No. 2 yellow,Cent IL-bp,u	3.5200
Corn gluten feed,Midwest-u,w	106.2
Corn gluten meal,Midwest-u,w	537.2
Cottonseed meal-u,w	325
Hominy feed,Cent IL-u,w	98
Meat-bonemeal,50% pro Mnpls-u,w	263
Oats,No.2 milling,Mnpls-u	2.7225
Rice, Long Grain Milled, No. 2 AR-u,w	25.50
Sorghum,(Milo) No.2 Gulf-u	8.2188
SoybeanMeal,Cent IL,rail,ton48%-u	376.90
Soybeans,No.1 yllw IL-bp,u	9.9900
Wheat,Spring14%-pro Mnpls-u	7.5675
Wheat,No.2 soft red,St.Louis-bp,u	4.6800
Wheat - Hard - KC (USDA) $ per bu-u	4.8950
Wheat,No.1soft white,Portld,OR-u	5.5400
Food	
Beef,carcass equiv. index	
choice 1-3,600-900 lbs.-u	202.81
select 1-3,600-900 lbs.-u	194.40
Broilers, National comp wghtd-u,w	0.9904
Butter,AA Chicago	2.2100
Cheddar cheese,bbl,Chicago	156.00
Cheddar cheese,blk,Chicago	158.50
Milk,Nonfat dry,Chicago lb.	69.00
Cocoa,Ivory Coast-w	n.a.
Coffee,Brazilian,Comp	1.1876
Coffee,Colombian, NY	1.3821
Eggs,large white,Chicago-u	1.9550
Flour,hard winter KC	15.55
Hams,17-20 lbs,Mid-US fob-u	n.a.
Hogs,Iowa-So. Minnesota-u	63.85
Pork bellies,12-14 lb MidUS-u	n.a.
Pork loins,13-19 lb MidUS-u	0.8949
Steers,Tex.-Okla. Choice-u	127.00
Steers,feeder,Okla. City-u,w	169.88
Fats and Oils	
Corn oil,crude wet/dry mill-u,w	30.9100
Grease,choice white,Chicago-h	0.2250
Lard,Chicago-u	n.a.
Soybean oil,crude;Centl IL-u	0.3033
Tallow,bleach;Chicago-h	0.2600
Tallow,edible,Chicago-u	n.a.

KEY TO CODES: A=ask; B=bid; BP=country elevator bids to producers; C=corrected; E=Manfra,Tordella & Brooks; G=ICE; H=Hurley Brokerage; I=Natural Gas Intelligence; M=monthly; N=nominal; n.a.=not quoted or not available; R=SNL Energy; S=Platts-TSI; T=Cotlook Limited; U=USDA; W=weekly, Z=not quoted. *Data as of 3/15

Source: WSJ Market Data Group

Borrowing Benchmarks | WSJ.com/bonds

Money Rates

March 16, 2018

Key annual interest rates paid to borrow or lend money in U.S. and international markets. Rates below are a guide to general levels but don't always represent actual transactions.

Inflation

	Feb. index level	Chg From (%) Jan. '18	Feb. '17
U.S. consumer price index			
All items	248.991	0.45	2.2
Core	255.783	0.45	1.8

International rates

	Latest	Week ago	52-Week High	52-Week Low
Prime rates				
U.S.	4.50	4.50	4.50	4.00
Canada	3.45	3.45	3.45	2.70
Japan	1.475	1.475	1.475	1.475
Policy Rates				
Euro zone	0.00	0.00	0.00	0.00
Switzerland	0.50	0.50	0.50	0.50
Britain	0.50	0.50	0.50	0.25
Australia	1.50	1.50	1.50	1.50
Overnight repurchase				
U.S.	1.58	1.56	1.62	0.76

U.S. government rates

	Latest	Week ago	52-Week High	52-Week Low
Discount				
	2.00	2.00	2.00	1.50
Federal funds				
Effective rate	1.4500	1.4200	1.4500	0.8400
High	1.6500	1.6500	1.6500	1.0625
Low	1.4000	1.4000	1.4100	0.7000
Bid	1.4200	1.4100	1.4300	0.8100
Offer	1.4500	1.4400	1.4600	0.8200
Treasury bill auction				
4 weeks	1.650	1.550	1.650	0.695
13 weeks	1.670	1.660	1.670	0.760
26 weeks	1.850	1.830	1.850	0.890

Secondary market

	Latest	Week ago	52-Week High	52-Week Low
Fannie Mae				
30-year mortgage yields				
30 days	4.034	4.048	4.087	3.253
60 days	4.063	4.085	4.123	3.281

Other short-term rates

	Latest	Week ago	52-Week high	52-Week low
Call money				
	3.25	3.25	3.25	2.75
Commercial paper (AA financial)				
90 days	2.09	2.02	2.09	0.95
Libor				
One month	1.82207	1.75032	1.82207	0.97611
Three month	2.20175	2.08875	2.20175	1.14678
Six month	2.36363	2.26863	2.36363	1.39072
One year	2.61450	2.54450	2.61450	1.69511
Euro Libor				
One month	-0.412	-0.411	-0.388	-0.420
Three month	-0.379	-0.379	-0.354	-0.387
Six month	-0.330	-0.330	-0.247	-0.339
One year	-0.254	-0.259	-0.110	-0.263
Euro interbank offered rate (Euribor)				
One month	-0.370	-0.371	-0.366	-0.375
Three month	-0.328	-0.327	-0.325	-0.332
Six month	-0.272	-0.271	-0.241	-0.279
One year	-0.192	-0.191	-0.106	-0.194

	Latest	Value Traded	52-Week High	52-Week Low
DTCC GCF Repo Index				
Treasury	1.572	32.300	1.836	0.752
MBS	1.577	106.840	1.852	0.757

	Settle	Change	Open Interest	Implied Rate
DTCC GCF Repo Index Futures				
Treasury Mar	98.360	0.010	2117	1.640
Treasury Apr	98.215	0.005	869	1.785
Treasury May	98.200	unch.	586	1.800

Notes on data:

U.S. prime rate is the base rate on corporate loans posted by at least 70% of the 10 largest U.S. banks, and is effective December 14, 2017. **Other prime rates** aren't directly comparable; lending practices vary widely by location; **Discount rate** is effective December 14, 2017. **DTCC GCF Repo Index** is Depository Trust & Clearing Corp.'s weighted average for overnight trades in applicable CUSIPs. Value traded is in billions of U.S. dollars. **Federal-funds rates** are Tullett Prebon rates as of 5:30 p.m. ET. **Futures on the DTCC GCF Repo Index** are traded on NYSE Liffe US.

Sources: Federal Reserve; Bureau of Labor Statistics; DTCC; SIX Financial Information; Tullett Prebon Information, Ltd.

Insider-Trading Spotlight

Trading by 'insiders' of a corporation, such as a company's CEO, vice president or director, potentially conveys new information about the prospects of a company. Insiders are required to report large trades to the SEC within two business days. Here's a look at the biggest individual trades by insiders, based on data received by Thomson Financial on March 16, and year-to-date stock performance of the company

KEY: B: beneficial owner of more than 10% of a security class **CB:** chairman **CEO:** chief executive officer **CFO:** chief financial officer **CO:** chief operating officer **D:** director **DO:** director and beneficial owner **GC:** general counsel **H:** officer, director and beneficial owner **I:** indirect transaction filed through a trust, insider spouse, minor child or other **O:** officer **OD:** officer and director **P:** president **UT:** unknown **VP:** vice president Excludes pure options transactions

Biggest weekly individual trades

Based on reports filed with regulators this past week

Date(s)	Company	Symbol	Insider	Title	No. of shrs in trans (000s)	Price range ($) in transaction	$ Value (000s)	Close ($)	Ytd (%)
Buyers									
Mar. 7-9	**Ecolab**	**ECL**	W. Gates	BI	1,329	131.03-134.75	176,962	138.08	2.9
Mar. 12-13			W. Gates	BI	369	135.87-137.24	50,381		
Mar. 9			J. Ettinger	D	6	134.42	860		
Mar. 9	**Mondelez International**	**MDLZ**	P. May	DI	1,029	44.27	45,538	43.19	0.9
Mar. 9	**Bank of New York Mellon**	**BK**	E. Garden	DI	360	56.52-57.02	20,400	55.00	2.1
Mar. 12-14	**American Assets Trust**	**AAT**	E. Rady	CEOI	260	32.59-33.22	8,554	33.22	-13.1
Mar. 8-9			E. Rady	CEOI	68	32.06-32.31	2,188		
Mar. 12	**Corvus Pharmaceuticals**	**CRVS**	T. Gould	DOI	588	8.50	5,000	10.32	-0.4
Mar. 12			P. Thompson	DOI	588	8.50	5,000		
Mar. 12			R. Miller	CEOI	100	8.50	850		
Mar. 9-13	**Entercom Communications**	**ETM**	J. Field	CB	500	9.87-9.99	4,962	10.00	-7.4
Mar. 9	**MMA Capital Management**	**MMAC**	J. Hunt	DI	125	33.00	4,125	28.15	15.8
Mar. 12-13	**New Mountain Finance**	**NMFC**	S. Klinsky	D	281	13.38-13.43	3,768	13.20	-2.6
Mar. 8-9			S. Klinsky	D	201	13.32-13.41	2,687		
Mar. 13	**REV Group**	**REVG**	T. Sullivan	CEO	100	22.53	2,253	21.05	-35.3
Mar. 7	**Pinnacle Foods**	**PF**	M. Pant	D	20	56.93	1,139	55.12	-7.3
Mar. 13-15	**BlueLinx Holdings**	**BXC**	K. Fennebresque	D	35*	30.60-33.96	1,099	36.57	274.7
Mar. 9	**Energen**	**EGN**	J. Cohen	D	18	57.36	1,004	57.32	-0.4
Sellers									
Mar. 8	**TransUnion**	**TRU**	S. Rajpal	DI	19,853	57.60	1,143,531	59.20	7.7
Mar. 8-9	**Facebook**	**FB**	M. Zuckerberg	CEOI	457	182.13-185.32	83,855	185.09	4.9
Mar. 12-13			M. Zuckerberg	CEOI	440	181.92-185.60	80,958		
Mar. 14			M. Zuckerberg	CEOI	245	182.52-184.05	44,942		
Mar. 7	**Workday**	**WDAY**	D. Duffield	DO	365	135.03-137.95	50,012	135.33	33.0
Mar. 9	**Diplomat Pharmacy**	**DPLO**	P. Hagerman	DOI	2,150	20.65	44,398	22.75	13.4
Mar. 6-14	**RealPage**	**RP**	S. Winn	CEO	521*	52.30-53.37	27,555	53.35	20.4
Mar. 9-12	**Gentex**	**GNTX**	F. Bauer	CEO	946	23.32-23.36	22,073	23.50	12.2
Mar. 13	**Square**	**SQ**	J. Mckelvey	D	400	51.73-53.33	20,853	54.89	58.3
Mar. 7-8	**Cerner**	**CERN**	C. Illig	ODI	308	64.01-64.96	19,853	61.26	-9.1
Mar. 9	**Fidelity National Information Services**	**FIS**	F. Martire	D	190	99.74	18,951	100.64	7.0
Mar. 8-12	**USANA Health Sciences**	**USNA**	M. Wentz	DI	228	80.84-81.24	18,492	82.35	11.2
Mar. 14-15	**Hewlett Packard Enterprise**	**HPE**	M. Whitman	D	674	18.84-18.91	12,722	18.79	30.8
Mar. 9-12	**Arista Networks**	**ANET**	A. Sadana	O	41	298.00	12,349	293.72	24.7
Mar. 12-14	**Verisk Analytics**	**VRSK**	K. Thompson	GC	104	105.00-105.09	10,973	104.77	9.1
Mar. 7	**Keysight Technologies**	**KEYS**	S. Gooi	O	183	52.25-52.42	9,569	53.39	28.3
Mar. 13	**Churchill Downs**	**CHDN**	D. Harrington	DI	35	271.20	9,492	264.30	13.6
Mar. 13	**United Rentals**	**URI**	W. Plummer	CFO	50	187.88	9,394	186.29	8.4

