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As of 4 p.m. ET **DJIA** 20547.76 ▼ 0.15% **NIKKEI** 18620.75 ▲ 1.03% **STOXX 600** 378.12 ▲ 0.02% **BRENT** 51.96 ▼ 1.94% **GOLD** 1287.40 ▲ 0.43% **EURO** 1.0693 ▼ 0.23% **DLR** ¥109.00 ▼ 0.30%

What's News

Business & Finance

1MDB will repay an Abu Dhabi state fund more than $1 billion in a deal that could potentially reduce tensions over alleged misappropriation. **A1**

◆ **Venture capitalists** have stopped funding scores of startups that rose to high valuations during 2014 and 2015. **A1**

◆ **United said** its chief executive Oscar Munoz will no longer be chairman and that it will revamp executive compensation incentives. **B1**

◆ **Volkswagen,** General Motors and Toyota have set out plans for electric-car production in China. **B3**

◆ **Novartis is recruiting** subjects who don't have Alzheimer's, but are at high risk of developing the disease, for two experimental treatments. **B1**

◆ **Trump has rejected** Exxon Mobil's bid to resume a Black Sea venture with Rosneft, a sanctioned Russian firm close to the Kremlin. **B3**

◆ **China experienced** a market slide as the Shanghai Composite Index reached its biggest weekly drop in four months. **B7**

◆ **Former AIG executive** Brian Duperreault is a leading candidate to replace the departing AIG CEO Peter Hancock. **B5**

◆ **The U.S. is investigating** if federal officials abused their power by pressuring Twitter to unmask the users behind an account critical of the Trump administration. **B4**

World-Wide

◆ **North Korea has arrested** a U.S. citizen in Pyongyang, potentially adding to the country's growing tension with the U.S. **A1**

◆ **French voters headed** to the polls for the first round of a closely contested presidential election. **A3**

◆ **Economic leaders sought** to find common ground at the semiannual meeting of the World Bank and IMF countries. **A3**

◆ **Afghanistan observed** a day of mourning after a Taliban attack on the army's northern headquarters left at least 170 people dead. **A4**

◆ **The Philippines** is giving up on supersize drug rehabilitation centers. **A4**

◆ **Mike Pence said** a peaceful end to tensions over North Korea's nuclear and ballistic-missile ambitions remains possible. **A4**

◆ **A new poll finds** more than half of Americans disapprove of Trump's job performance, with six in 10 approving of the Syria bombing. **A5**

◆ **A Palestinian stabbed** and lightly wounded four people in Tel Aviv before being arrested. **A4**

◆ **Following** the United incident, police agencies that patrol U.S. airports have warned their officers to not get involved in carriers' civil disputes. **A7**

◆ **The Alternative** for Germany party declined to consider Petry's motion on political strategy. **A3**

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North Korea Arrests U.S. Citizen

Detention of Korean-American professor comes at a time of heightened tensions

By Jonathan Cheng

SEOUL—North Korea has arrested a U.S. citizen in Pyongyang, according to people familiar with the matter, adding another potential flashpoint with the U.S. at a time of increasingly heated rhetoric.

The arrested man, a Korean-American professor named Tony Kim, had been teaching at a university in Pyongyang set up by a Korean-American Christian businessman, according to two people familiar with the matter.

Mr. Kim is the third known U.S. citizen to be detained by North Korea in recent months. Pyongyang last year sentenced Otto Warmbier, a University of Virginia undergraduate, and Kim Dong-chul, a Korean-American businessman, to terms of 15 years and 10 years of hard labor, respectively.

A U.S. State Department spokesman declined to comment Sunday on the case, citing privacy concerns, but said the department typically works with the Swedish embassy in Pyongyang when U.S. citizens are detained there.

The arrest of Mr. Kim comes at a time of heightened tensions between Pyongyang and Washington. During a trip to Seoul last week, U.S. Vice President Mike Pence stopped at the demilitarized zone that divides the Korean Peninsula and warned North Korea not to push U.S. President Donald Trump, citing recent unilateral strikes on Syria and Afghanistan.

"North Korea would do well not to test his resolve, or the strength of the armed forces of the United States in this region," Mr. Pence said.

The U.S. has also sent an aircraft carrier, the USS Carl Vinson, toward the Korean Peninsula. The Vinson was conducting joint exercises with Japan's navy in the Philippine Sea on Sunday, according to a U.S. statement, and is due to arrive early this week.

Mr. Kim, who also goes by the Korean name Kim Sang-duk, was detained by North Korean authorities at Pyongyang airport on Saturday, as he was about to leave the country, according to a statement Sunday by the Pyongyang University of Science of Technology, where he had been teaching.

South Korea's quasiofficial

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Trump Support Sinks in Poll

Some 54% of Americans disapprove of the job Donald Trump is doing as president as he nears his 100th day in office, A5

France Votes in High-Stakes Election

CHARLES PLATIAU/REUTERS

ALL SMILES: Candidate Marine Le Pen casts her ballot in the first round of the nation's presidential election in Henin-Beaumont in northern France. The race, which was expected to go to a runoff on May 7, has become a referendum on France's place in the European Union. **A3**

1MDB To Repay Abu Dhabi State Fund $1.2 Billion

By Bradley Hope
And Tom Wright

State investment funds in Abu Dhabi and Malaysia struck an agreement to avoid potentially embarrassing arbitration proceedings related to billions of dollars that were allegedly misappropriated by a conspiracy of former executives and advisers to both funds, according to people with direct knowledge of the deal.

The agreement could ease tension between 1Malaysia Development Bhd., or 1MDB, and Abu Dhabi's International Petroleum Investment Co., or IPIC, according to an agreement signed by the parties on Saturday, the people said.

The Malaysian fund agreed to pay $1.2 billion to IPIC, and both sides agreed to keep discussing a further $3.5 billion of disputed payments. A formal announcement on the London Stock Exchange, where IPIC bonds are listed, could come as early as Monday, the people added.

News of the deal was earlier reported by the Straits Times in Singapore.

Malaysia and Abu Dhabi have been in a dispute since last year over who should foot the bill for billions of dollars that U.S. investigators allege were stolen from 1MDB. The money was allegedly funneled out with the help of former 1MDB executives and people close to the fund, as well as assistance from former senior executives of IPIC, U.S. prosecutors said in their filings.

The former chairman of IPIC, Khadem Al Qubaisi, is now in jail in Abu Dhabi, although he hasn't been for-

Please see 1MDB page A2

Startups Struggle to Stay Alive

By Eliot Brown

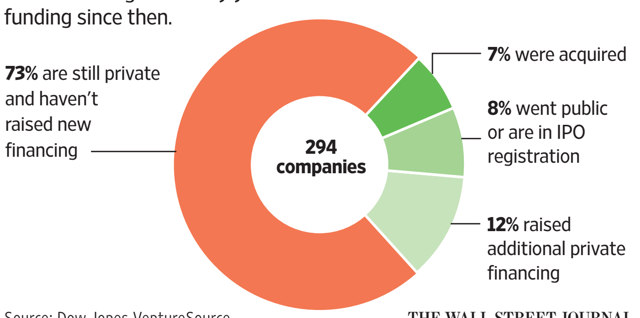
Eighteen months ago, Beepi Inc. was rapidly expanding its online used-car business to 16 U.S. cities where people could buy cut-rate vehicles adorned with giant shiny bows.

Beepi doesn't exist anymore. After burning through more than $120 million in capital, the startup failed to raise more cash and shut down in February. Its roughly 270 employees cleared out of the cavernous Mountain View, Calif., headquarters leaving behind the ping-pong table and putting green.

Beepi's rapid demise offers a glimpse into the changing fortunes of Silicon Valley startups, many of which have struggled to adjust as a two-year investment frenzy came to an end.

Looking for a Lifeline

About three-fourths of U.S. tech companies that raised $50 million or more during the heady years of 2014-15 haven't raised new funding since then.



Source: Dow Jones VentureSource

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In 2014 and 2015, mutual funds, hedge funds and others pumped billions into companies that they now see as overvalued, and unlikely to pull off an initial public offering. As venture capitalists became more discerning, investment in U.S. tech startups plummeted by 30% in 2016 from a year earlier.

For some, demand is still robust. Much of the money still being invested is pouring into the upper echelon of highly valued startups like Airbnb Inc. and WeWork Cos., or younger ones with clear paths to profit.

"There are companies that everybody wants to invest in and there are a large set of companies that almost nobody wants to invest in," said venture capitalist Keith Rabois of Khosla Ventures.

Venture-capital firms remain flush with cash: They raised $44 billion last year, the most since the dot-com boom.

But investors are staying away from scores of well-funded startups that once looked like relatively safe bets, forcing these companies to fight for survival as they burn through their stockpiles of cash

Please see TECH page A2

When Hunting Pythons, It Helps To Dance Like a Monkey

* * *

Florida's bounty on the giant snakes attracts hunters with eccentric methods

By Arian Campo-Flores

THE EVERGLADES, Fla.—For people who prefer to avoid large, scary snakes, Tom Rahill's routine won't be of much use.

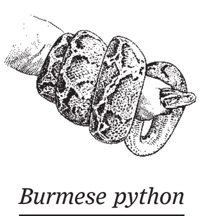
Anyone desiring to get acquainted with a python deep in the wild, though, would do well to learn his "scalded-monkey dance."

That's the shimmy Mr. Rahill does when he hunts down a fat Burmese python in the Everglades—a bob-and-weave boogie he uses to avoid the snake's strikes until he can subdue and grab it.

"The attractive thing about this," he said of snake-hunting, "is it's very primal."

There are multiple ways to catch a python, and Mr. Rahill employs a good number of them as a member of an elite squad of hunters the South Florida Water Management District pays to track down these interlopers, which biologists believe to number in the tens of thousands.

The nonnative serpents have spread through the Everglades, gobbling birds and mammals. They grow as thick as telephone poles and as long as 20 feet. They aren't venomous, killing by coiling around an animal and suffocating it before gulping. There have been reports abroad of pythons swallowing humans.



Burmese python

"I'm feeling good about this," said Mr. Rahill one morning last month, trudging through dense brush while swatting mosquitoes and avoiding poisonwoods that can trigger rashes.