* Half the transactions were indirect ** Two day transaction
p - Pink Sheets

Buying and selling by sector

Based on actual transaction dates in reports received this past week

Sector	Buying	Selling	Sector	Buying	Selling
Basic Industries	1,963,288	14,285,042	**Finance**	7,291,995	112,109,250
Business services	907,301	12,874,951	**Health care**	1,936,771	140,549,519
Capital goods	0	0	**Industrial**	559,756	64,389,360
Consumer durables	206,693	30,512,944	**Media**	4,962,110	3,559,152
Consumer nondurables	608,045	23,776,499	**Technology**	2,416,977	99,241,595
Consumer services	1,711,354	107,779,516	**Transportation**	37,714	5,311,559
Energy	468,218	21,923,166	**Utilities**	1,063,769	1,443,545

Sources: Thomson Financial; WSJ Market Data Group

Investors Jump for Almond Joy

Harvard endowment bets on crop, as plant lures institutions looking long term

By Lucy Craymer

JUSTIN SULLIVAN/GETTY IMAGES; (INSET) GETTY IMAGES

Around 80% of the world's almonds are currently produced in California, such as those in this photo.

In the Australian state of New South Wales, Harvard University is developing around 1,480 acres of former potato fields and other farmland, building a new dam and planting trees that will take about three years to bear their first edible crops.

It is part of a growing bet on almonds by the college's endowment, which is adding to the around 1,235 acres of almond plantations it already owns near a township called Hillston.

Hundreds of miles away, Harvard is trying to sell an Australian sugar-cane plantation that it bought in 2016 and recently disposed of a dairy farm in New Zealand.

Almonds are shaping up to be a more lucrative endeavor for pension funds, endowments and other institutions with very long-term investment horizons.

Global production of the oval-shaped tree nut is forecast to hit a record 1.3 million metric tons this year, according to the U.S. Department of Agriculture.

Around 80% of the world's almonds are produced in California, whose almond plantations in its Central Valley have generated strong returns for investors for many years.

Volatile weather in recent months, including frost and storms, has hurt estimates for the state's almond harvest this summer, helping to push wholesale export prices for U.S. almonds to near a two-year high of $6,807 a metric ton.

The weaker U.S. production forecasts and changing weather patterns in California—which has also experienced droughts in past years—are coinciding with rising global demand for the calcium-rich plant.

Almonds' high protein levels and other nutritional benefits have caught on with rising numbers of health-conscious consumers. Food manufacturers have also come up with more varieties of almond products in recent years, from almond milk to cereals to desserts and baked goods.

Consumption of almonds grew by 15% from 2012 to 2017, according to estimates from Euromonitor International, which forecasts 4% annual growth through 2021.

Large investors are piling into established orchards and planting new trees, particularly in south eastern Australia, whose Mediterranean-like climate and farms' ability to secure large quantities of fresh water make it one of few regions in the world that are conducive to growing almonds commercially. The country's almond output is forecast to rise 9% this year, according to the USDA.

Ontario Teachers' Pension Plan and Boston-based Hancock Agricultural Investment Group, a division of **Manulife Asset Management** Co. that manages farmland, also recently invested in almond plantations Down Under.

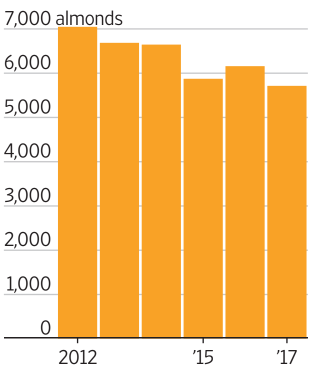
Almond trees take three years to mature, an additional four to reach their full production potential and only produce one harvest a year during the late summer months. In California, each almond tree on average produces more than 5,000 nuts a year, according to USDA data.

In Australia, nuts generate gross revenue of A$8,097 to A$12,146 (US$6,314 to US$9,471) per acre, roughly 40 times that of grains for

Going Nuts

Yields on California almond trees vary with the weather.

Annual yield of a Californian almond tree, estimated average



Source: U.S. Department of Agriculture
THE WALL STREET JOURNAL.

the same area, according to the Australian Nut Industry Council.

At current wholesale prices of US$7 per kilogram in Australia, almonds offer a gross margin of around 45% before overhead costs and other expenses, according to Tim McGavin, chief executive of Laguna Bay Pastoral Co., an agricultural asset manager in Brisbane.

Laguna Bay is looking to buy new almond plantations for a $220 million fund that invests on behalf of the Washington State Investment Board and other investors.

Diana Will, a senior investment officer at the state's pension fund, said Australian agricultural investments are attractive because the harvest season in the Southern Hemisphere takes place at a different time from the north and helps ensure a year-round supply of nuts and other crops for export.

Roughly $800 million of the fund's $128.8 billion in assets is invested in agricultural assets around the world; around 2.9% of that is in Australia and the Pacific region.

Almonds have been grown in Australia since 1836, but increasingly family-owned and smaller farms are being replaced by large-scale commercial almond plantations backed by foreign investors.

The amount of land with almond trees has increased 30% in the past two years to nearly 100,000 acres and is forecast to increase by a further 10% this year, according to the Almond Board of Australia. There are now more than 10 million almond trees in Australia.

"Money is coming from quite a wide range of people," said Ross Skinner, chief executive of the board. "It's high yield and it's an industry that has seen high demand growth."

Aroona Farms, one of Australia's largest almond growers that was acquired by the Ontario Teachers' Pension Plan in 2014, has been expanding its acreage and now has nearly 5,000 acres of almond trees.

The Canadian pension fund, which recently valued the business at more than $115 million, said Australia remains a target market and it is actively looking for opportunities.

Investors are piling into established orchards and planting new trees.

Other large investors are looking for ways to invest: Last fall, the United Arab Emirates's sovereign-wealth fund, Mubadala Investment Co. PJSC, made a $340 million bid for **Select Harvests** Ltd., one of Australia largest almond producers, according to a securities filing. Select's board rejected the offer, saying it "significantly undervalued the company," which remains listed on the Australian stock exchange.

—Dawn Lim and Jacquie McNish contributed to this article.

Oil Fund BBL Plans $1 Billion Macro Unit

By Alison Sider

BBL Commodities LP, one of the biggest energy-focused hedge funds, is looking to raise $1 billion for a new fund that will wager on macroeconomic trends via bonds, stocks, currencies and commodities.

BBL currently runs a $535 million commodity fund. Founder Jonathan Goldberg said its work on oil and other commodities gives it a unique view into global trends, which it will be able to express in the new macro fund and vice versa. "The commodity work helps the macro, and the macro work helps our commodities stuff," he said.

Macro funds' returns have been muted in recent years, but many believe these funds are poised to make more money as central banks unwind stimulus programs—a development that could create better conditions for funds looking to trade assets against one another.

BBL is in advanced stages of raising $250 million in "founders share" funding from early investors who will get a break on fees. It then aims to raise an additional $750 million.

Ben Jacobs, a macro fund veteran who was a senior portfolio manager at **Element Capital Management**, joined BBL on March 1 to be the new macro fund's senior portfolio manager. Messrs. Goldberg and Jacobs sat next to each other as traders at **Goldman Sachs Group** Inc. At the bank, Mr. Goldberg primarily focused on commodities such as oil but also traded in broader markets, while Mr. Jacobs's strategy was primarily macro trading with some commodities.

Mr. Goldberg launched BBL in 2013 after three years at **Glencore** PLC, a commodities trading house. Mr. Jacobs went to **Caxton Associates** LP, where he was a senior portfolio manager from 2012 to 2016, when he joined Element.

Commodities funds have struggled with low returns and declining investor interest, and several funds have shuttered recently. Automated trading driven by algorithms has made it harder for human traders to make money betting on supply and demand, and a wealth of available data has eroded some of the edge that funds once had.

Despite tough times for such funds, Mr. Goldberg said he still believes in the strategy. BBL returned 2% last year and 17% in 2016. "There's 100% still a role for pure commodity investing," he said. "We just think we can do more."

For instance, a macro strategy could have come in handy last year, Mr. Goldberg said. Oil prices rose close to 12.5% last year, but many funds struggled to dig out from a difficult first half, when uncertainty about the effectiveness of production cuts by the Organization of the Petroleum Exporting Countries weighed on the market.

"Oil demand was ripping; we knew what was happening. There was no reason not to have other exposure," Mr. Goldberg said. "We were able to generate positive returns again in commodities markets that have frustrated other people, but the path can be improved."

Bitcoin Rally Skips Overstock

By Paul Vigna

Everybody, it seems, got rich off bitcoin and cryptocurrencies in 2017. After the digital currency's 1,375% gain, rookie crypto investors made money. Veteran crypto investors made money. Which is why the 2017 loss by **Overstock.com** Inc.'s Medici Ventures unit is such a head-scratcher.

Medici is the unit that houses all of Overstock's crypto and blockchain-related businesses. This includes a trading platform it is developing called tZero as well as a number of investments in startups. The unit lost $22 million for 2017 on a pretax basis, according to Overstock's fourth-quarter earnings report. Along with the company's disappointing fourth-quarter loss, the sour blockchain-related news contributed to the stock's 5.2% decline on Friday.

The reason why Overstock didn't make money on crypto when everybody else was appears to be pretty simple: Medici is spending a lot of money and not generating much revenue. According to its 10-K filing with the Securities and Exchange Commission, Medici made about $12 million worth of equity investments in about a dozen startups in 2017. Those startups, like tZero, Bitt and Bitsy, are in the "startup or development stages," generating little or no revenue, and thus are providing no returns to their equity holders.

Jonathan Johnson, an Overstock executive who was named the head of Medici in 2016, described the Medici unit as a cross between "a venture firm and an incubator."

"Medici's long-term goal is to help companies to succeed and grow," he told The Wall Street Journal earlier this month. "It's not a quarter-over-quarter business. We are building long-term value over time."

In addition to Medici's investments, the tZero unit itself has made about $28 million worth of equity investments just since December, the company said. But tZero has generated virtually no traffic on its trading platform, and no material revenue overall, the company acknowledged in its filing.

The only security that has been offered on the platform so far is Overstock's own Series A preferred shares, and the company said that since Dec. 15, 2016, when it started offering them, only 10 trades have taken place.