Mr. Rahill is the 59-year-old founder of Swamp Apes, a

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VIRTUAL REALITY'S NEXT STEP

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HARD LESSONS FOR LEGACY RETAILERS

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THE QUEST TO FREE A FAMILY CAPTIVE IN IRAN

A British accountant has tried for the past year to bring home his wife and baby daughter

By Farnaz Fassihi

Richard Ratcliffe, separated from his family for a year, opened his phone to a favorite video of his 2½-year-old daughter, Gabriella, dancing to Persian music and munching pistachios.

The 41-year-old British accountant checked the time and calculated the hour in Tehran. If he called too late, Gabriella would be asleep.

When the Skype call connected, his daughter's pudgy face appeared on the screen. "Hello, love," he said. "Are you being a good girl?"

Gabriella, born in London, has forgotten most of her native language. She speaks to him in Farsi—or gibberish, pretending to speak English. On this call, she waved and laughed, then grabbed a crayon to draw on the carpet.

"Are you drawing on everything? Mommy will be very cross," Mr. Ratcliffe said. Gabriella dropped her smile and gestured to a phone on a table. "Mommy, mommy," she said. Earlier, her mother had called from a prison in Iran.

Gabriella's mother, Nazanin Zaghari Ratcliffe, a British-Iranian dual national and aid worker, was arrested during a family visit to Iran last April for allegedly threatening national security. Iranian authorities left Gabriella with her Iranian grandparents in Tehran and took the girl's U.K. passport.

A year ago, Gabriella was being tucked in with a bedtime story and a kiss by her

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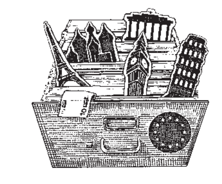
Three Risks for May in Snap U.K. Election



EUROPE FILE
By Simon Nixon

Theresa May's decision last week to call a snap election was a gamble, though not for the reasons that usually lead politicians to avoid unnecessary appointments with voters.

The risk that the U.K. prime minister might lose the June 8 election is as close to zero as is possible in a functioning democracy. Opinion polls point to her Conservative party receiving between 40% and 50% of the vote, a lead of up to 25 percentage points over the opposition Labour Party, whose leftist leader Jeremy Corbyn was last year opposed by around 80% of his party's parliamentarians in a vote of confidence. Polls suggest that only 14% of voters see him as a credible prime minister.

Instead, the risk for Mrs. May is that she falls short of her primary objective, which is to strengthen her hand for the forthcoming Brexit negotiations with the European Union. To do that, she hopes to increase her majority of 17 seats in the 650-member House of Commons.

This is important not because a larger majority would somehow intimidate Brussels—the EU has already set out tough negotiating guidelines designed to protect its interests that won't change in response to British political developments—but because it will reduce her vulnerability to her own backbenchers on both sides of the Brexit divide, giving her greater flexibility to push through whatever deal she reaches. It also means there won't need to be an election in 2020, just as the Brexit divorce is finalized and when the full costs may have only started to become clear.

Nonetheless, there are three ways that Mrs. May's gamble might yet backfire.

The first is that Mrs. May might find herself in the heat of the campaign forced to clarify her Brexit strategy in ways that might bind her hands or reduce her flexibility in the negotiations.

Her Brexit strategy so far has been to set out only a few red lines—an end to the jurisdiction of the European Court of Justice and new controls on the right of EU citizens to live and work in the U.K.—while insisting her ultimate goal is to secure a "deep and special partnership" with the EU that preserves as far as possible frictionless trade and current security cooperation.

CHRIS RADBURN, PRESS POOL

British Prime Minister Theresa May spoke in Dudley, England, on Saturday.

But she has said little about how she thinks she might reconcile these objectives, preferring to hide behind slogans that don't commit her one way or another.

By saying as little as possible about her plans, she hopes to maximize her party's appeal. She needs the support of both hard-line Brexiters who would prefer a decisive break with Brussels rather than a deal that involves any compromises that might limit the U.K.'s post-Brexit capacity for independent action, as well as former pro-EU voters who want the closest possible ties with the EU.

In a normal election, a governing party would have no chance of evading scrutiny on an issue of such vital national importance. But against a Labour Party with no coherent position on Brexit and an unpopular leader, it might just work.

The second risk is that the election shifts the Conservative Party's center of gravity substantially to the right so that even if she wins with an increased majority, she finds herself even more beholden to hard-line Brexiters, thereby reducing her scope for compromise with the EU.

Even before the referendum, the party's aging activists were notably more euroskeptic than its traditional electoral base.

At the same time, the Conservative Party's best opportunity to win seats from Labour and the Liberal Democrats is to win back votes that went to the pro-Brexit UK Independence Party in the 2015 election, creating an extra incentive for constituencies to select strongly pro-Brexit candidates.

The third risk is that opposition to the Conservatives somehow manages to galvanize itself over the next seven weeks to deprive Mrs. May of her goal of a substantially increased majority.

The simplest way for this to happen would be if the Labour Party were to dump Mr. Corbyn as leader. But this isn't going to happen before the election. On the other hand, Mr. Corbyn is so weak that many Labour parliamentarians may be able to save their own seats by making clear they would not back him to be prime minister if he won.

Their prospects might be helped by tactical voting by former Remain voters and those worried by the consequences of a Tory landslide for hot-button domestic issues such as tax, health and education. This could work particularly to the advantage of the Liberal Democrats, whose opposition to Brexit will help them win seats in pro-EU areas.

Mrs. May has clearly calculated that with such a commanding lead and against such weak opposition, these are risks worth taking. That may be right. But seven weeks is a long time in politics.

ECONOMIC CALENDAR

TUESDAY: March **new-home sales** data from the **U.S. Commerce Department** could show whether high prices and low inventory are damping buyer demand. Friday's report on March existing-home sales proved just the opposite. Economists surveyed by The Wall Street Journal expect new-home sales to drop 2% to 580,000.

WEDNESDAY: The European Central Bank rate setters will gather in Frankfurt on Wednesday and Thursday for their latest policy meeting. Pressure has been building on the bank to wind down easy-money policies as the eurozone economy picks up. But officials are expected to play it safe, leaving their massive monetary stimulus unchanged ahead of a series of major elections in Europe.

The Bank of Japan also holds a policy meeting Wednesday and Thursday, where officials are expected to leave policy unchanged and slightly temper their optimism about inflation. In a quarterly outlook to be finalized at the meeting, the BOJ likely will lower its price projection for the fiscal year ending March 2018, although it may counterbalance the cut by raising its economic assessment.

THURSDAY: The National Association of Realtors releases data on U.S. **pending home sales** for March. The pending home sales index climbed 5.5% in February from the prior month to 112.3, its highest level since April 2016 and the second-highest reading since May 2006. Economists surveyed by WSJ expect March sales to decrease by 1.3%.

FRIDAY: The U.S. Commerce Department releases its advance estimate of **gross domestic product** for the first quarter. Economic growth slowed in the fourth quarter, and the latest GDP figure is expected to be held back by weak consumer spending. Separate measures show strong consumer confidence and rising wages, suggesting a pickup in activity later in the year. Economists surveyed by WSJ are forecasting a 1.1% advance, down from the previous quarter's 2.1%.

U.K. growth slowed noticeably in the first three months of this year, preliminary figures released by the statistics office are expected to show. Fueled by the pound's steep depreciation in the wake of the Brexit vote last year, accelerating inflation is curbing consumer spending, a key engine of growth. Economists polled by WSJ see quarterly **GDP** growth slowing to 0.4%, down from 0.7% in the final three months of 2016.

The first estimate of the eurozone's annual rate of **inflation** for April is expected to show a partial rebound after a surprisingly large drop in March. Economists expect the headline rate to come in at 1.8%, still below the ECB's target. Given the increased stress policy makers have placed on underlying pressures, the core measure may prove more significant, with economists expecting to see a rise in that to 1% from 0.7% in March.

Shiite Anniversary Draws a Crowd in Baghdad

WISSM AL-OKILI/REUTERS

SYMBOLIC FUNERAL: Shiite Muslims try to touch the replica of a coffin marking the anniversary of the death of Imam Moussa al-Kadhim, the seventh of the 12 imams venerated by Shiite Islam.

TECH

Continued from Page One

and scramble for new money or buyers.

"They're like the walking dead," said David Cowan, a partner at Bessemer Venture Partners, who expects a steady stream of failures.

In 2014 and 2015, more than 5,000 U.S. tech startups collectively raised about $75 billion, according to Dow Jones VentureSource—the largest amount in a two-year period since the dot-com boom.

Much of that money went to a small share of tech startups: 294 such companies raised at least $50 million apiece. Almost three-quarters of those companies—216—have neither raised money nor been acquired since the end of 2015. Such companies tend to raise funding every 12 to 18 months.

Seemingly every week lately, a well-funded startup is slashing jobs or pulling the plug.

In recent months, mobile-search startup Quixey Inc. shut down after raising over $100 million, health-benefits broker Zenefits—which has raised more than $500 million—laid off nearly half of its staff, and blogging platform Medium cut one-third of its employees after raising $132 million.

Such closures and cutbacks were rare two years ago when venture capitalists encouraged startups to expand rapidly to edge out competitors. Then when capital became scarcer, investors urged companies to turn profitable, which isn't easy.

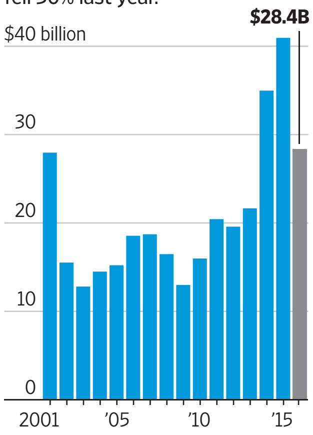
Take startup Luxe Valet Inc., whose app lets people summon parking valets in bright-blue track jackets. Founded in 2013, the San Francisco company by early last year had plowed into eight markets and raised more than $70 million.

Two competitors shut down. But expensive contracts to park cars in garages in big cities like Boston soaked up Luxe's cash, according to a person familiar with the finances. The startup has had to retreat to three markets. Luxe didn't respond to requests for comment.

"There's going to be a shakeout" for companies that can't show a profit, said James Beriker, the chief executive of meal-delivery service Munchery. Mr. Beriker joined the company in January after a rocky period that resulted in several top executives leaving—including the co-founders.

Money Trail

Funding for U.S. tech startups fell 30% last year.