Currencies

U.S.-dollar foreign-exchange rates in late New York trading

Country/currency	Fri in US$	Fri per US$	US$ vs, YTD chg (%)
Americas			
Argentina peso	.0495	20.1847	8.5
Brazil real	.3049	3.2798	–1.0
Canada dollar	.7636	1.3097	4.2
Chile peso	.001644	608.20	–1.2
Ecuador US dollar	1	1	unch
Mexico peso	.0535	18.6915	–5.0
Uruguay peso	.03525	28.3700	–1.5
Venezuela b. fuerte	.000027	36650.0001	354285.3
Asia-Pacific			
Australian dollar	.7694	1.2997	1.5
China yuan	.1579	6.3346	–2.6
Hong Kong dollar	.1275	7.8432	0.4
India rupee	.01537	65.075	1.9
Indonesia rupiah	.0000727	13754	2.0
Japan yen	.009436	105.98	–6.0
Kazakhstan tenge	.003106	322.00	–3.2
Macau pataca	.1237	8.0811	0.4
Malaysia ringgit	.2558	3.9090	–3.8
New Zealand dollar	.7191	1.3906	–1.4
Pakistan rupee	.00904	110.625	–0.02
Philippines peso	.0193	51.921	3.9
Singapore dollar	.7590	1.3175	–1.5
South Korea won	.0009341	1070.53	0.3
Sri Lanka rupee	.0064086	156.04	1.7
Taiwan dollar	.03433	29.128	–1.8
Thailand baht	.03201	31.240	–4.1
Vietnam dong	.00004394	22760	0.2

Country/currency	Fri in US$	Fri per US$	US$ vs, YTD chg (%)
Europe			
Czech Rep. koruna	.04836	20.680	–2.8
Denmark krone	.1650	6.0613	–2.3
Euro area euro	1.2291	.8136	–2.3
Hungary forint	.003953	252.99	–2.3
Iceland krona	.010033	99.67	–3.7
Norway krone	.1296	7.7154	–6.0
Poland zloty	.2913	3.4325	–1.3
Russia ruble	.01736	57.609	–0.1
Sweden krona	.1220	8.1941	0.1
Switzerland franc	1.0506	.9518	–2.3
Turkey lira	.2551	3.9206	3.3
Ukraine hryvnia	.0382	26.1816	–7.0
UK pound	1.3944	.7172	–3.1
Middle East/Africa			
Bahrain dinar	2.6527	.3770	–0.03
Egypt pound	.0569	17.5835	–1.1
Israel shekel	.2892	3.4576	–0.6
Kuwait dinar	3.3344	.2999	–0.5
Oman sul rial	2.5976	.3850	...
Qatar rial	.2747	3.640	–0.2
Saudi Arabia riyal	.2667	3.7502	–0.01
South Africa rand	.0835	11.9766	–3.1

	Close	Net Chg	% Chg	YTD % Chg
WSJ Dollar Index	83.96	0.11	0.13	–2.35

Sources: Tullett Prebon, WSJ Market Data Group

THE TICKER | Market events coming this week

Monday

Earnings expected*

	Estimate/Year Ago($)
Oracle	**0.72**/0.69

Tuesday

Fed two-day meeting starts

Earnings expected*

	Estimate/Year Ago($)
FedEx	**3.11**/2.35

Wednesday

Fed policy meeting ends
Target rate 1.25-1.50

Mort. bankers indexes
Purch., previous up 3%
Refinan., prev. down 2%

EIA status report
Previous change in stocks in millions of barrels
Crude oil up 5.0
Gasoline down 6.3
Distillates down 4.4

Current account
3rd qtr., previous $100.57 bil. deficit
4th qtr., expected $125.0 bil. deficit

Existing home sales
Jan., previous 5.38 mil.
Feb., expected 5.40 mil.

Earnings expected*

	Estimate/Year Ago($)
General Mills	**0.78**/0.72
Wheaton Precious Metals	**0.16**/0.19

Thursday

Initial jobless claims
Previous 226,000
Expected 225,000

EIA report: natural gas
Previous change in stocks in billions of cubic feet
down 93

Leading indicators
Jan., previous up 1.0%
Feb., expected up 0.6%

Earnings expected*

	Estimate/Year Ago($)
Accenture	**1.49**/1.33
Carnival	**0.43**/0.38
Cintas	**1.25**/1.11
Conagra	**0.55**/0.48
Micron	**2.69**/0.90
Nike	**0.53**/0.68

Friday

New-home sales
Jan., previous 593,000
Feb., expected 620,000

Durable-goods orders
Jan., previous down 3.6%
Feb., expected up 1.5%

* FACTSET ESTIMATES EARNINGS-PER-SHARE ESTIMATES DON'T INCLUDE EXTRAORDINARY ITEMS (LOSSES IN PARENTHESES) ◆ ADJUSTED FOR STOCK SPLIT
NOTE: FORECASTS ARE FROM DOW JONES WEEKLY SURVEY OF ECONOMISTS

ANDY NEWMAN/CARNIVAL CRUISE LINE/ASSOCIATED PRESS

Cruise-ship operator Carnival Corp. is scheduled to report its quarterly results on Thursday.

MARKETS

A Deeper Look at the Flattening U.S. Yield Curve

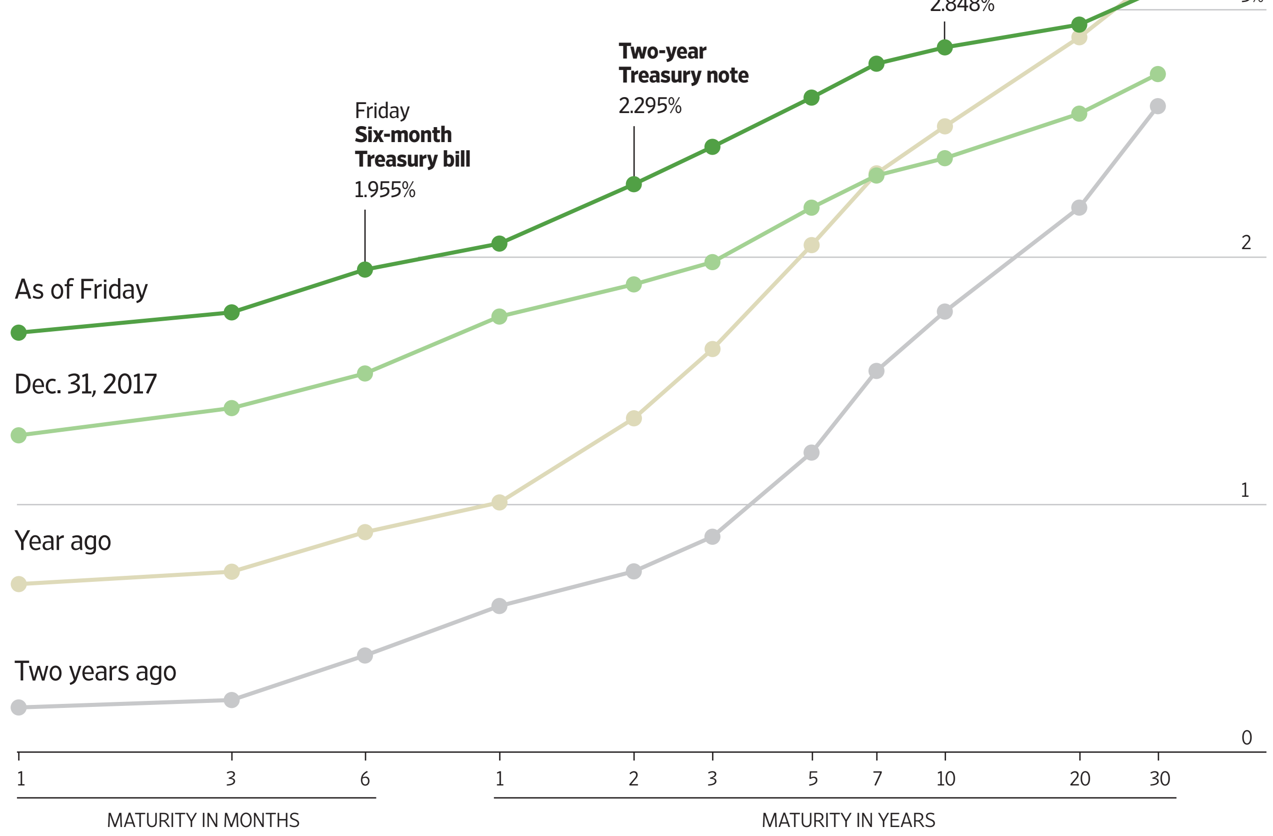
The long-awaited repricing of the U.S. bond market has stalled once again. The 10-year U.S. Treasury yield has been stuck between 2.8% and 2.9% after an early 2018 debt selloff took the yield within a hair of 3% for the first time in four years. The rise in yields since 2016 signals investors no longer fear the global economy will suddenly fall apart, but the recent leveling off suggests investors doubt growth is truly picking up in a sustained way.

Next on deck for bond investors is the coming week's meeting of the Federal Open Market Committee, due to conclude Wednesday. The Fed is expected to raise its fed-funds short-term interest-rate target then and at least twice more this year, depending on how the economy performs and whether inflation increases further.

Fed interest-rate increases translate almost mechanically into higher short-term Treasury yields. A bigger question for investors is whether those increases will curb growth along with inflation. That would pull down yields "further out on the curve," as Wall Street jargon would have it, potentially signaling a slowdown.

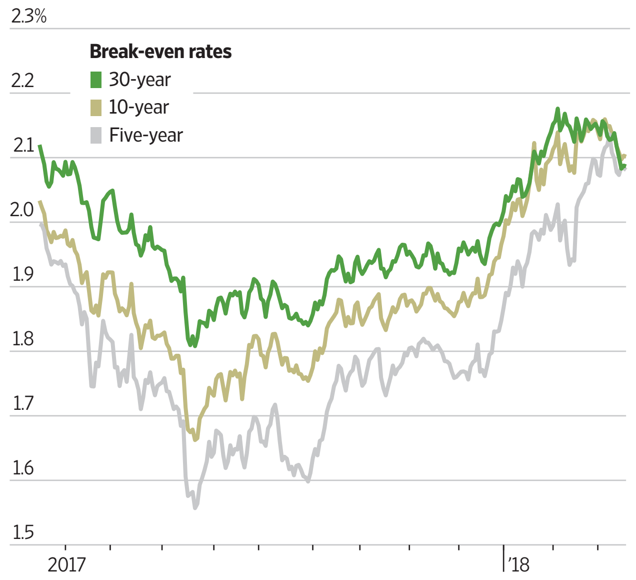
Here is a look at a few key yield-curve soundings that investors will be making for the balance of 2018.

TREASURY YIELDS BY MATURITY



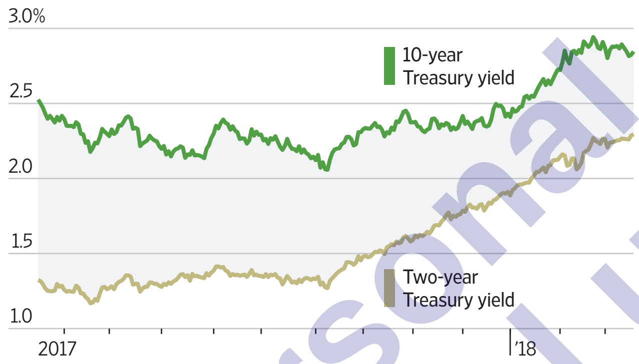
BREAK-EVENS

Short-term inflation expectations have risen in the past year, propelled by the $1.5 trillion tax cut passed at the end of 2017. Yet a smaller change in expectations for longer-term inflation suggests many investors still think the U.S. growth trend is stuck around 2%.



THE 'TWO-10' SPREAD

The gap between two- and 10-year Treasury yields is watched closely as a barometer of economic health. The rise in 10-year yields since December is a sign to many analysts that the economic expansion is far from over.