Source: Dow Jones VentureSource

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Munchery, which has spent much of its $120 million in funding, is raising a $10 million lifeline from existing investors. The company is cutting costs and aims to be profitable by year-end, Mr. Beriker said.

For Beepi, profitability proved too distant for investors to wait.

Founded in 2013, Beepi caught on in San Francisco by giving people a fail-safe way to sell used cars online. Beepi guaranteed sellers a price, and if it couldn't find a buyer in 30 days, it purchased the car. Beepi marked up the price and pocketed the difference.

Venture capital poured in, and its valuation surged from $12 million in early 2014 to $525 million by mid-2015. Beepi moved out of its cramped office by a Carl's Jr. and into a glassy building where the chief executive zipped around on his own Segway. Staffers enjoyed quinoa salad and turkey meatball lunches and dinners when they often stayed late, and played with ping-pong or Nerf guns.

The company's strategy was a common one: blanketing the U.S. to thwart competitors rather than focusing on profit in a few cities.

Beepi spent a fortune to entice buyers and sellers through radio and Facebook ads, spending an average of $1,730 on advertising per vehicle in most of its markets in the third quarter of 2016, according to fundraising documents issued last fall.

Beepi was whipsawed by cars that sat unsold for a month, and that Beepi therefore had to purchase. Losses on those cars could reach more than $5,000 per high-end car, former employees said.

Revenue for the first half of last year was $50 million, up about 40% from the previous six months. But with little revenue from add-on services like auto repair, Beepi was losing up to $5 million a month last year, the documents show. Costs were falling, but profitability wasn't forecast until 2018.

By mid-2016 CEO Ale Resnik hunted for cash to stanch the losses, but investors were spooked, former employees said. Mr. Resnik was in advanced talks with a Chinese company to raise tens of millions of dollars, he told staffers, but the deal crumbled in November.

Most of Beepi's staff was laid off in December, and the startup announced it was headed to liquidation in February.

In an email, Mr. Resnik said he takes responsibility for missing goals.

Employees say they believed the business would have proved sustainable if they were given more time. "It was clear to us internally how to get there," said Tyler Infelise, Beepi's head of product.

1MDB

Continued from Page One

mally charged, while many of the alleged Malaysian conspirators are living overseas. They include Jho Low, a 35-year-old Malaysian who the U.S. Justice Department believes directed the fraud, and who has been living in Thailand and China.

Attempts to reach Messrs. Low and Al Qubaisi weren't successful. Both have previously denied wrongdoing.

The Justice Department filed civil lawsuits last summer seeking to seize assets worth more than $1 billion—including mansions in Los Angeles and New York, as well as some of the rights to profits from the movie "The Wolf of Wall Street"—which it claims were financed with money from 1MDB. The department is building a criminal case against Mr. Low for alleged money laundering among other potential charges, according to people aware of the matter.

Before the scandal was publicized in 2015, IPIC was a key business partner of 1MDB, helping guarantee $3.5 billion in bonds that Goldman Sachs Group Inc. sold for the Malaysian fund. Under the cover of these dealings, IPIC executives, including Mr. Al Qubaisi, helped Mr. Low and officials from 1MDB siphon billions of dollars from the fund, the Justice Department alleged. When a consortium led by Deutsche Bank AG pulled a loan to 1MDB over concerns about the collateral, IPIC stepped in with an emergency loan of $1 billion.

But as the scandal erupted, relations deteriorated between Malaysia and Abu Dhabi, and both sides began trading public accusations over who was to blame.

The agreement Saturday would repay the emergency loan that IPIC made to 1MDB, plus interest the Abu Dhabi fund paid when 1MDB was unable to service its bonds. Malaysia will pay IPIC about $600 million by the end of July and another $600 million by the end of December, the people said.

The agreement doesn't resolve the $3.5 billion in funds the Justice Department alleges was transferred from 1MDB to a shell company in the British Virgin Islands controlled by Mr. Al Qubaisi. That shell company had a similar name to an IPIC subsidiary. Abu Dhabi says IPIC or the subsidiary never received the money; Malaysia claims the shell company was a de facto part of IPIC.

Hundreds of millions of dollars of 1MDB money also allegedly found their way into the accounts of Malaysian Prime Minister Najib Razak via a chain of intermediaries, including the disputed shell company, according to court documents. Much of that money was returned to the web of offshore companies from where it came, records show. Mr. Najib has said the money was a donation from Saudi Arabia and that most of it was returned. The Malaysian attorney general has cleared him of any wrongdoing.

$3.5B

Amount of additional disputed payments between 1MDB and IPIC

A company controlled by Mr. Najib's stepson, Riza Aziz, also received hundreds of millions of dollars originating from 1MDB and transferred to him by intermediaries, the Justice Department said. He has denied wrongdoing.

Negotiations between IPIC, 1MDB and the Malaysian government broke down on several previous occasions, including in January. Abu Dhabi merged IPIC with another state fund called Mubadala Development Co. earlier this year. The new fund is called Mubadala Investment Co.

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WORLD NEWS

France at Crossroads as Voters Go to Polls

Election, coming amid high uncertainty and security, could help set nation's place in EU

BY WILLIAM HOROBIN AND JOSHUA ROBINSON

PARIS—French voters headed to the polls Sunday for the first round of a closely contested presidential election that has turned into a referendum on the nation's place in the European Union and the future of its generous entitlement system, amid heightened security and terror fears.

Uncertainty was running high as polls showed a tight race with two mainstream contenders and two antiestablishment politicians seeking to pull apart the political and economic order that has prevailed in France and Europe for the past six decades.

The top two finishers will go head-to-head in a runoff on May 7, unless any one candidate garners more than 50% of Sunday's vote.

About 50,000 additional police and gendarmes were deployed to protect voters and polling places, as France remained in a state of emergency after a spate of terror attacks over the past two years.

A gunman on Thursday shot and killed one police officer and wounded two others on Paris's Champs-Élysées. Two days earlier, police detained two men in the southern city of Marseille suspected of planning an imminent attack.

Voters lined up to cast their votes during the first round of the French presidential election on Sunday in Montpellier, France.

GUILLAUME HORCAJUELO/EUROPEAN PRESSPHOTO AGENCY

As of 5 p.m. local time, 69.42% of voters had cast ballots, according to the Interior Ministry, slightly below the 70.59% turnout at that point in the 2012 election. Still, the numbers defied predictions by some analysts that many voters would sit out the election.

A poll conducted Thursday and Friday by survey firm BVA showed Emmanuel Macron, a centrist pro-EU candidate, and Marine Le Pen of the far-right National Front—who has said she wants to ditch the EU's common currency, the euro, and hold a referendum on leaving the bloc altogether—at the front of the pack, each with about 23%.

Trailing them was left-wing firebrand Jean-Luc Mélenchon, with 19.5%. He wants to pull France out of the EU unless the bloc bends to his demands to scrap treaties that limit government spending. François Fillon, a social and fiscal conservative, was in fourth place half a point behind, the poll showed. The poll has a 2.5-percentage-point margin of error.

Polling firms say many voters planning to cast a ballot still hadn't picked a first-round candidate at the end of the week. According to the BVA poll, 23% of people intending to vote said they could still change their mind.

Ms. Le Pen and Mr. Mélenchon have also said they want France to leave the U.S.-led North Atlantic Treaty Organization military alliance.

Also at stake in Sunday's vote is the fate of France's big-hearted state. Ms. Le Pen and Mr. Mélenchon are promising to reinforce pension and holiday entitlements. Messrs. Fillon and Macron say the time has come to bring benefits in line with France's debt-laden public finances.

Nicolas Lenepveu, a 34-year-old who works at a startup, said he cast his ballot on Sunday for Mr. Macron. "I think he is quite in touch with reality, with how the job market works." Mr. Macron has said France needs to change its rigid labor laws to make it easier to hire and fire workers.

Voting in the same Paris district, Maxim Doucet, an information-technology worker, said he chose Mr. Mélenchon. "Considering the state of the world, and following on from Brexit and Trump, we need to change something up," Mr. Doucet, 32, said. He described Mr. Mélenchon as "like the French Bernie Sanders."

At the start of the year, Mr. Fillon and Ms. Le Pen held a comfortable lead in polls, which projected him beating her in the second round as voters rallied against the National Front leader.

But Mr. Fillon's campaign suffered a blow after a newspaper reported he had hired his wife and two children as parliamentary assistants, paying them hundreds of thousands of euros in state funds. In March, an investigative magistrate notified Mr. Fillon he was suspected of embezzlement for providing his family with fake jobs. Mr. Fillon has apologized for hiring relatives but denied allegations the jobs were fake.

Mr. Fillon's ensuing collapse in opinion polls thrust Mr. Macron, a pro-business former economy minister, into pole position.

In recent weeks, however, Mr. Macron's left flank has come under attack from Mr. Mélenchon, a fiery, Mao jacket-wearing leftist who has cast himself as the champion of the working class.

Mr. Mélenchon's surge scrambled the voting math once again, as polls showed many on the left were tempted to abandon Mr. Macron.

French Vote Is a Referendum on Economic Reforms

BY GREG IP

ANALYSIS

French voters are in a surly mood: As they headed to the polls Sunday, they stood ready to send a complete outsider—perhaps from the far left or the far right—to a runoff in the presidential election.

The cause of this misery isn't hard to find. France's economy is among the sickest of the advanced countries. Unemployment has been around 10% for four years and is well above the European Union average. Per capita incomes are no higher than in 2007.

Marine Le Pen, leader of the far-right National Front and one of four front-runners, lays the blame at the feet of the European Union and the euro, which she claims have made it impossible for French industry to compete with Germany's. Her solution: Leave.

Jean-Luc Mélenchon, a former communist and another favorite, instead blames fiscal austerity. He too would renegotiate France's membership in the EU.

The Trouble With France

France suffered from weak economic growth even before the 2008 financial crisis, and a labor market that discourages permanent employment is a major reason.

Annual per capita GDP growth in the OECD, 1990-2007

U.K.	2.6%
Australia	2.2
Spain	2.2
Netherlands	2.1
Sweden	2.1
Austria	2.0
U.S.	1.9
Belgium	1.8
Canada	1.7
Netherlands	1.5
France	1.4
Italy	1.2

Share of young workers on temporary contracts in 2015

Spain	70.5%
France	59.6
Italy	57.1
Sweden	55.9
Germany	53.6
Netherlands	53.4
Belgium	36.6
Austria	35.8
Greece	33.3
Canada	31.3
U.K.	15.0
Japan*	14.1

*Applies a maximum duration threshold of one year to classify jobs as temporary employment.
Source: Organization for Economic Cooperation and Development

THE WALL STREET JOURNAL.