THE 'FIVE-30' SPREAD

Investors watch the difference between five- and 30-year yields for a read on the outlook for growth and inflation, which threatens the value of bonds because it chips away at the purchasing power of their fixed payments. The larger the difference, the greater the expectation for economic expansion and inflationary pressures.

Sources: Treasury Department (yields by maturity); Thomson Reuters (break-evens); Ryan ALM (spreads)

Reporting by Daniel Kruger, graphic by Peter Santilli/THE WALL STREET JOURNAL

HEARD ON THE STREET

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AT&T Trial Set to Change Rules for Deals

If government loses its antitrust case, stage will be set for more media mergers

No matter who wins, the blockbuster antitrust trial pitting **AT&T** against the U.S. government will reshape the media landscape. What it won't do is end the upheaval of an industry contending with new competitors and new technologies.

Beginning on Monday, AT&T will defend its $85 billion acquisition of **Time Warner** in federal court. Investors in companies from pay-TV distributors like **Verizon** and **Charter** to content creators like **Disney** and **21st Century Fox** to tech firms like **Netflix**, **Amazon** and Google should pay close attention. A world in which the deal is approved will look very different from one in which it isn't.

If AT&T prevails, the media industry will gain another company that combines distribution and content, much like Comcast-NBC. That merger will spur others. With consumers cutting the cord in favor of streaming platforms and advertisers moving off television, most legacy media firms see gaining scale as their only shot against the tech giants. If the government loses its case, they will have a green light to move forward.

Indeed, facing a newly powerful rival in a merged AT&T-Time Warner, they will be compelled to.

The first action will likely be between **Comcast**, Fox and Disney. Fox has agreed to sell assets such as its movie studio and **Sky** satellite TV provider to Disney, and rejected a higher Comcast bid in part over regulatory concerns. Comcast, which has already bid for Sky, will likely make another offer for all of the assets Disney is buying, setting up an ugly fight.

Seeing a "vertical integration" of distribution and content approved, Charter and Verizon could also seek to acquire a content creator. Meanwhile, Comcast-NBC, could come under renewed regulatory scrutiny. The government constraints slapped on as a condition of its merger in 2011 expire this September, but if AT&T isn't constrained, why should Comcast be?

Yet the major challenges facing the industry won't disappear.

"I don't think NBC is any less challenged because Comcast bought it," said Rich Greenfield of BTIG Research. "It's not like Netflix or Google or **Facebook** have struggled because of the merger."

Take the case of Seeso, a streaming service NBC launched in January 2016: NBC executives wanted to take NBC comedies like "The Office" off of Netflix and make it exclusive to the new platform. Netflix responded by raising its fee for "The Office" by tens of millions of dollars on the condition that NBC give it exclusive rights to the show. NBC caved, and, Seeso, which never had enough subscribers to break even, shut down in November 2017.

In the world where AT&T wins, the company will reap some benefit from Time Warner's coveted content. But it is hard to imagine that HBO in the hands of AT&T will pose a serious threat to Netflix, for example.

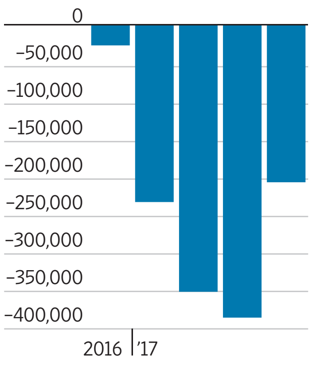
A victory by AT&T won't change the dynamics of the media industry but it will give companies more options to deal with the disruption. At least until the government decides to weigh in again. *—Elizabeth Winkler*

MICHAEL NAGLE/BLOOMBERG

Randall Stephenson, CEO of AT&T

Disrupted

AT&T's quarterly loss of traditional pay-TV subscribers



Comcast share price

Sources: The company (AT&T); FactSet (Comcast) THE WALL STREET JOURNAL.

Media, telecom sectors will face uncertainty if government blocks Time Warner tie-up

A victory for the Justice Department over **AT&T** in their bitter antitrust battle creates a far more interesting—and far more uncertain—situation in the media and telecom industries, and for deal-making in general, than if AT&T wins.

Such a ruling would reset the rules for mergers broadly. The government has historically challenged horizontal mergers, which combine similar businesses in an industry, rather than vertical mergers, in which businesses within the supply chain merge. If the Justice Department wins, its most immediate move could be to threaten the current wave of deals in the drug industry.

In the media industry, the verdict would leave the 2011 **Comcast**-NBC deal as an outlier. The government might find reason to revisit it.

The judge only approved the deal after Comcast agreed to conditions, and those are set to expire in September. In the eyes of antitrust regulators, it will look awfully inconsistent if AT&T-**Time Warner** is blocked but Comcast-NBC is able to exist without restrictions. The Justice Department could seek to both modify and extend the restrictions.

"I don't think anyone saw seven years ago exactly how online video would develop as a competitor to cable," says Gene Kimmelman, who was involved in approving the deal when he was at the Justice Department. He suggests that Comcast-NBC has slowed the potential development of online innovation. "There are numerous reasons to think the Justice Department might want adjustments to the consent decree, if not a more severe structural remedy."

That would fit with the current view at the Justice Department, which doesn't want to play the role of industry regulator. To avoid that role, the Justice Department could take the more radical step of challenging the company's structure.

And what, then, of content firms? If distribution firms like AT&T can't own content, are content firms allowed to own distribution platforms? That question is on the table right now in the pending deal between **21st Century Fox** and **Disney**, which would leave Disney in control of streaming service **Hulu**.

That is broadly a horizontal merger of like businesses. Yet if AT&T-Time Warner is found to be bad for consumers, regulators could also say that a combination gives Disney the power to raise the prices it charges to distribution companies. If the Justice Department approves a deal involving Fox, which President Donald Trump likes, while AT&T-Time Warner, which he has criticized, is blocked, that would raise questions of political meddling.

Finally, a ruling for the government also could lead regulators to start looking at tech firms that are creating their own content. That would be consistent with a larger interest in regulating big tech. The companies would argue that they are creating content and not buying content producers, which would almost certainly be off the table.

A victory by the Justice Department would redraw the lines around mergers, especially in media. But where regulators draw them is unclear. *—Elizabeth Winkler*

Alibaba's Homecoming Is No Jubilee

Alibaba's investors may feel excited about its plan to list on a mainland Chinese stock exchange. In reality, there may not be much to celebrate.

Chinese officials have been openly pressing the country's largest technology firms to return to their home markets. The problem until now has been that firms like Alibaba and **Tencent** have been structured as offshore entities. Under Chinese rules, that means they can't list domestically.

Chinese regulators are studying the use of depositary receipts, which would allow investors to indirectly own shares of foreign-listed firms. Alibaba already uses such receipts, known as ADRs, for its U.S. listing.

Holders of those ADRs probably won't reap much direct benefit from this move. Beijing's concerns about capital outflows will likely mean Alibaba's Chinese-listed depository receipts won't be convertible into its New York-listed ones. So there will be no way to bring their two prices together if they diverge.

The benefits for Alibaba are clearer—it could find it cheaper to raise capital at home. Alibaba and its ilk will likely get much higher valuations in mainland China.

Still, with a Chinese listing Alibaba will come under more direct scrutiny from local market regulators. Right now, that might not seem a problem for a company long assumed to have close ties to the Beijing leadership. But the political sands can shift pretty quickly in China—just ask those who run companies like **HNA Group** and **Anbang**. Alibaba's homecoming may not be lined with rose petals. *—Jacky Wong*

PERSONAL FINANCE

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THE WALL STREET JOURNAL. Monday, March 19, 2018 | R1

SQUARING OFF

We invited advocates on each side of six crucial personal-finance issues to make their best case. Read their debates here and join the conversation online.

Should the U.S. Retire Pennies and Nickels?

Our coins with the lowest value do seem to get the least amount of love. It's hard to find even a gum-ball dispenser these days that accepts a penny or nickel.

It famously costs the U.S. Mint more to make each one- and five-cent piece than the coins themselves are worth. And yet, shipments of pennies by the Mint, in response to demand from commercial banks and other financial institutions, grew to 59.9% of total coin shipments in fiscal 2017, up from 55.9% in the previous fiscal year. The banks base their orders for coins on the perceived needs of regional merchants and businesses to keep the wheels of the local cash economy turning. So someone is using them.

While the U.S. government is not in the business of making profits—it is not in the "business" of anything, some would say—there is increasing political and economic pressure on Congress to do more to balance the government's books. So is the place to start literally with pennies and nickels?

KEVIN VAN AELST (3)

YES

It's Easy to Do, and It's Good for Individuals and Taxpayers

BY HENRY AARON

LET'S DO AWAY with pennies and nickels. Seriously.

It may not be the most portentous matter competing for our attention, but leading representatives of both parties support the idea.

Pennies and nickels are a nuisance. They cost more to mint than they are worth, thus wasting labor, capital and otherwise perfectly useful metals—zinc, copper and nickel. No U.S. coin has ever been as worthless as today's penny or nickel. Until 1950, the penny had a purchasing power greater than today's dime. Until 1974, the nickel had purchasing power greater than the quarter does today.

Why not save the U.S. taxpayer the millions of dollars wasted on producing pocket ballast of no practical use? It's simple to do. The government could buy back all outstanding pennies and nickels at face value. Retailers could quote dollar prices to one decimal place rather than two. Presto: more room in pockets for truly useful things like smartphones and credit cards, and government deficits would be reduced as well.

The economic arguments against their continuation should carry more weight than any polls showing support for nickels and pennies. Not wearing seat belts was once pretty popular, too. Eliminating these coins won't save human lives, but it will save money and simplify transactions. The fact that some businesses manage to avoid the nuisance of making change in nickels and pennies by altering their pricing policies is not a reason to support the status quo—it is further proof that these coins are a nuisance.

Similarly, encouraging people to view the coins as so-called loss-leaders, based on the theory that their circulation is worth supporting if only because they help prop up demand for coins in general, thus sustaining the Mint's profit on larger coins, is not a principle that would commend itself to any business interested in survival. All it does is reduce the Mint's profits.

Further, to suggest that international businesses would shun the dollar as a medium of global trade and finance because they could no longer compute transactions to the nearest penny or nickel is absurd. Other countries have dropped small coins and suffered no adverse consequence.

Some have argued that eliminating pennies and nickels will cause prices in cash transactions to be rounded up, hurting the poor. But two countries known for socially minded economic policies have eliminated their smallest coins without causing noticeable harm to their poor: Canada minted its last penny in 2012; and New Zealand eliminated one- and two-cent coins in 1990 and its five-cent coin in 2006.

It is worth noting that leading the penny patriots is a lobby funded by the zinc producer whose commodity makes up 97.5% of pennies. Allies in the cause include other financial interests in continuing to mint the small coins, and people with vivid imaginations.

Then there are those who allege that eliminating the penny would disrespect Abraham Lincoln, neglecting the fact that people increasingly find pennies so annoying they won't bend down to pick one out of the dirt.

Mr. Aaron is the Bruce and Virginia MacLaury Senior Fellow in the Economic Studies Program at The Brookings Institution. He can be reached at ***reports@wsj.com.***

NO

The Coins Enjoy Popular Support—And for Good Reason

BY JAY L. ZAGORSKY

EFFORTS TO STOP the minting of pennies and nickels are misguided.

First of all, the Mint creates coins in response to demand, and demand for small-denomination coins is soaring. Over the past decade, the Mint roughly doubled the number of pennies and nickels it shipped. Both coins enjoy widespread popular support in opinion polls as well.

It's true that it costs more to mint these two coins than they are worth. In 2017, it cost the U.S. Mint 1.8 cents to make each penny and 6.6 cents for each nickel. Overall, however, the Mint is a profit machine. In 2017, it earned almost $400 million in profits producing circulating coins. For every dollar's worth of coins it shipped out, the Mint made 45 cents. That is a profit margin many business owners dream about.

So, think of pennies and nickels as the Mint's loss leader. They help create demand for more profitable coins in the cash economy. Eliminating pennies and nickels could make people think coins overall aren't useful. And if we stop using all coins, the Mint will lose $400 million of profit a year.

Some people and businesses say pennies and nickels are a nuisance. While this might be true in their experience, it's not a reason to stop production. Stores and restaurants bothered by small-denomination coins can set prices so the final cost ends up in round numbers that eliminate using pennies or nickels even when sales taxes are taken into account. Food trucks and restaurants have used this kind of flat pricing to speed up checking out. For other businesses, having low-denomination coins can enable cash transactions that are as precise as cashless transactions and keep the cash economy humming.

By contrast, discontinuing small coins and mandating that businesses round up or down can result in something like what has happened in Canada, which eliminated its penny in 2012. Although the Canadian government requires the final cost of a cash purchase to be rounded up or down to the closest unit of physical currency, the merchants themselves usually set the underlying price, which means they can round up one or two extra cents whenever they like.

Opponents of small coins like to point out that a major lobby for pennies is a zinc producer. But the metallic composition of pennies changes over time. If zinc becomes too expensive, the Mint will use a different metal. Meantime, producers of all types, including dairy farmers, lobby Washington to ensure demand for their products.

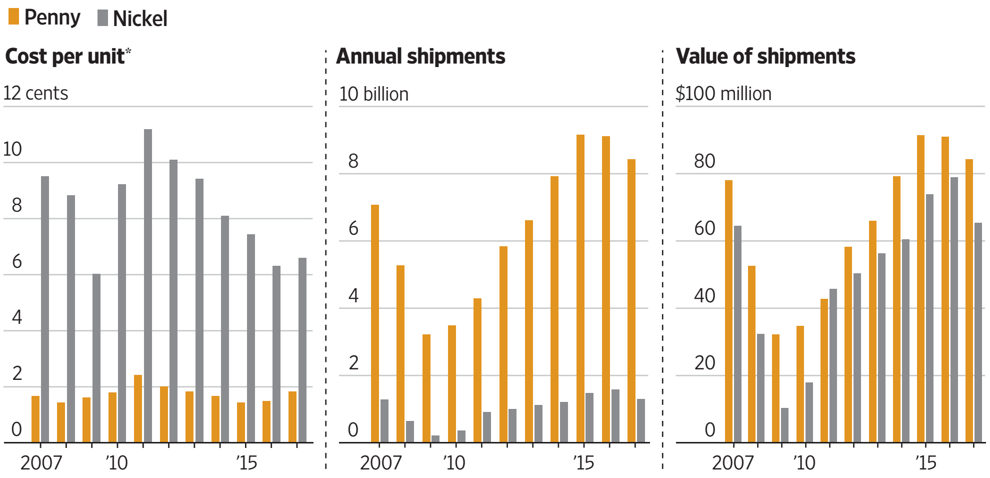
One important reason to keep the penny is to maintain confidence. When people lose faith in a country's currency, it becomes valueless. In many developing countries, savings and large transactions are done in dollars, euros and other major currencies. Eliminating the penny and nickel might suggest to the world that the U.S. currency is no longer strong and secure. Any action that reduces faith in the U.S. monetary system erodes the dollar's position as the world's dominant reserve currency.

Money is the lubricant that greases the wheels of commerce. The penny and nickel help keep those wheels spinning.

Dr. Zagorsky is an economist and research scientist at The Ohio State University and a professor at Boston University's Questrom School of Business. He can be reached at ***reports@wsj.com.***

Coin Counting

Shipments and costs of pennies and nickels produced by the U.S. Mint over the past decade



*Unit cost of producing and distributing coins, including cost of goods sold; selling, general and administrative costs; and distribution to the Federal Reserve Bank.

Source: U.S. Mint

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INSIDE

Should College Education Be Free?

Rising tuition prices at colleges and universities and the relentless growth in student debt in the U.S. have fueled calls for tuition-free college education.

Student debt stood at $1.4 trillion nationwide as of the fourth quarter of 2017, according to the Federal Reserve Bank of New York. Federal Reserve data show that more students are taking out loans and the average size of those loans is growing—and repayment rates have slowed.

Many states and cities offer students some help in covering college costs, notably New York state, which last year initiated a program allowing students in lower- and middle-class families who live in the state to enroll in its two-year and four-year public colleges tuition-free.

Advocates of a nationwide program of free colleges say that giving everyone access to higher education not only would help individuals succeed and contribute to society but also would produce a better-qualified workforce for the evolving economy. But critics of the idea point to the burden it would place on taxpayers and question whether the goal of graduating more people from college is worth the investment.

YES

Such an Investment Pays Off in Growth And Innovation

BY SARA GOLDRICK-RAB

MILLIONS OF Americans, from the poorest all the way to the upper middle class, struggle to pay for college.

Parents go into debt, their children go into debt, everyone works harder and longer. And yet a growing number don't make it.

Even students from middle-class families are leaving college without a degree, often with loans they cannot repay. Some are experiencing hunger, even homelessness, and many are giving up on their ambitions and career plans because they simply can't afford the education to get them there.

This is unnecessary, expensive and inefficient. America has a comprehensive infrastructure of colleges and universities. These institutions aren't perfect, but they are capable of preparing people for success in a rapidly changing economy. The problem is America's antiquated financial-aid system, which hasn't been significantly changed in the past half-century.

It's time for a new approach. America became great in part because it decided to offer everyone an education at the elementary and secondary school to the masses, propelling innovation and economic growth. It simply needs to remember and reinvest in that smart decision, this time including public higher education.

States should aim for tuition-free funding models for everyone, supplemented by means-tested programs to ensure that all students have access to food, housing and the transportation they need to succeed. But states can't do this on their own. We need a commitment from the federal government to provide whatever additional funding is necessary to make this work.

Of course the cost of tuition-free higher education will be borne by taxpayers. But this is the kind of investment Americans are familiar with—we all understand that public libraries are free, as are public roads and fire departments, and K-12 schools, and we share the cost of those public services. Higher education, like those, is an investment that would benefit us all. When people cannot afford education, we all suffer, as they are far less likely to be employed, paying taxes, sending their children to school and contributing to our communities in other ways.

Giving more people the opportunity to earn a college degree won't produce an army of overqualified workers, as some argue. Employers today are demanding a college education because the nature of work has changed. They want workers with up-to-date technical expertise; habits of mind that include analytical thinking, problem solving and cooperative behavior; a strong work ethic and a commitment to lifelong learning.

This is a lot to ask, and it makes sense that while many 20th-century workers could acquire everything they needed in 12 years, these days it takes 13 years or more to learn all of this.

The idea that degrees are becoming less valuable is also mistaken. The breadth of people obtaining degrees has expanded—more people from low-income families, people of color and women are getting them. These people aren't treated the same in the labor market as white men are—their wages tend to be lower. That doesn't mean education is any less valuable. In fact, it means higher education is becoming less about exclusion and more about social mobility than ever before.

As for the threat that some people see to the excellence of U.S. higher education: "Excellent" institutions that are inaccessible are nothing but elitist.

It is perfectly possible to be both accessible and excellent. But if the goal is to greatly reduce the stock of educated labor in the U.S. and turn back the clock to a time when only the privileged got ahead in life, eliminating all government aid for higher education—as some suggest would be ideal—seems like a fine way to do that, but it wouldn't be good for the country's economic future.

Dr. Goldrick-Rab is a professor of higher-education policy and sociology at Temple University and author of "Paying the Price: College Costs, Financial Aid, and the Betrayal of the American Dream." She can be reached at reports@wsj.com.

NO

'Free' Comes With a High Cost for Students And the Economy

BY NEAL MCCLUSKEY

IT'S ALWAYS nice to get something for nothing, and given astronomical college prices and the seemingly self-evident value of education, free college sounds unimpeachable. But nothing is truly free—indeed, the unintended costs can be crippling—and just because something is called "education" doesn't mean you are learning very much.

"Free" would have to be paid for with tax dollars, and looking at colleges' current tuition and fee revenue, and income directly from government, gives a rough sense of how much it would cost. Using the most recent federal data, it comes to roughly $339 billion annually, or about $1,360 for every adult in the United States. If you live to age 75, and pay that annually in taxes starting at age 18, that's $77,500—not free at all.

And not fair. Why should people who want to go to college get it paid for in part by people who pursue on-the-job training or other forms of noncollege education? Indeed, why should anyone get a degree to increase their lifetime earnings on the backs of taxpayers?

This is not to defend the current pricing model. Government "aid" to make college more affordable has actually fueled the tuition skyrocket.

In the 2015-16 academic year, Washington delivered about $139.6 billion to students, up from $53.1 billion, adjusted for inflation, 20 years earlier. That has enabled colleges to raise their prices at breakneck rates, ironically creating hyperinflated prices most hurtful to the low-income people aid was supposed to help.

Perhaps more damaging than the financial cost, however, has been the upcredentialing created by massive subsidies, forcing many Americans to earn degrees just to stay in one place in the job market. Subsidies have encouraged more people to go to college, enabling employers to demand degrees even for jobs that haven't changed, forcing more people to go to college, and so on. Free college through even greater government intervention would almost certainly intensify this vicious cycle.

This might be tolerable if additional credentials carried commensurate increases in useful knowledge and skills. They do not.

According to the National Assessment of Adult Literacy, literacy rates for people with bachelor's and advanced degrees plummeted between 1992 and 2003 (the only years studied). Among those whose highest attainment was a bachelor's degree, the share who hit prose proficiency dropped from 40% to 31%; for people with graduate studies, it fell from 51% to 41%. Little wonder: As reported in the book "Academically Adrift," the hours full-time students spent studying or in class dropped from about 40 a week in the early 1960s to about 27 today.

The dearth of useful learning may be one reason that earnings for bachelor's and advanced degree holders ages 25 to 34 dropped between 2000 and 2015.

There may be another major cost to "free." Our long tradition of paying customers, private funding and autonomous institutions has made ours the premier college system. The United States is home to the majority of the world's Nobel laureates, is the top destination for students studying outside of their home countries, and U.S. institutions predominate at the top of international rankings.

"Free" higher education would stultify this—eliminating the need for schools to compete for students to bring in revenue, and inevitably transferring decision-making from institutions to the government bureaucrats paying the bills.

A college education seems financially daunting, but making it free is not the answer. The key to quality, affordable education is to subsidize neither students nor schools, but have people pay with their own money, or money they are voluntarily given or lent, while leaving institutions free to establish their own prices, aid systems and rules. Then astronomical pricing and credentialism will wilt, without killing the dynamism that sets U.S. higher education apart.

Dr. McCluskey is the director of the Cato Institute's Center for Educational Freedom. He can be reached at reports@wsj.com.