Yet France's problems long predate the euro crisis and the austerity that followed. From 1990 to 2007 France had the second weakest per capita economic growth of advanced economies according to the Organization for Economic Cooperation and Development. Only Italy's was worse.

The reasons are numerous but the most important is an overregulated and inflexible labor market that has discouraged hiring and investment, undermined productivity and left too many French workers undereducated or under-skilled.

French labor reforms sparked demonstrations in Paris in 2016.

THOMAS SAMSON/AGENCE FRANCE-PRESSE/GETTY IMAGES

A few statistics bear this out. While just 8% of workers are unionized, fully 90% are covered by collective agreements. The centralization of bargaining makes it almost impossible for companies to calibrate hiring to plant-level needs. It is time consuming and costly to fire a worker. Income and payroll taxes are nearly 50% of the average wage. These problems persist because French voters, despite their hunger for change, have punished any president who sought to fix the underlying problems.

Ironically it is the socialist incumbent François Hollande who has been boldest. Led by his youthful economy minister, Emmanuel Macron, Hollande injected more competition into product markets such as for legal services and bus transport, then tackled the labor market with plans to decentralize bargaining and ease rules for laying off workers. The moves met a backlash within the socialist party and on the streets. The reforms were watered down, one reason that Mr. Macron quit and is now contesting the presidential election as the head of a new party.

France's labor market has, at long last, begun to recover; job growth last year was relatively healthy. The reforms have shown some signs of success, such as a drop in dismissal-related job disputes.

Ms. Le Pen and Mr. Melenchon, though ostensibly from opposite ends of the political spectrum, are largely in agreement on labor issues: They think Mr. Hollande's reforms have gone too far and would scrap them. By contrast, Mr. Macron and François Fillon of the conservative Republicans would push the reforms further. French voters are thus not deciding whether their economy remains integrated with Europe, but whether it will make the changes necessary to thrive in it.

Finance Leaders Address Global Fears

BY IAN TALLEY AND TOM FAIRLESS

WASHINGTON—Economic leaders from around the world sought to find common ground Saturday, worried that rising geopolitical tensions risk derailing an accelerating global economy.

While the election in France threatens to upend the European Union and revive market paroxysms in the region, it was the Trump administration that took center stage at the semiannual meeting of the World Bank and International Monetary Fund member countries.

Though finance chiefs have recently feared global politics—such as the French elections, strife in the Middle East and a standoff with a nuclear-armed North Korea—could spoil a long-awaited worldwide economic recovery, unease over U.S. policies—such as the possibility of Washington starting a trade war with China—dominated discussions between the world's finance ministers and central bankers.

"While the outlook is improving, growth is still modest and subject to heightened political and policy uncertainties," the International Monetary Fund's governing committee said in an official statement on Saturday.

IMF Managing Director Christine Lagarde.

ZACH GIBSON/AGENCE FRANCE-PRESSE/GETTY IMAGES

"We have probably moved from high financial and economic risks to more geopolitical risks," IMF Managing Director Christine Lagarde said Saturday.

Earlier in the week, the IMF forecast the global economy to hit its fastest pace in five years as a strengthening U.S. gathers steam, emerging markets recover from a commodity bust and the European and Japanese economies show signs of finally returning to health.

The global economy faces numerous challenges, including weak productivity growth, high debt levels and potential financial turmoil in the U.S. and China, the IMF said.

Foreign governments are particularly nervous over the direction of U.S. economic and foreign policy. Two chief concerns are whether Washington will deliver on threats to levy sanctions against trade partners and if President Donald Trump might counter North Korea's aggression with force. Economists warn the first—such as if the administration moves ahead with a proposal to curb steel imports—could trigger a trade war that could potentially shave 2 percentage points off global growth, according to the IMF. The second, analysts worry, could ignite a dangerous regional conflict.

Recent gyrations in global markets show investors are jittery and less optimistic about the Trump team's ability to goose U.S. growth with tax cuts and infrastructure spending. And some governments are worried the new U.S. government could expose the world's largest economy to fresh debt problems if its tax cuts don't stimulate growth to the degree the administration projects.

When finance leaders from the world's top 20 economies met last month in Germany, many "were really upset, sometimes silent...in the face of positions that were expressed forcefully during the campaign and again during the first weeks of the administration," said Michel Sapin, France's finance minister, in an interview Saturday.

Now, say Mr. Sapin and other ministers, officials are waiting to see whether the Trump team's combative rhetoric turns into actual policy.

"Studies are being carried out," said Austrian Finance Minister Hans Jörg Schelling, but it remained to be seen what policies would emerge. Fears that the U.S. might move toward isolationism and protectionism under the new administration had created uncertainty, but weren't yet being translated into practice, said Ewald Nowotny, who sits on the **European Central Bank**'s rate-setting committee.

—Yuka Hayashi contributed to this article.

Germany's Anti-Immigrant Party Head Pushed Aside

BY ANTON TROIANOVSKI

BERLIN—Germany's anti-immigrant party further sidelined its embattled leader this weekend and chose two lesser-known faces to lead it in national elections later this year, another sign of the disarray that has swept the country's upstart populist movement.

At its national convention in Cologne, the Alternative for Germany party declined to even consider a motion by Frauke Petry, the party's co-chairman and its best known member, that called on the four-year-old party to seek to govern in coalition with other parties and to chart a more moderate political course.

The rejection was another blow to Ms. Petry. Last week, she had said she wouldn't seek a spot on the AfD's election ticket, a concession to other party officials who have rebelled against her leadership.

Instead, the AfD on Sunday chose a 76-year-old lawyer and former newspaper editor, Alexander Gauland, and a 38-year-old business consultant, Alice Weidel, to lead the ticket for the Sept. 24 national election, in which Chancellor Angela Merkel will stand for a fourth term.

The AfD's disunity is a contrast to France's Marine Le Pen, who has successfully galvanized her National Front party around a message critical of immigration, Islam, and the European Union.

Alexander Gauland, right, with Frauke Petry on Sunday in Cologne.

WOLFGANG RATTAY/REUTERS

ANIL USYAN/REUTERS

Relatives carried the coffin of one of as many as 150 victims a day after the attack in which gunmen got past multiple checkpoints.

Afghanistan in Mourning

Scores died in a Taliban attack Friday on the army's northern headquarters

By Jessica Donati And Ehsanullah Amiri

KABUL—Afghanistan observed a day of mourning Sunday after a Taliban attack on the army's northern headquarters Friday left at least 170 people dead, Afghan officials said, in the militant group's deadliest assault since it was ousted from power in 2001.

The Afghan army had initially said just 11 people had been killed in Friday's attack, carried out by militants who breached the base hidden in military vehicles, but admitted the higher death toll after it was leaked to the media over the weekend.

Foreign and provincial officials accused the army of a coverup that could have a damaging impact on the public's trust in government institutions. Both the army and the office of Afghan President Ashraf Ghani declined to comment on that accusation.

The president's office said Mr. Ghani traveled to the city of Mazar-e-Sharif, where the base is located, on Saturday, but didn't comment on the details of attack. "Ask the defense ministry," a spokesman for the president's office said. A defense ministry spokesman couldn't be reached through the weekend.

The Taliban is waging an increasingly deadly insurgency against the foreign-backed government, with at least half a dozen provincial capitals under threat of being overrun this year. The group controls or influences close to half the country, having made rapid gains across Afghanistan's mostly rural population since most U.S.-led coalition troops withdrew in 2014.

Friday's attack also highlighted the vulnerability of even the country's most fortified structures. In January, an attack inside the governor's compound in Kandahar killed more than a dozen people, including the United Arab Emirates' ambassador and five other envoys. It came only months after a suicide bomber struck near a dining hall at the U.S. military's largest base at Bagram Air Field in November, killing and wounding more than 20 people.

Afghan and foreign officials said the Taliban gained access to the army's regional headquarters in Balkh province in military vehicles, which the militants often capture from local forces, pretending to have wounded soldiers on board. It was unclear how many checkpoints the Taliban were able to clear before detonating one of the vehicles and proceeding to the dining hall and mosque inside the base.

The timing of the attack at around 1:30 p.m. local time caught crowds of soldiers unarmed, as they were having lunch or attending Friday prayers at the mosque.

The military vehicles were equipped with mounted heavy machine guns and the Taliban had army-issued M16 rifles, which allowed them to mow

President Ashraf Ghani traveled to Mazar-e-Sharif, where base is located.

down large numbers of soldiers who were caught off-guard, according to Afghan military officials. The militants then took cover inside the facilities, resisting the elite Afghan commandos called to respond to the attack for about five hours until five of them were killed and a sixth was captured alive.

"Prayers were about to finish when the assailants started shooting," said Ahmad Jawid Salim, a spokesman for Afghan commandos in the north. "There were around 100 dead and wounded bodies lying on the ground inside the mosque when the commandos got in."

A U.S. military spokesman declined to say whether coalition troops stationed nearby had helped the commandos clear the base, but said none were wounded in the attack.

Provincial officials said the Afghan intelligence agency had warned the corps commanders about a possible attack at the base only days before.

Soldiers recovering in a hospital in Mazar-e-Sharif said the attackers must have had connections inside the base to make it through seven or eight checkpoints and that there was no accountability among the powerful commanders there.

"People come and go, using the army ranger vehicles for their own personal business," said one young soldier in his hospital bed, interviewed on local news outlet Tolo News. "There is no accountability in this government. What can I say? There's nothing I can do."

The Taliban published pictures on social media of 10 militants dressed in Afghan army uniforms standing in front of the group's symbolic white flag. The group said the attack was launched as an example of their coming spring offensive, which is usually announced around this time of year.

DETAIN

Continued from Page One

Yonhap News Agency, which first reported the arrest, said Mr. Kim was detained, citing unnamed sources and identifying Mr. Kim only by his surname.

The Pyongyang University of Science and Technology, known as PUST, was founded in 2010 by James Kim, a Korean-American businessman and Christian. He had earlier founded the Yanbian University of Science and Technology in northeastern China, where Yonhap reported that Mr. Kim had taught in the past.

Both universities have made a practice of hiring predominantly Christian faculty.