School Bill

Average estimated costs for full-time undergraduate students for the 2017-2018 academic year

	Tuition and fees	Room and board	Books and supplies	Transportation	Other expenses	Total
Public two-year, in-district	$3,570	$8,400	$1,420	$1,780	$2,410	**$17,580**
Public four-year, in-state	$9,970	$10,800	$1,250	$1,170	$2,100	**$25,290**
Public four-year, out-of-state	$25,620	$10,800	$1,250	$1,170	$2,100	**$40,940**
Private four-year, nonprofit	$34,740	$12,210	$1,220	$1,030	$1,700	**$50,900**

Source: CollegeBoard's Trends in College Pricing 2017

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Is It Time to Adopt a Uniform Fee-Only Standard for Financial Advice?

Good financial advice is hardly ever free. But there's a spirited debate over how investors should pay for it.

Many investors get their advice from brokers who earn commissions from the sale of products they recommend. Others seek the counsel of fee-only advisers, who don't earn commissions; instead, these advisers charge fees that can be hourly or annual flat fees or a percentage of the client's assets.

Fee-only advisers are held to a fiduciary standard, meaning they're legally required to act in their clients' best interest. The standard for brokers is different: Legally, they must recommend investments that are suitable for their clients.

A new Labor Department fiduciary rule that started to come into effect in mid-2017 requires advisers of any kind who make investment recommendations on clients' retirement assets to adhere to the fiduciary standard.

But that rule has been challenged in court, and last week a three-judge panel of the Fifth U.S. Circuit Court of Appeals ruled against the Labor Department, saying it had overreached. Other circuit courts have ruled in favor of the fiduciary rule, which may be headed for the Supreme Court.

In any case, the new rule doesn't apply to advisers' recommendations on nonretirement investments.

Some people think that difference in standards leaves room for brokers to recommend investments that carry higher fees than their clients could pay for equally suitable, or more suitable, alternatives. But some in the securities industry argue that requiring all financial advice to be fee-based would limit investors' choices and drive up their costs.

YES

Too Many Brokers Mislead Consumers— At a High Cost

BY KENT SMETTERS

SUPPOSE YOUR doctor prescribes you a medication—despite a better medication being available—and receives a commission from the drug company for the prescription. Suppose your lawyer arranges an inferior trust vehicle for you, for which he receives a commission.

If caught, they would risk losing their licenses and face legal penalties.

The same isn't true for financial advisers. Of the roughly 285,000 professionals in the U.S. who offer clients financial advice, fewer than 2% are fee-only advisers who follow a true fiduciary standard that prohibits commissions on products recommended to clients and legally requires the advisers to always put their clients' interests first. The other 98% are brokers or dual-registered broker-advisory firms. They take commissions from mutual funds and insurers for products they sell to their clients, which can cost those clients big money over time by steering them toward investments with high fees.

An increasing number of countries, including the U.K. and Australia, are banning commissioned-based financial advice. The U.S. financial advisory industry, though, lobbies to protect commissions. But their arguments are misleading, and can't hide the pitfalls of commission-based advice for investors.

To start, brokers claim they disclose potential conflicts of interest in the paperwork of their dealings with clients. However, numerous studies have shown that clients don't understand these disclosures, or how much of their money is going to fees. U.S. law should require all fees be disclosed on a single, easy-to-read page. If brokers really believed in disclosure, why resist this simple idea?

Brokers also claim that commission-based products can be cheaper in the long run than the transparent fees charged by fee-only advisers. That claim, however, equates the simplistic investment advice common in broker services with the much more comprehensive advice clients receive from fee-only planning services. Investors who need only the level of advice they'd typically get from a broker can usually save a lot of money and get better advice by hiring a fee-only financial adviser who charges by the hour, rather than paying large hidden commissions.

Brokers often say that they are subject to strict oversight. But that claim is exaggerated. They are directly regulated by the Financial Industry Regulatory Authority, an industry self-regulator. The Securities and Exchange Commission only gets involved after expensive

Please see FEES YES page R4

NO

It Would Narrow Investors' Choices And Raise Costs

BY KENNETH E. BENTSEN JR.

AMERICAN INVESTORS benefit from a broad choice of services and prices that allow them to determine for themselves how best to save, invest and grow wealth. Today investors may choose from a range including do-it-yourself online investing, traditional brokerage with a financial adviser providing episodic advice, robo advisory, and completely outsourcing investment decisions to a money manager.

Retail investors access investment products and advice primarily through two channels: commission-based brokerage accounts and fee-based managed accounts. Within both channels, however, clients have many options to tailor services and costs to fit their personal needs and goals.

Limiting all investment options to fee-based would unnecessarily narrow investors' choices. It wouldn't be in their best interest, because it would increase cost and impede competition that fuels innovation and efficiency for investors. Nor would it make sense to restrict investors solely to brokerage accounts.

U.S. investors hold more than 100 million brokerage accounts and 14 million fee-based accounts. Over 30 million households hold assets solely in commission-based brokerage accounts, and 98% of investors with less than $25,000 in savings choose to maintain a brokerage account.

At the same time, an increasing number of investors choose some form of fee-based managed accounts, and many investors choose some combination of both brokerage and fee-based accounts. Responding to demand, most financial advisers and firms offer both types of accounts.

On average, fee-based accounts are more expensive because investors are purchasing more—i.e., ongoing services. Buy-and-hold investors, particularly smaller investors, trade infrequently, averaging six times a year.

For example, such an investor is better off paying a commission of $25 to establish a diversified portfolio of five ETFs for the long run, rather than paying an ongoing management fee.

Conversely, an investor who prefers the continuing advice and management of an adviser, including regular trading, rebalancing and monitoring of their account based on that adviser's ongoing recommendations, will find value in paying for such services.

Rather than have the government dictate what type of account an investor may keep, investors should be able to choose what is best

Please see FEES NO page R4

Do Most People Need Life Insurance?

The rationale for life insurance is simple: It's a way to protect family members financially in case a provider dies unexpectedly.

Yet fewer and fewer people are opting to invest in a policy, across a wide spectrum of the population.

According to a 2017 report by the Federal Reserve Bank of Chicago, 60% of households had life insurance in 2013, off from 77% in 1989.

What's driving the ownership numbers down? The study explains that a large part of the decline is a puzzle and can't be explained by shifts in demographics, family structure, income or education. The authors say that a number of factors could be driving the numbers down, including rising life expectancy, altered tax rules that make buying insurance less appealing and the ease of finding and buying attractive alternative investments for saving.

All of which raises the question: Do most people actually need life insurance?

Some experts think it's a necessity because most families don't have the resources to cover themselves if tragedy occurs. Others think most families will be fine—the chance of needing coverage is remote.

YES

Families Need to Protect Themselves, Just in Case

BY TED JENKIN

LIFE INSURANCE isn't sexy. And death isn't something any family wants to talk about. But risk management is an important part of anybody's financial plan—and that makes life insurance a crucial purchase for most families.

In my 27 years of giving financial advice, I have never had a person tell me that they bought too much life insurance after a spouse passes away. And I've never gotten a call from someone to tell me that they regret purchasing a policy.

Two years ago, I received a phone call that financial planners dread. It was from a client whose husband had vigorously opposed the idea of getting life insurance. His argument: The family had plenty of money, he said, and the wife could always work if something happened to him.

Something did. His wife now had to manage the affairs of the family business and maintain their standard of living as the family's cash reserves ran lower and lower—a tremendous financial and emotional strain.

Worst-case scenario

As this tragic example shows, life insurance is essential for most families, even those that have considerable financial resources. The reality is that with an unexpected death of a breadwinner, family income will drop immediately and remain lower, very likely for an extended period.

Life insurance provides immediately liquidity to help cover expenses. And there are more expenses than most people realize: paying for funerals, eliminating credit-card debt, covering mortgage and school payments.

And in the long term, of course, insurance helps make sure that a spouse or partner has enough resources to maintain the family's standard of living. In addition, if people own a business, insurance can be an invaluable tool to ensure that the operation keeps running.

Some contrarians will argue that most people don't need life insurance because most people don't die before their life expectancy. That means that they will pay premiums without ever collecting a death benefit.

Moreover, critics may say, people's life situation will change enough over the years that they will stop needing insurance. Their children will begin working, for instance, and be able to take care of themselves. Or the family will build up enough resources to cover any eventuality. So they'll probably end up canceling a policy anyway instead of collecting.

But those arguments don't hold water. For one thing, the fact that most people live to their life expectancy doesn't remove the risk of unexpected death. Most people never really build up as many assets as they ought to if a breadwinner dies unexpectedly. And if they don't, they're out in the cold.

For that reason, people should carry a mix of term insurance to provide short-term coverage and permanent insurance for protection over the long haul. If someone would prefer whole life or universal life—but worry that those types of policies are too expensive—there are lower-cost versions available.

Another argument critics may make against getting life insurance: People frequently buy a policy to help their family take care of estate taxes, and now that the estate-tax exemption has been raised, there is not a need for coverage. But that argument misunderstands the point of insurance. You buy a policy to provide liquidity for a number of things, not just one particular tax, so that your family doesn't have to scramble to sell assets at an already-difficult time.

Work coverage

What's more, people should not assume that the insurance they get through work will be enough. Most group life insurance has a cap on how much life insurance you can buy, but the bigger challenge is that the policy may not be portable, which means you cannot take it with you if you leave your job.

For many people, there is an initial stigma attached to products like life insurance. We may feel that we are being pushed into a buying a product, so we naturally put up a wall of resistance. Sure, insurance policies can be complicated, and you don't want to get burned by making a wrong decision. However, indecision could be the worst decision of all, and leave a family to deal with a financial mess.

Mr. Jenkin is co-CEO and founder of oXYGen Financial. Email reports@wsj.com.

NO

Most People Don't Need It—and Will Never Use It

BY SAMUEL RAD

LIFE INSURANCE is one of the most misconstrued and poorly utilized concepts the financial industry has ever devised.

The right insurance policy, used in the correct circumstances, can be an asset to a family. But it is way oversold and relied upon by many who don't need it or possibly even understand how it works. Many agents make the blanket claim that life insurance is good for everyone.

I don't agree. Most people don't need it, and those who do need it only for a short time. Yet many end up buying it and sticking with it for years. There's a reason insurance companies have done so well.

The fact is, most people are very likely to outlive their coverage, which makes their rate of return on the policy zero. In fact, they will be getting a negative rate of return, due to all of the money that they spent on being insured over their life before the policy ended.

New circumstances

Another reason most people don't need insurance is that their circumstances are always changing. Couples build up assets and fixed income so a survivor doesn't need help from insurance to stay afloat. Similarly, children get jobs and don't need help.

If I no longer drive a vehicle, I no longer need car insurance. If I no longer own a house, it wouldn't make sense for me to have homeowners insurance. Yet when we sign up for a life policy we are expected to keep paying the insurance company—regardless of what changes we see in our lives.

Many people, of course, do end up canceling their coverage at some point—but then they lose the death benefit they paid for all those years, and were constantly assured that they needed. Others pay for insurance forever even though they no longer need it due to a change in lifestyle.

The deal can even get worse when we consider whole life insurance and universal life insurance, which are designed to accumulate a cash value using internal investments along with providing coverage.

These are considerably more expensive than term life, and come with the same basic problem—most people end up dropping the policy due to life changes. But the basic promise of cash value also vanishes when you consider that the policies have high built-in costs that erode the true rate of return on cash values over the long term, usually leaving you with a minimal rate of return if you live to your life expectancy.

In short, with these policies, the longer you live, the lower your internal rate of return. So why not just invest the money in a high-performing index fund instead?

There's another consideration here, too: Many people were sold large life-insurance policies with the promise that the policies would pay off their estate tax when they passed away.

However, with the new tax law, the estate-tax exemption has doubled—to nearly $11.2 million per individual or $22.4 million per married couple—which means people can now pass along double the amount of estate to their children without triggering any taxes. That means the insurance policy that people purchased and paid into for all of these years may now be considered obsolete.

A remote chance

Obviously, in the rare case that someone does die unexpectedly, insurance will prove itself to be a good bet. If someone is concerned about that possibility, a mixture of term and permanent insurance might be a worthwhile option.

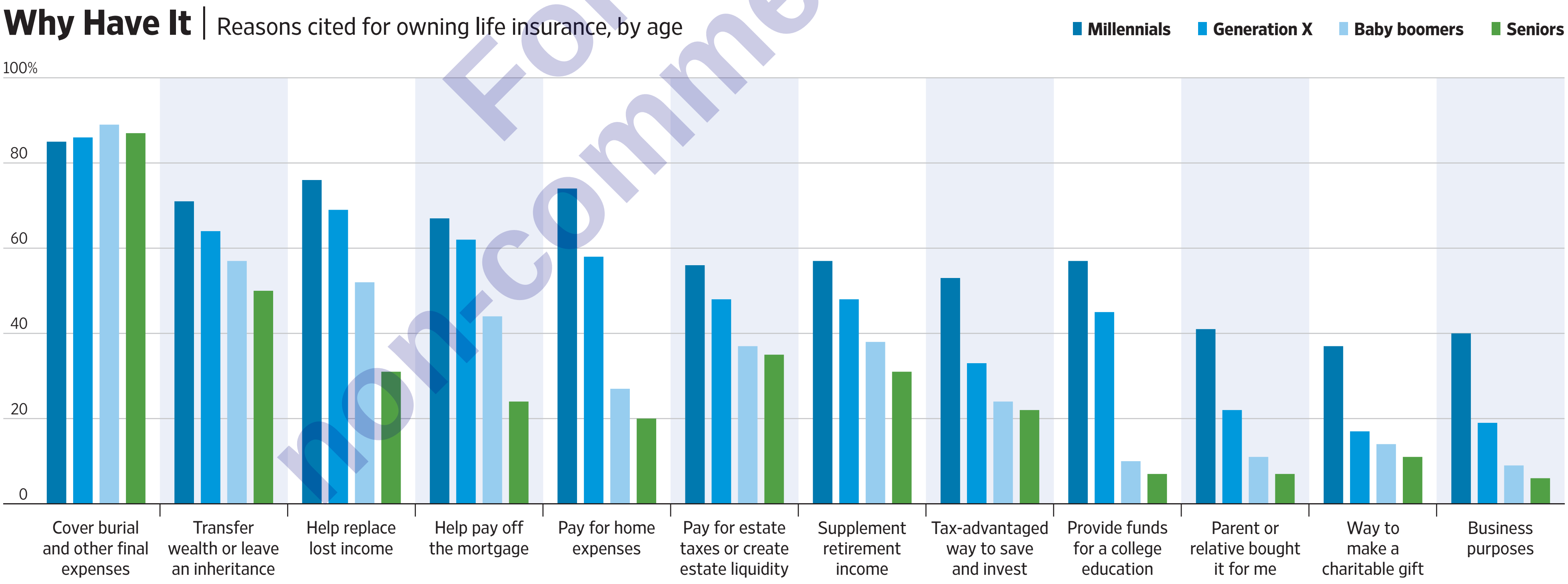
However, it's a gamble with very slim odds. Would you go to Vegas if you knew that you would win only one out of every 99 hands? Probably not.

Remember that many families have enough assets to rely on in case of a premature death, much more than they are led to believe by insurance agents. It's all too easy for insurance to become a liability and cause financial damage if used without extreme caution. It's something I see all too often with clients.

My advice? Like any tool, make sure that you only buy coverage if you absolutely need it. Once you have it, reconsider keeping it every five years.

Mr. Rad is a certified financial planner at Affluencer Financial and an instructor at UCLA. Email reports@wsj.com.

Why Have It | Reasons cited for owning life insurance, by age



Source: Limra 2016 Insurance Barometer Study

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Fees Yes

Continued from page R2

appeals within Finra or in other rare cases. In contrast, fee-only advisers legally must put their clients' interests first at all times and are subject to continual oversight by the SEC and state governments. Brokers also often say they support a fiduciary standard. But, in reality, they don't; what they support is redefining the meaning of the word fiduciary to support their business model.

The independence some brokers claim—to say they are not beholden to anyone but their clients—simply means they're selling a mutual fund or insurance product created by a third party. It does not mean the broker has the client's best interests in mind. And many brokers play another twist on words, saying they are "fee based"—which is not the same as "fee only." Investors should memorize: "Only fee-only" advisers never take commissions.

To be clear, I am not trying to demonize all brokers who call themselves financial advisers. Moreover, I believe that free enterprise has done more to promote human welfare than most government regulations. But free enterprise only works well if customers are not being tricked. When they are being tricked, paying hidden commissions that end up costing them big money, regulations are needed to protect them.

Fortunately, the times are changing: Despite their large current base, brokers are slowly declining in number while the number of fee-only advisers is increasing. But we can't wait for that trend to benefit more investors. As a nation, we can do better.

Dr. Smetters is a professor at the Wharton School of the University of Pennsylvania. His blogs and transcripts of his radio show are at KentOnMoney.com. He can be reached at reports@wsj.com.

What It Costs

Average fees reported by advisers based on client size

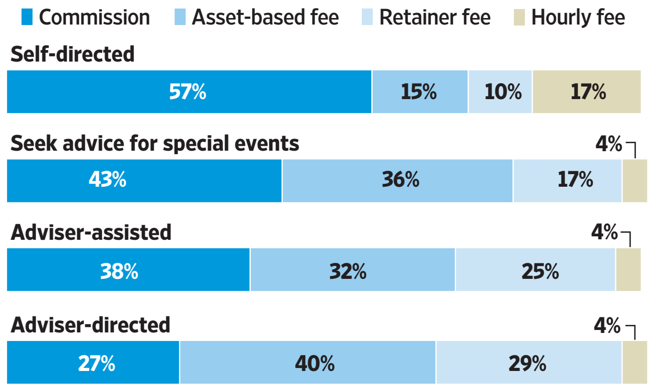
Assets under management	Average fees
$100,000	1.30%
$300,000	1.22
$750,000	1.08
$1.5 million	0.95
$5 million	0.76
$10 million	0.64

Note: Advisory fees exclude asset-manager fees and are self-reported by advisers

Source: Cerulli Associates, The Cerulli Report—U.S. Advisor Metrics 2017

Level of Advice

Percentage of investors who preferred various fee structures, based on how adviser reliant they are



Source: Cerulli Associates, The Cerulli Report – The State of U.S. Retail and Institutional Asset Management 2017

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Fees No

Continued from page R2

to meet their goals.

In either case, there is no evidence that the advice an investor would receive would differ either in kind or quality.

Some have asserted that because fee-based accounts operate subject to a "fiduciary" standard they provide greater investor protection, but that's not accurate.

Whereas fee-based accounts are regulated by the Securities and Exchange Commission, brokerage accounts are also regulated by the SEC and the Financial Industry Regulatory Authority, an independent regulatory organization under the purview of the SEC. Brokers are also subject to high conduct standards for investment recommendations, including suitability, best execution, and just and equitable principles of trade—a fiduciary-like concept. Brokerage accounts are subject to far more and frequent examination. And unlike with managed accounts, brokerage investors may seek redress through arbitration and private right of action.

Just as innovation has increased options to meet investors' needs, regulation needs to evolve to ensure robust investor protection. The SEC has said it intends to revise rules applying to commission-based brokerage accounts. Changes would likely include further strengthening the standard of conduct, enhancing disclosure of fees and mitigating conflicts. The industry continues to strongly support the SEC in this endeavor.

The clients have spoken, choosing the services and products that best fit their needs. Their voices should be heeded.

Mr. Bentsen is the president and chief executive officer of the Securities Industry and Financial Markets Association. He can be reached at reports@wsj.com.

Is Mobile Banking Secure?

BY DAN WEIL

MANY CONSUMERS have turned to their mobile phones for basic banking tasks, such as depositing checks and transferring money between accounts. Cellphones offer people the convenience to perform these tasks whenever and wherever they please.

But are we making ourselves vulnerable to cyberattacks in the process?

The general consensus is that while the risk is low when it comes to banking, security does depend to some extent on consumers—many of whom don't do what they should be doing to keep their phones safe from attack. As a result, experts say, banks could do a better job educating consumers about cybersecurity issues.

The Wall Street Journal invited three experts to discuss these issues: Joseph Carrigan, a senior security engineer at Johns Hopkins University; Emmett Higdon, director of digital banking at Javelin Strategy & Research, a subsidiary of Greenwich Associates; and Peter Wannemacher, a digital banking analyst at consulting firm Forrester Research.

Here are edited excerpts of the discussion.


Emmett Higdon


Peter Wannemacher


Joseph Carrigan

How safe?

WSJ: *How safe is mobile banking?*

MR. HIGDON: Mobile banking is generally secure. The biggest challenge is from the customer side. Consumers don't understand that their phones are vulnerable to attacks just like their computers. We rely on operating systems—Apple and Google—to be in charge of our security. But every time there's a new system update, we're continuously finding various holes. There are antivirus and anti-malware programs that consumers can run on their phones to help protect against these threats, but few consumers take that step.

MR. WANNEMACHER: I agree that mobile banking is generally quite secure, though there's no such thing as 100% secure anywhere in cyberspace. There is always some risk of a security breach in all industries. To be a consumer today and use the products and services that most people want means enduring some level of security risk.

MR. CARRIGAN: I agree that mobile-banking apps are generally more secure than other apps. I also agree that no system can be said to be 100% secure, banking apps included. In 2017, Accenture evaluated 30 mobile-banking apps and found that all of them had at least one security flaw. Most of these flaws would be difficult to exploit, but a third of the Android apps wrote some data to a file that could be accessed by other applications on the device.

WSJ: *Some of these security issues don't sound specific to mobile banking.*

MR. WANNEMACHER: Mobile security issues aren't unique or specific to banking. The holes in operating systems that Emmett mentions aren't holes in mobile banking, per se. They are holes that affect bank customers, their accounts, and the banks themselves. It's the impact of security issues that is especially pronounced when it comes to banking.

The security concerns consumers have about mobile banking—and the steps they can take to protect themselves when doing mobile banking—aren't fundamentally different from the security issues at play in digital activities in general.

WSJ: *How does the safety of mobile banking compare with the safety of other financial activity on the internet?*

MR. WANNEMACHER: Mobile banking, on the whole, is more secure than many other activities online, including certain types of shopping. That's partly because banks often have strong security by necessity, and partly because consumers tend to be more careful when their money is at stake.

Also, our research shows that consumers feel more secure making financial transactions on a laptop or PC than on a mobile device. But this disparity in what we call "perceived security" has little to do with the actual security risks. Human beings naturally fret more about new or unfamiliar things. The simple fact that PCs have been around for a long time is likely a major reason that people are still a bit wary of smartphones.