Yonhap reported that Mr. Kim, the professor, was in his late 50s and had been involved in aid work in North Korea. It said he was in the country to discuss relief activities. The reason for his arrest was unknown, Yonhap reported.

PUST, in its statement, said that "this detention is related to an investigation into matters that are not connected in any way with the work of PUST." It declined to comment on anything Mr. Kim may have been alleged to have done but that is separate from his teaching work.

A number of humanitarian groups with ties to the U.S. do aid work in North Korea. Many of them are associated with Christian organizations.

North Korea has arrested and sentenced a handful of U.S. citizens in recent years, including Kenneth Bae, a Korean-American missionary whom the state held for more than two years on charges of trying to overthrow the North Korean government. Mr. Bae was freed in November 2014 after a trip to Pyongyang by James Clapper, the U.S. director of national Intelligence.

In the past, high-profile U.S. envoys have been dispatched to North Korea to secure the release of U.S. citizens. In 2009, former U.S. President Bill Clinton traveled to North Korea and met with then-leader Kim Jong Il to secure the release of Laura Ling and Euna Lee, two journalists who had been detained for illegally entering the country.

Mr. Warmbier was arrested after allegedly trying to steal a political poster from a hotel where he was staying in January 2016. Mr. Warmbier, who was 21 years old at the time of his sentencing, made a tearful apology in a government-run news conference in Pyongyang before his sentencing.

Mr. Warmbier's parents, Fred and Cindy, appeared on Fox News earlier this month to call on Mr. Trump to help bring their son home. "President Trump, I ask you: Bring my son home," Mr. Warmbier's father said.

Less is known about Kim Dong-chul, a Virginia resident who was 62 years old when he was convicted in April last year on charges of spying and stealing state secrets.

A Korean-Canadian pastor, Lim Hyeon-soo, has been detained in North Korea since February 2015. He was accused of committing "state subversive plots and activities" and sentenced to life in prison with hard labor.

—Chun Han Wong in Beijing contributed to this article.

Duterte's Drug War Stumbles In Rehab Effort

By Jake Maxwell Watts

MANILA—The government of Philippines President Rodrigo Duterte is giving up on supersize drug rehabilitation centers, shifting the burden of treating addicts to community-level programs with little medical expertise.

Rehabilitation was the other half of Mr. Duterte's bloody war on drugs, a crackdown that has claimed the lives of more than 7,000 people and targeted four million addicts whom the president has said he would "be happy to slaughter." Nearly 1.3 million addicts and dealers, told they need to surrender or face a similar fate from vigilantes and police, have presented themselves for compulsory rehabilitation.

Treating the flood of self-confessed users presents a monumental task for the government. Its retreat from supersize rehab centers, a major pillar of its rehabilitation efforts, adds to criticism that the drug war is focused on extermination rather than healing.

One reason the government is reversing course is that far fewer people than expected have been classified as sufficiently drug-dependent to be sent to the centers—an indication to some that the president has overstated the country's epidemic of methamphetamine, a drug known locally as shabu. The impoverished country has also struggled to fund its rehabilitation programs, another reason, along with the siting of centers far from patients' families, that admissions have been low.

The government's flagship facility north of Manila, financed by a Chinese businessman and intended to eventually hold 10,000 addicts, has only 179 patients. The existing building, finished last year in the project's first phase with a capacity of 500, won't be expanded, according to government officials.

"I don't suppose that we will be continuing with the concept of mega rehab," John Castriciones, undersecretary for operations at the Department of the Interior and Local Government, told local media this month. Mr. Castriciones's department, which oversees community rehabilitation, didn't respond to requests for comment on the policy change.

The government says it will still use the rehabilitation centers for the most severe addiction cases, but the vast majority of people surrendering to police will now get help from community leaders, who mental-health experts say are ill-equipped to serve them.

Ronnie Taguba, the head of a small community, known as a barangay, of about 4,000 people in Manila, is one such leader. Most Sundays, Mr. Taguba rises at 5 a.m. and goes jogging around the cinder-block and corrugated-iron houses of his neighborhood, followed by around 30 wheezing drug addicts. At other times, he holds zumba sessions, followed by a period of Bible study. "We talk to them and say it's hard to go to jail," said Mr. Taguba, who supports the president's drug war. "We give them protection, but say if you continue to use drugs, you will go to jail."

After surrendering to police, self-declared addicts are triaged into groups by a medley

179
Patients in a drug facility north of Manila intended to hold 10,000

of health workers, psychiatrists and doctors, based on their behavior during interviews. The most severely addicted are confined in government rehabilitation camps, run by medical professionals, where they participate in a program involving strict daily routines.

The government said last year it would increase the budget for rehabilitation by five times to three billion Philippine pesos ($60 million) in 2017. No figures are available for the security costs involved in Mr. Duterte's war on drugs.

The president in public has largely focused on police efforts to rid the country of shabu drug addicts and dealers. Officials routinely say the country has as many as four million drug users, although the Philippines' Dangerous Drugs Board counted 1.8 million drug users in the 100 million population in a 2015 study.

The campaign's carnage has been decried by opposition parties, the country's Roman Catholic Church and human-rights organizations. But the violence hasn't dented the president's approval ratings, which poll as high as 80%. Supporters say he is ridding the country of a scourge that has destroyed families and fueled corruption.

ERIK DE CASTRO/REUTERS

A government-run rehab center in Taguig, near Manila, in December.

WORLD WATCH

DJIBOUTI

U.S. Defense Chief Visits African Ally

U.S. Defense Secretary Jim Mattis visited Djibouti to bolster ties with the tiny and impoverished African country, home to an important base for U.S. counterterrorism forces.

Mr. Mattis, the first Trump administration official to visit Djibouti, planned to meet with President Ismail Omar Guelleh and greet U.S. and French troops. He was accompanied by Marine Gen. Thomas Waldhauser, head of U.S. Africa Command.

The U.S. operates drone aircraft from Djibouti for surveillance and combat missions against al Qaeda-affiliated extremists in Somalia and elsewhere in the region.

China is building a military base in Djibouti, a former French colony in the Horn of Africa.

For years, the U.S. has operated a fleet of armed drones, initially from Djibouti's Camp Lemonnier, where French troops also are based, and now from a separate airfield. Djibouti took on added importance to the U.S. military after the Sept. 11 attacks, in part as a means of tracking and intercepting al Qaeda militants fleeing Afghanistan after the U.S. invaded that country in October 2001.

The U.S. has a long-term agreement with Djibouti for hosting American forces, a pact that was renewed in 2014.

Djibouti has a highly prized port on the Gulf of Aden. The country is sandwiched between Somalia and Eritrea, and also shares a border with Ethiopia.

Mr. Mattis is using the early months of his tenure as defense secretary to renew or strengthen relations with key defense allies and partners such as Djibouti.

—Associated Press

TIM IRELAND/ASSOCIATED PRESS

ACROSS THE LINE: Mary Keitany of Kenya won for the women at the London Marathon on Sunday.

AUSTRALIA

China Key to Easing Korean Fears: Pence

A peaceful end to growing tensions over North Korea's nuclear and ballistic-missile ambitions remains possible thanks to China, U.S. Vice President Mike Pence said.

"The United States of America is determined to work with our allies, and especially with China, to achieve the objective of a nuclear-free Korean Peninsula," Mr. Pence said at a news conference Saturday in Sydney.

"We believe that can occur peaceably, largely owing to the new engagement of China."

Mr. Pence is In Australia as part of a week-long visit to meet with allies in the Asia-Pacific region. He restated earlier warnings that "all options are on the table" for the U.S. to deal with North Korea.

—James Glynn

ISRAEL

Palestinian Stabs Four in Tel Aviv

A Palestinian stabbed and lightly wounded four people in Tel Aviv before being arrested Sunday, police said.

Police spokesman Micky Rosenfeld called the violence a "terror attack" and said the 18-year-old suspect was being questioned by police.

The attack took place on a street near the city's popular beachfront. *—Associated Press*

U.S. NEWS

THE OUTLOOK | By Carolyn Cui, Ian Talley and Ben Eisen

Dollar Gain Could Slam Emerging Borrowers

Emerging-market companies are binging on U.S. dollar debt and that could become a source of trouble in some parts of the world if growth slows, interest rates rise or the dollar resumes its ascent.

Governments and companies in the developing world sold $179 billion in dollar-denominated debt in the first quarter, the most dollar debt ever raised in the first quarter and more than double the amount raised during the same period last year, according to data provider Dealogic.

In all, U.S. dollar debt stood at $3.6 trillion in emerging markets through the third quarter of 2016, an all-time high, according to the Bank for International Settlements. Including local currency debt, emerging-market companies have increased their borrowing by a staggering $17 trillion since 2008, according to the Institute of International Finance.

The International Monetary Fund warned of risks in reports ahead of its semiannual meetings in Washington, saying a bout of investor risk aversion could expose $135 billion worth of corporate credit to repayment problems.

“Emerging-market corporates have made progress in terms of making their economies more resilient, but vulnerabilities remain,” said Tobias Adrian, the IMF's top financial economist. He pointed to 2013's so-called Taper Tantrum, when the Federal Reserve signaled it would end a bond-buying program. Global interest rates soared and emerging-market currencies tumbled, hitting their economies. “We have seen how global interest rates can have negative spillover effects on emerging markets, and those risks are still present.”

Companies with dollar borrowings can be especially exposed. If the dollar rises, it makes the debt more expensive to pay off.

Companies that don't earn dollar revenues, including some telecoms, property developers and retailers, can stumble. Repayment risk is especially high in countries with large external deficits and low levels of foreign-exchange reserves. If the dollar appreciates faster than expected, some corporate borrowers, especially those who derive their revenues largely in local currencies, could find themselves in a currency mismatch and be forced to ask the central bank for help—which not all central banks are positioned to do.

“A rise in the dollar would be a double whammy for countries that have significant current-account deficits and significant amounts of dollar-denominated corporate debt,” said Eswar Prasad, a professor of trade policy at Cornell University.

Borrowers are getting in while rates are still low and investor appetite for more exotic, higher-yielding credit is strong.

After the Latin American and Asian credit crises of the 1990s and 2000s, some countries stocked up on foreign currencies for emergency cash in times of shortages. Many also now better balance borrowing between domestic currencies and foreign debt. That's why vulnerabilities around the globe are mixed.

Countries such as India and the Philippines, which have relatively low stocks of external debt and healthy foreign-exchange reserves, are in better shape, analysts say. Economies such as Malaysia and South Africa, which have small currency reserves and high levels of dollar-denominated debt, are at particular risk. Venezuela and Turkey look especially vulnerable.

“Some could still feel stress, especially where there are pre-existing political or economic strains,” said Maurice Obstfeld, the IMF's chief economist.

A slew of missed payments by major telecom operators in South Africa and Turkey, as well as Venezuela's largest oil producer, have already sounded the alarm for emerging-market corporate borrowers, reflecting the increasingly challenging environment of rising borrowing costs, sluggish earnings growth, low commodity prices and growing trade protectionism.

“When we see companies with large foreign-exchange debt, we will just walk away right now,” said Elena Tedesco, an emerging-market equity manager at Hermes Investment Management. She added the outlook for the Turkish lira is also unclear given the country's political and economic uncertainties.

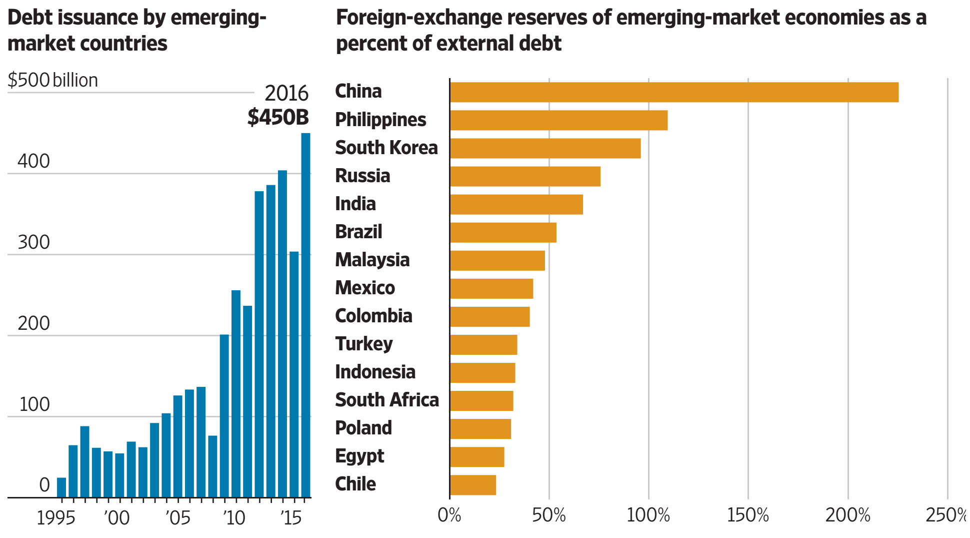
South Africa, which has been running a current-account deficit, saw the fallout when Cell C, the country's third-largest mobile operator, missed interest payments in January on its €400 million bonds, citing rising inflation, a weaker rand and industry uncertainty, according to S&P Global.

In 2016, the number of defaulted dollar bond issues reached 32 in emerging markets, the highest since the financial crisis, according to S&P Global. More companies are poised for further downgrades, the rating agency said.

“There are potential vulnerabilities looking further ahead, particularly if the Fed were to raise rates much more aggressively than what the market has priced at the moment,” said Michael Grady, senior economist at Aviva Investors, which has $422 billion of assets under management.

Debt Boom

Companies and governments in developing economies are loading up on U.S. dollar debt, which could become a problem in some markets.



Source: Dealogic (debt); Capital Economics (foreign-exchange reserves)
THE WALL STREET JOURNAL.

Disapproval of President Trump Grows in Latest Poll

By Rebecca Ballhaus

Americans have become increasingly dissatisfied with President Donald Trump as he nears his 100th day in office, with views of his effectiveness and ability to shake up Washington slipping, a new Wall Street Journal/NBC News poll finds.

More than half of Americans—some 54%—disapprove of the job Mr. Trump is doing as president, compared with 40% who approve, a 14-point gap. That is a weaker showing than in the Journal/NBC News poll in February, when disapproval outweighed approval by 4 points.

While Mr. Trump still draws overwhelming support from his own party, he risks losing the nation's political middle ground. Among independents, disapproval rose markedly, to 54%, while 30% approved of his job performance. That 24-point gap compares with a 9-point margin of disapproval in February.

The survey of 900 adults found some bright spots for the president, including strong support for the missile strikes he ordered on Syria in response to a chemical attack there in early April. More than six people in 10 approved of the military action, and half approved of his handling of Syria overall.

Separately, nearly as many people in the survey approved as disapproved of Mr. Trump's handling of the economy.

Still, Mr. Trump enters his fourth month in office with a lower job-approval rating than posted by the prior 11 presidents dating to Dwight D. Eisenhower, an analysis of WSJ/NBC and Gallup polling shows. The only other president with job approval under 50% at this point in his tenure was Gerald Ford, who notched 48% support after assuming the presidency following Richard Nixon's resignation in 1974.

The largely negative view of Mr. Trump comes as he nears the 100-day benchmark after a turbulent start in office. While his administration successfully guided his Supreme Court nominee, Neil Gorsuch, to confirmation, efforts to replace the Affordable Care Act, a central campaign promise, have failed so far. The administration hasn't made substantial progress on its ambition to overhaul the tax code. Some goals, such as removing the U.S. from a 12-nation trade pact, have been accomplished through his executive powers.

Notably, the new survey found a historically high share of Americans—some 57%—believe the government should do more to solve problems and help people, compared with 39% who said the government is doing too many things better left to business and individuals. Democrats have long said government should do more to help people, but the new survey found other groups agreeing in larger numbers. Some 59% of independents said government should do more, up from 38% in late 2010, when the tea-party movement was growing. The percentage of Republicans calling for more government action grew to 28%, up 11 points.

Mr. Trump has laid out a nuanced stance on government services. He has broken with many in his party to defend the social safety net, pledging not to cut Medicare or Social Security. At the same time, he has proposed a budget that would scale back domestic spending, and nonpartisan government analysts say the health bill he backed would add to the ranks of the uninsured.

“Voters very clearly wanted change in 2016,” said Jeff Horwitt, a Democratic pollster whose firm conducted the Journal/NBC News survey with the firm of Republican pollster Bill McInturff. “The question is, is the direction that he's taking things the change that the voters wanted and were hoping for?”

Americans are roughly split on the president's handling of the economy, with 44% saying they approve and 46% saying they disapprove. Mr. Trump, who has invited dozens of business executives to meet with him at the White House, as well as labor leaders, often touts his efforts to create jobs, and the president has signed a series of measures intended to roll back regulations on businesses.

In other assessments of Mr. Trump, 35% of poll respondents said he was off to a good or great start in office, compared with 54% who said the same of Mr. Obama eight years ago. Nearly two-thirds of Americans, some 64%, said Mr. Trump was off to a poor or fair start.

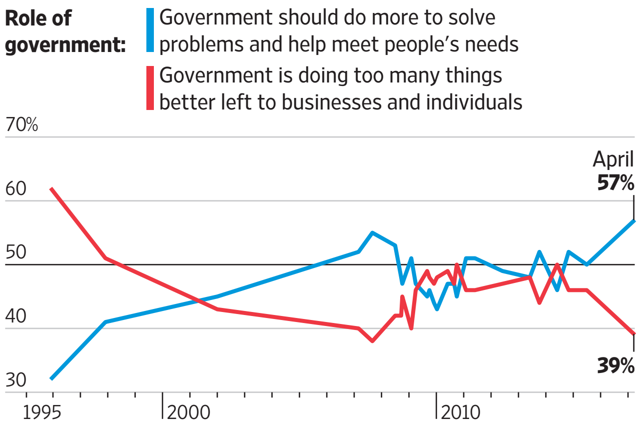
About one-third of Americans said Mr. Trump has been more effective than past presidents, a larger share than said so of George W. Bush or Bill Clinton near the start of their terms. Some 44% said Mr. Trump has been less effective than prior new presidents.

The assessments of Mr. Trump's job performance are colored by views of his personal qualities. The share who said Mr. Trump was honest and trustworthy, effective in getting things done and able to change business in Washington all declined from February.

The Wall Street Journal/NBC News poll was based on nationwide telephone interviews with 900 adults from April 17-20. It has a margin of error of plus or minus 3.27 percentage points, with larger margins of error for subgroups.

A Call for More

The percentage of respondents saying they want the federal government to do more to solve people's problems is at its highest level since the question was first posed in 1995.



Source: WSJ/NBC News telephone polls. Most recent of 900 adults conducted April 17–20, margin of error: +/-3.2 pct. pts.
THE WALL STREET JOURNAL.

Marchers Take to the Streets To Show Support for Science

As Diana and Brendan Sun waited for a subway Saturday in New York, they carried signs urging people to “thank a scientist” if they had ever used a cellphone, computer, or television or taken medicine for diabetes, a cold, or high blood pressure.

By Daniela Hernandez in New York and Betsy McKay in Atlanta

The mother and son were on their way to the first March for Science, one of a number of rallies intended to defend perceived global attacks on science. The demonstrations—led by scientists and originally proposed online—are part of a movement among researchers toward increased public activism. The Suns were among the tens of thousands who attended the more than 500 rallies world-wide.

Among the movement's goals: to push for evidence-based legislation and to communicate to the public the social and economic impacts of scientific research. Dr. Sun, a dermatologist, and her son also hoped to change the public's perception of scientists, who have long been portrayed as villains in movies and books like “Frankenstein,” they said.

Anna Parker, a masters student in zoology attending the march in Laramie, Wyo., said she hoped the march would spark conversations among people of different political leanings about the role science has in local communities, including its part in job creation. She said she fears the proposed cuts to research funding will limit her ability to work as a scientist.

Representatives for companies participating in the march had a similar view. “We see it as a great opportunity to get out and showcase science...and its contributions to humanity,” said Gene Kinney, the president and chief executive of Prothena Corp., a biotech company focused on disorders like Parkinson's disease.

In advance of Saturday's events, the organizers of the March for Science stressed that the rallies weren't an indictment of the Trump administration or any one political party. Representatives from scientific organizations like the American Association for the Advancement of Science and the Society for Advancement of Chicanos and Native Americans in Science, said during a news conference Wednesday that decades of federal funding cuts for research, scientific misinformation, and worldwide attacks on the free exchange of ideas were drivers for the movement.