WSJ: *What else can consumers do to increase safety?*

MR. CARRIGAN: We're still stuck with passwords for the time being, so your password has to be strong—nothing like "password1234." Two-factor authentication, such as a code delivered by text message, is great. I recommend the text message, because it's easier to understand than other methods and lets you know when someone is attempting to access your account. I wouldn't do mobile banking with a bank that doesn't have some kind of two-factor authentication.

MR. HIGDON: Be careful with payment apps. Fraudsters look at mobile banking as a wide open greenfield of possibility, particularly as there are more mobile ways to move money. If you send money to a stranger, you're vulnerable.

MR. WANNEMACHER: Consumers should download new software early and often, including operating-system updates and new app versions from their banks and financial providers. Consumers should monitor their accounts regularly and act quickly. This includes reaching out to their bank if they encounter something that could be fraud. Again, these actions aren't unique to banking, but they are especially important in banking.

About public Wi-Fi...

WSJ: *Is it safe to do mobile banking when you're using public Wi-Fi?*

MR. CARRIGAN: No. If you're not paying attention, that's a great place for a man-in-the-middle attack. It is difficult to verify that the access point to which you're connecting is legitimate. It's very easy for an attacker to set up a fake access point with the same name. That could enable decryption of usernames and passwords.

Also, be aware of phishing attempts to obtain your personal information. They try to create a sense of urgency, saying log in right away or you could lose money. Never click on a link in an email urging immediate action. Clicking on a link can load a webpage that looks exactly like the banking app and will ask for your username and password. When you get such an email, go to the bank's app or website directly or contact the bank.

WSJ: *Are there any security benefits to regular use of your online banking app?*

MR. HIGDON: Frequent logins to your account make your banking more secure by ensuring that any change or suspicious activity is discovered very quickly.

To-do list?

WSJ: *What can banks do to enhance security?*

MR. WANNEMACHER: Banks have done a good, but not great, job of informing and reassuring their customers when it comes to the security and privacy of mobile banking. We see two problems on most banks' mobile apps: prominence and digestibility. By prominence, I mean the extent to which security information is either proactively presented to the customer or included in an easy-to-find area of the bank's app. By digestibility I mean the extent to which a customer can quickly and fully understand what the bank is trying to tell him or her.

Roughly half of all bank apps don't have security or privacy content inside the app itself, forcing customers to log out to get this information. And the security and privacy content on most banks' mobile apps isn't presented in an easy-to-digest way. It is often written in lengthy, jargon-filled paragraphs, rather than short, snackable bullets or quick videos.

This is relevant to mobile-banking security because the more consumers know about mobile security, the better they are able to protect themselves or respond to an attack.

WSJ: *Do big banks offer more security than small banks?*

MR. CARRIGAN: My gut reaction is yes, because they can afford to spend more money on an app that might be more secure. But I would temper that with many grains of salt. It's very possible that a large bank could get something wrong and that a small bank could get everything right.

Mr. Weil is a writer in West Palm Beach, Fla. He can be reached at ***reports@wsj.com.***

What's Holding You Back?

The security aspects of mobile banking that most worry mobile-phone users

All of the stated concerns	37%
My phone getting hacked/ someone intercepting my data	25
Having my phone lost or stolen	13
No concerns/think it's safe	8
Merchants, banks or third parties not providing sufficient security to protect my mobile transactions	7
Someone using my phone to access my account without permission	4
Malware viruses getting installed on my phone	2
Companies misusing my personal information	2
Other	1

Source: Federal Reserve Board of Governors' Consumer and Mobile Financial Services March 2016

Institutional Concerns

What financial institutions see as the most common barriers to greater consumer adoption of mobile banking*

Security concerns	70%
Banking needs are met through other channels	61%
Lack of trust in the technology	60%
Consumers see no reason to use mobile banking	49%
Ineffective marketing	35%
Difficulty of use	13%
Other	11%

*Financial institutions (banks and credit unions) were asked to pick three.

Source: Federal Reserve Bank of Boston's Mobile Banking and Payment Practices of U.S. Financial Institutions

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Will There Be a Need for Credit Cards in Five Years?

An evolution is under way in the global payment system. Advances in mobile phones and internet technology are giving rise to apps and other digital platforms that allow people to pay for goods and services with their smartphones instead of with cash or traditional credit and debit cards.

How quickly U.S. consumers adopt these technologies—and whether they ditch the plastic as a result—remains to be seen.

A survey by Accenture Consulting found that while 56% of U.S. consumers are aware of technologies that allow them to use their smartphones to pay, less than 25% regularly do it. Still, the survey suggests adoption is poised to rise.

Some experts say reports of the credit card's death have been greatly exaggerated. Cards aren't going away soon, they say, and neither is the credit-card account, which consumers value and are comfortable using. Others say credit cards won't be needed in five years because mobile payments are more convenient, cheaper and more secure.

YES

They Still Offer Services That New Platforms Don't

BY TOM MILLER JR.

ARE CREDIT CARDS going away in five years in favor of new payment technologies or new ways to transfer funds? Not likely. For most Americans, plastic credit cards are an example of "low tech, good tech."

Mobile wallets and other forms of digital payments compete with plastic credit cards, but adoption rates in the U.S. have been relatively slow, with 45% of respondents in a recent survey saying it's just easier to pay with a card. Consumers aren't clamoring for a way to stop using credit cards because they aren't bulky, there is no battery to charge and they can survive drops and exposure to water. They also can be given to family members to use or their numbers can be read over the phone.

A millennial colleague recently opined that the future will likely bring a smaller chip-carrying form. She's right: Visa has tested a payment ring. Fingerprint or retina technology might ultimately become the "chip" used by many consumers. These technologies might end up being superior to what we have now in terms of security and convenience.

But no matter what form the credit card of the future takes, demand for credit-card accounts will endure far longer than five years.

The ability to buy goods and services anytime and anywhere, coupled with the flexibility to pay for those purchases over time, is what makes credit cards so attractive to consumers. Once a luxury reserved for the wealthy, access to credit via a credit card is now available to consumers across many demographics.

Americans' commitment to credit cards is strong, even among the millennial generation. My consumer-finance students talk about cellphone apps that facilitate fund transfers, yet most of them also have a credit card—as do three-quarters of U.S. consumers, according to a 2015 Federal Reserve Bank of Boston survey. Some 44% of U.S. families carry balances month to month, and among families that do maintain this kind of debt, the average balance is roughly $5,700, according to a survey from the Fed's Board of Governors.

Internet technology has given rise to new online payment networks and lending platforms that some say will reduce transaction costs and the cost of supplying unsecured credit to borrowers. While these platforms benefit some businesses and consumers, they aren't a complete substitute for credit cards. Subprime borrowers might not have access to new lending platforms. All consumers benefit from credit-card features, including the freedom to access credit instantly without having to get outside approval each time, the option to carry a balance, protection from disputed charges and the variety of rewards programs.

Airline tickets, hotel rooms and rental cars are easy to reserve with a credit card. It is also easy to channel daily living expenses through credit cards to earn airline miles or cash-back bonuses. For the people who use credit cards this way, and for many others, not having one seems almost unimaginable.

Dr. Miller is the Jack R. Lee chair in financial institutions and consumer finance at Mississippi State University and a senior affiliated scholar at George Mason University's Mercatus Center. Email ***reports@wsj.com.***

NO

Electronic Payments Are Safer, Easier to Use and Cheaper

BY CRISTIAN DERITIS

CREDIT CARDS have played a vital role in our economy, but the need for them will fade away in the next five years. Electronic payments are more convenient, cheaper and more secure, and adoption of these technologies is going to accelerate as a result.

The credit cards of today perform two key functions. They facilitate commerce by allowing consumers and businesses to quickly and easily pay for goods and services. They also are the primary method for delivering unsecured credit to consumers. The economy will still need a system to perform these roles, but credit cards won't have to be that system.

Given high barriers to entry and large economies of scale, only a few credit-card networks exist, leading to relatively high transaction fees of 1% to 4% on every purchase. Mobile phones and the internet are quickly disrupting this model as the cost of establishing a new, online payment network plummets.

Consumers can now make payments with text messages and online services, bypassing the proprietary networks of the credit-card processors. Smartphone applications such as Apple Pay and Google Pay are also bringing down transaction costs by incorporating biometric security, geolocation technology and other tools that can sharply decrease fraudulent transactions relative to physical cards.

While credit cards won't be needed in five years, some people will still want to use them, just as some people still prefer paper checks even though better alternatives exist. Still, there are signs the momentum is shifting.

Millennials are adopting services such as Venmo and PayPal at fast rates, and survey data suggest that nearly 40% of smartphone users have at least one payment app.

Meanwhile, generational attitudes toward credit cards are rapidly shifting. Younger millennials don't have the same affinity for credit cards as their parents, partly due to a 2009 law that makes it difficult for borrowers under age 21 to get a credit card without a cosigner. Many of them will bypass cards altogether as digital-payment options expand.

Having an unsecured line of credit for emergencies and to smooth out fluctuations in income and savings is what many people value about credit cards. But this flexibility comes at a cost. Credit-card interest rates are high due to the default risk posed by borrowers.

Here again, internet technologies are giving rise to services that can fulfill this role, but at a cheaper cost. Online lending platforms such as LendingClub and Prosper connect individual borrowers with a wider range of potential lenders, reducing the interest rates some borrowers face to consolidate existing debts or finance new purchases.

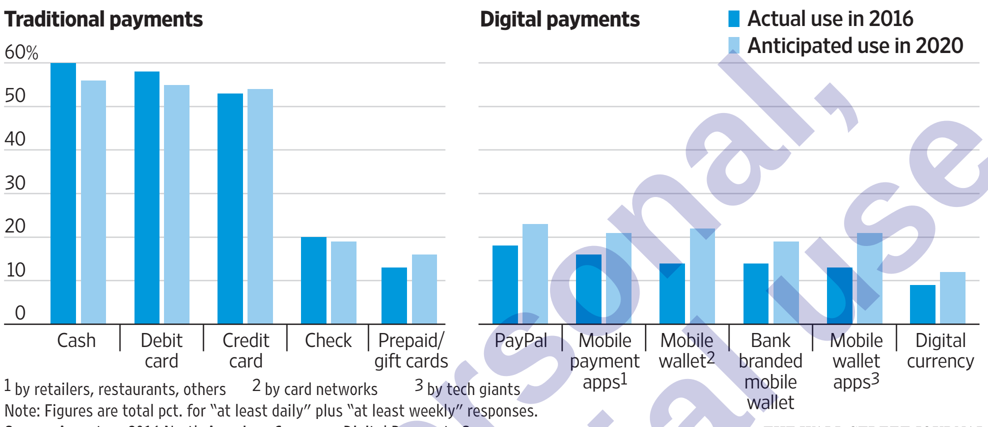
The next generation of consumer lending may include more "sale-based" financing, where lenders use real-time spending and income data to price default risk on a purchase-by-purchase basis.

Consumers will still demand and need sources of unsecured credit. They just won't need to carry around slips of plastic to get it.

Mr. deRitis *is the head of consumer credit research at Moody's Analytics. He can be reached at* ***reports@wsj.com.***

Cash, Credit or...?

The share of consumers who use or anticipate using various payment types in-store or online at least weekly



1 by retailers, restaurants, others 2 by card networks 3 by tech giants

Note: Figures are total pct. for "at least daily" plus "at least weekly" responses.

Source: Accenture 2016 North American Consumer Digital Payments Survey

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