The march is “international...therefore it can't just be about Trump,” said Rush Holt, the president of AAAS, a March for Science partner, in an interview. Reducing the marches to that “diminishes the significance,” the physicist and former Democratic congressman added.

Participants and speakers at several of the rallies also said the gatherings weren't partisan, but they sharply criticized a Trump administration proposal to slash the budgets of federal agencies such as the **National Institutes of Health** and the **Environmental Protection Agency**, as well as its stance on climate change.

The marches were held on Earth Day, which was started in 1970 to increase awareness of environmental protection.

Top officials from the Centers for Disease Control and Prevention, a federal government agency based in Atlanta, didn't participate officially in the march in that city, which attracted about 12,000 participants, according to its organizers. “The agency has no involvement and does not determine what employees do on their personal time,” said Kathy Harben, an agency spokeswoman.

At the events in New York and Washington, D.C., some attendees carried signs with pro-environment, pro-science and anti-Trump messages. Some demonstrators said they were concerned about the Trump administration's immigration policies and how they could affect research and the country's ability to continue to be a leader in science in technology.

When the New York march passed by Trump International Hotel & Tower in Midtown Manhattan, protesters booed and chanted “Lock him up.”

Along the march route in New York, where some vendors sold anti-Trump merchandise, James MacDonald, an actuary, carried a sign in support of President Donald Trump. Mr. MacDonald said the protesters were pretending the march was about science, when it really was in opposition to the president and his policies.

Some scientists who chose to sit out the march said they worried marching would further politicize science and undermine efforts to work with legislators in both parties to craft science-informed policies related to health care and the environment.

—Ellie Kincaid, Joe Barrett and David Cole contributed to this article.

RICK MAJEWSKI/ZUMA PRESS

Tens of thousands took part in more than 500 rallies world-wide, including Chicago, above.

IRAN

Continued from Page One

parents in the family's London apartment. Now, her father faces an agonizing choice.

The U.K. has offered to issue temporary travel documents and have embassy personnel ferry Gabriella home. Mr. Ratcliffe wants her back. Yet Gabriella's prison visits provide his wife's sole relief—the few, precious hours when she can hold her daughter.

Mrs. Ratcliffe told her husband a prison interrogator had said she would have to agree to have Gabriella move to the prison three nights a week or waive all rights to see her.

"I am not going to have my daughter live in prison," Mrs. Ratcliffe, 37 years old, said. "I am not strong enough to take care of her here."

At least four Americans and five British dual nationals are in Iranian custody and charged with spying, according to U.S. and U.K. officials. The detentions have left the governments the difficult choice of whether to negotiate their release through prisoner swaps or payments.

Such arrests have continued, even after a nuclear deal between Iran and world powers raised hopes of easing tensions with the West. They have presented a dilemma in Washington, London and in Europe, where new administrations consider how to deal with multiple diplomatic issues, including trade and Iran's role in the region.

Each case, every detention, has a human cost. Mr. Ratcliffe has asked U.K. officials if they will make a deal with Iran for the return of his wife and daughter—a question, he said, still unanswered.

U.K. officials have never condemned the arrest, he said: "They keep saying we are concerned. That is not enough. My nightmare is that they will just leave her there to rot."

Officials have pressured him to stop criticizing Iran, he said, because it could hamper talks about his wife's release.

The British Foreign Office said in a written statement: "The Prime Minister and Foreign Secretary have both raised her case with their counterparts in Iran and will continue to do so."

Iran said it doesn't recognize dual nationality, including Mrs. Ratcliffe's U.K. status. The regime has treated such prisoners as bargaining chips with the West. Iranian officials haven't responded to Mr. Ratcliffe's attempts to contact its London embassy. Iran's mission to the United Nations declined to comment.

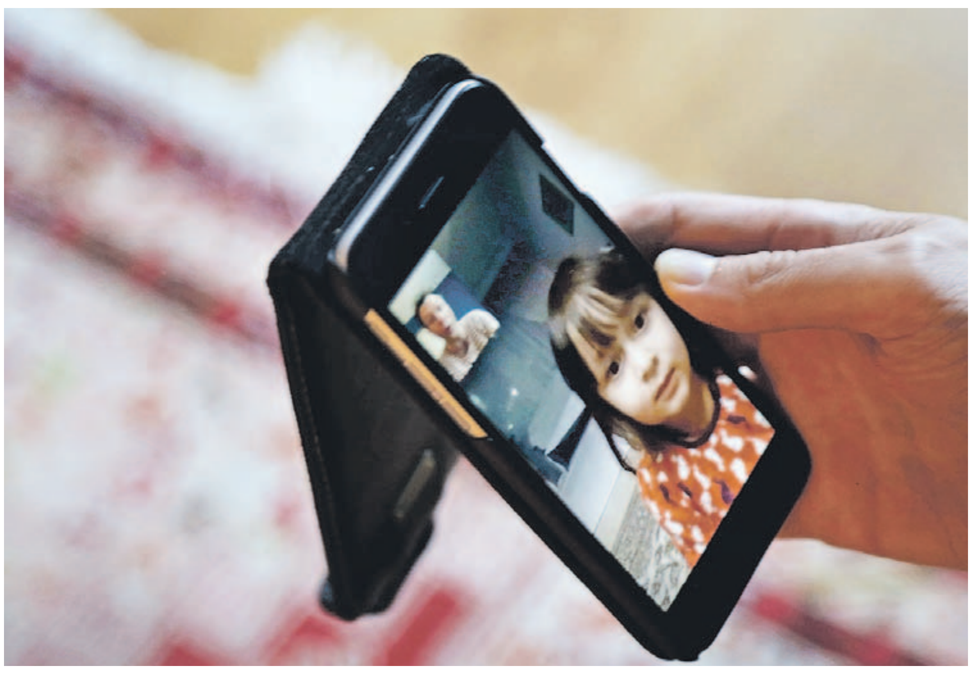
Iranian prison authorities have asked Mrs. Ratcliffe to sign a form for them to keep Gabriella's U.K. passport. Her husband said not to sign anything. He promised not to try to retrieve their daughter without her consent.

The couple has spoken by phone only a handful of times in the past year, their longest conversation lasting just 10 minutes. Mr. Ratcliffe said his wife has been angry, berating him for not doing more. Other times, she despairs.

Mrs. Ratcliffe read her husband what sounded like a farewell note during a recent call. " 'I love you more than I have ever loved anyone else,' " he recited from memory. " 'Please take good care of Gabriella.' "

LAURA EL-TANTAWY FOR THE WALL STREET JOURNAL (3); JESSE NEWMAN/THE WALL STREET JOURNAL

Richard Ratcliffe's wife, bottom, is imprisoned in Iran, leaving the couple's daughter, below, in the care of grandparents in Tehran.



Worlds apart

Nazanin Zaghari arrived alone in London from Iran in 2007 to pursue a graduate degree in communications. She had never lived abroad. A mutual friend soon introduced her to Mr. Ratcliffe, in graduate school for accounting.

He was an hour late for their first date, and she jokingly punched his arm when he arrived. Despite differences in culture and religion, Mr. Ratcliffe said, he found they had much in common—a sense of humor and a middle-class, family-centered upbringing.

Their dates weren't fancy. They took walks, stopping for tea and baked treats, sharing stories about work and family.

On their first Christmas together, Mr. Ratcliffe brought her to meet his family. His grandmother approved, saying she was a lady who showed respect for the elderly.

Three years after they met, Mr. Ratcliffe proposed. They traveled to Iran so he could ask Ms. Zaghari's father for permission to marry. Mr. Ratcliffe promised his future father-in-law he would provide her a lifetime of care.

The couple married in 2009 in a secular ceremony and threw three parties to accommodate their respective cultures. They bought their first house in early 2016. In the living room, Mr. Ratcliffe put up shelves for the silver and wood-carved art given by his wife's relatives.

Mr. Ratcliffe described their lives as apolitical. Their friends included other mixed British and Iranian couples, he said, but no antiregime dissidents that they knew of. He and his wife talked about Iran's detention of dual nationals, he said, but they never thought Mrs. Ratcliffe's annual visits to see family in Iran were dangerous.

Last spring, Mrs. Ratcliffe took Gabriella to spend the Persian New Year with her parents in Tehran.

Mr. Ratcliffe was set to pick them up from the airport in London on April 3. His wife texted him: "Just setting off. Will see you on the other side. Love you." He replied: "Love you. Travel Safely."

His cellphone rang at 5:30 that morning. His brother-in-law called to say Mrs. Ratcliffe and Gabriella had missed their flight over a passport glitch, but it would be sorted out in a few hours. Mr. Ratcliffe fell back asleep.

Three days passed without word. Mr. Ratcliffe called Tehran every hour. He couldn't eat, and he skipped work. "The idea that I hadn't been able to protect them, it broke me," he said. Later, he pieced together what had happened.

A security agent waiting at the check-in counter of Turkish Airlines had asked Mrs. Ratcliffe to follow him to a room. There, the agent took her travel documents and inquired about her work life.

She had been a project coordinator for the Thomson Reuters Foundation, the charity wing of the media company. She organized training programs for journalists in Africa. The foundation had no programs in Iran.

The agent escorted her to the entrance of the departure lounge where her parents waited. He ordered Mrs. Ratcliffe to hand Gabriella to her mother and sent the parents home. Then the agent led Mrs. Ratcliffe away.

> *A year ago, Gabriella was tucked into bed at night with a kiss from her parents.*

Mr. Ratcliffe learned his wife was taken to a jail in the city of Kerman and kept in solitary confinement. He didn't know why she was taken, how long she would remain in custody or how to get her back.

During those early days, Mr. Ratcliffe lingered at the door of the nursery, looking at Gabriella's blanket and stuffed toys in her crib. Walking past the playground, he imagined Gabriella on the slide, yelling in delight as she slid into his arms. He avoided a route home that passed his wife's favorite ice cream shop.

His wife's parents cautioned against drawing attention to her arrest. Iranian intelligence agents had warned them against talking too much and threatened harm. Mr. Ratcliffe bristled at the admonition.

In Iran, Gabriella cried often, her family said. Sometimes, she stood by the front door and called, "Mommy, Mommy, I'm here." Her grandparents were permitted to bring the girl to her mother after 38 days. A prison interrogator gave Gabriella a doll.

Mr. Ratcliffe received the first phone call from his wife 55 days after her arrest. She cried, and so did he.

In June, the Kerman branch of the Revolutionary Guards issued a statement linking Mrs. Ratcliffe with local bloggers and activists who were arrested in 2013. It called her a ringleader of British-funded networks scheming to topple the Islamic Republic.

Mr. Ratcliffe called the allegations "preposterous and completely false." He struggled to see the connection with his wife. After graduation, she had worked for several months in 2009 as an administrative assistant for BBC Media Action, the network's international charity wing. The group had offered online journalism training in Iran. In her job, Mrs. Ratcliffe contacted participants, including people in Kerman, to check on their assignments.

The bloggers ran a popular website called Narenji that covered technology. Four from the group are serving prison sentences of five to 11 years; the others are free on bail.

In July, Mrs. Ratcliffe was taken to Tehran's Evin prison, a ward of the Revolutionary Guard's intelligence unit. She was given three blankets, which she used for her mattress, pillow and cover.

During visits, Mrs. Ratcliffe's parents, toting Gabriella, are blindfolded and guided underground to a meeting room. Gabriella climbs into her mother's lap and together they sing "The Wheels on the Bus." She asks her mother to draw Peppa Pig, a favorite cartoon character, and to make penguins with Play-Doh. After playing awhile, the girl rests her head on her mother's shoulder and falls asleep.

In a recent letter to Gabriella, Mrs. Ratcliffe wrote: "When you opened your eyes to this world for the first time, I could not know you, so young, would soon be subjected to a big lesson, a lesson of pain and suffering."

Into action

After Mr. Ratcliffe decided to raise a fuss about his wife's arrest, he went about his campaign as methodically as his bookkeeping.

He read about Iranian politics and researched cases of other dual-nationals who, like his wife, have been detained. He found human-rights experts and reached out to families in similar predicaments.

His relatives mobilized—siblings, aunts, uncles, cousins. Younger family members set up Facebook and Twitter accounts. Mr. Ratcliffe's sister-in-law started a website, freenazanin.com.

They created an online petition to the U.K. and Iran governments, asking for Mrs. Ratcliffe's release. It has collected nearly a million signatures. The family has staged rallies at the Iranian embassy in London and at 10 Downing Street.

Friends in media and public relations helped Mr. Ratcliffe with news releases. He overcame his shyness to speak on TV and radio, sharing memories. His message is consistent: Help bring home my family.

Mr. Ratcliffe met with Tobias Ellwood, the Foreign Office Minister for the Middle East. Mr. Ellwood discussed the custody of dual national British detainees with Iran's foreign ministry in January, and he met with Mrs. Ratcliffe's father.

Mr. Ratcliffe dashes from work to the tasks of his campaign: a stop at the offices of Amnesty International; a candlelight vigil outside the Iranian embassy.

To fill any spare time, Mr. Ratcliffe works on home improvements. He painted the bedroom and living room. He has hung new curtains. He put up the blue tiles his wife had brought back from an earlier trip to Iran.

"I look around the house and think what can I do for her that would make her happy?" he said.

A world stage

In September, Iran's Revolutionary Court sentenced Mrs. Ratcliffe to five years in prison. A few weeks later, Mr. Ratcliffe flew to New York for the United Nations General Assembly, a gathering of world leaders. He hoped to find diplomats friendly with Iranian officials and willing to plead his wife's case.

He rented an apartment in the Crown Heights neighborhood of Brooklyn, and each morning, dressed in a black suit, he took the subway to Manhattan. He carried a leather briefcase with photos of his family when Gabriella was a baby, and copies of a letter he wrote to Iran President Hassan Rouhani. He also carried two mementos: a light green laptop cover his wife sewed, and Gabriella's favorite toy, a tiny blue figure named Igglepiggle.

He had sent a message to Iran's mission to the U.N. saying he planned to visit the New York City office. When he arrived, Mr. Ratcliffe introduced himself to the guard at the lobby's front desk. He asked to speak to someone on the phone. The guard dialed a number and handed him the receiver.

Mr. Ratcliffe said on the phone that his wife and child had been detained in Iran. He was put on hold to a recording of classical piano. Then he was told that the diplomats were out of the office. He asked if he could leave a letter for Mr. Rouhani.

After half an hour, a woman approached him in the lobby. "I am told you have a letter for the ambassador. They are not here. You should make an appointment," she said.

Mr. Ratcliffe handed the woman a large envelope with a photo of himself and his family taped to one side. #FreeNazanin was written in large, bold letters.

> *Diplomats said their dealings with Iran were evolving after the 2015 nuclear deal.*

While in New York, Mr. Ratcliffe also met with officials of the U.K., Norway and the European Union. Diplomats told him their dealings with Iran were evolving in the wake of the 2015 nuclear deal that halted Iran's nuclear program in exchange for the lifting of international sanctions.

Many echoed a variation of responses he has heard over and over: It is a balancing act. Don't push too much.

After each meeting, Mr. Ratcliffe said, he wanted to scream: *It's morally unacceptable to keep a mother and baby hostage.*

Locked away

In January, Mr. Ratcliffe rolled out of bed on a Sunday morning and checked his phone. On Twitter, he noticed an Iranian journalist had posted a message with the hashtag #FreeNazanin. He messaged an Iranian friend to translate. His phone buzzed minutes later.

Iran's Revolutionary Court had upheld Mrs. Ratcliffe's five-year prison sentence. The court also added a new conviction—knowingly married to a British spy, a charge Mr. Ratcliffe called ludicrous.

He phoned his wife's family in Tehran and then his parents. He emailed relatives. He sent out media statements and fielded calls from reporters. He tried to appear on as many radio and TV news programs as time permitted.

He returned home at about 11 p.m. On the dining-room table sat piles of envelopes containing some 30,000 messages of support mailed from strangers across Europe.

Deadlines Mr. Ratcliffe set for the reunion with his wife and daughter have come and passed: their wedding anniversary, Mrs. Ratcliffe's birthday, Christmas, Persian New Year, the anniversary of the arrest.

He now hopes to have his family back before Gabriella's third birthday in June. "This will not define us," he said. "We will have a normal life after this."

SHANNON

A house for sale in Uniondale, N.Y., last year. For most of 2016, mortgage rates hovered just above 3.5% for 30-year fixed-rate mortgages.

Mortgage Rates Backtrack

Drop to 3.97% for a 30-year fixed-rate mortgage could add fuel to housing market

By Laura Kusisto

Mortgage rates dropped below 4% for the first time since November, providing more kindling to an already hot U.S. housing market as the crucial spring selling season gets under way.

The average rate on a 30-year fixed-rate mortgage dropped to 3.97% for the week ended April 20, from 4.08% a week earlier and 4.3% in mid-March, according to data released Thursday by mortgage company Freddie Mac.

The drop could help encourage buyers who had been put off by rising mortgage rates to dive into the market and prompt others to rush to buy homes before rates rise again.

"We are in the spring, and people are out looking to buy homes," said Len Kiefer, deputy chief economist at Freddie Mac. "These low rates are really going to help out with affordability."

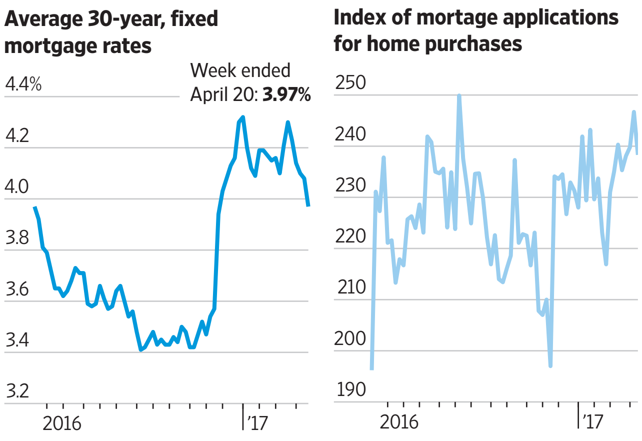
For most of 2016, mortgage rates, which generally move together with yields on the benchmark 10-year U.S. Treasury note, hovered just above 3.5% for the 30-year fixed-rate mortgage.

After the November election, optimism that the U.S. economy would get a boost from Republican plans for a tax overhaul, increased infrastructure spending and reduced regulations helped drive interest rates sharply higher as investors bet on faster growth.

But the tide is turning. Treasury yields, which move in the opposite direction of prices, approached a five-month low last week as many investors worried that turmoil in Syria and North Korea, as well as election uncertainty in France and the lack of progress on tax and spending policy under President Donald Trump, would lead to slower economic growth in the months ahead.

Home Run

As mortgage rates have fallen in 2017, an index reflecting applications for home loans has risen.



Source: Freddie Mac (rates); Mortgage Bankers Association (index)

THE WALL STREET JOURNAL.

Continued uncertainty on geopolitical fronts could help keep rates lower this year.

"Almost the entirety of the Trump bump [to mortgage rates] has been washed away," said Keith Gumbinger, a vice president at HSH.com, a mortgage-information website.

That, in turn, could spur the housing market, economists said. A decline in mortgage rates can reduce monthly mortgage payments or allow buyers to purchase more expensive homes than they otherwise could afford.

Economists said a surge of additional buyers this spring wouldn't be entirely welcome. "It's driving more demand into a market that doesn't have much in the way of supply," Mr. Gumbinger said.

U.S. home prices rose 5.9% in the 12 months ended in January, the fastest rate since mid-2014, according to the S&P CoreLogic Case-Shiller Indices. Data for February are due Tuesday.

The impact of a decline in mortgage rates of about a third of a percentage point would be relatively small in many areas of the U.S. The monthly mortgage payment for a home at the median price of $236,400, assuming a down payment of 20%, would be about $50 less today than a month ago.

The effect would be much more pronounced, however, in high-cost markets, such as California. Monthly mortgage payments would decline by about $100 for buyers purchasing homes of about $600,000. At the same time, the size of a mortgage that such buyers could qualify for could swell by about $25,000, according to Black Knight Financial Services, a mortgage and real-estate technology and data provider.

Lower mortgage rates also could provide a small boost to refinancing activity. The number of U.S. homeowners who could save enough to make refinancing worthwhile has jumped 46% to 4.1 million, from 2.8 million last month, according to Black Knight.

Still, analysts expect the impact on refinancing to be relatively small. The vast majority of homeowners have had ample opportunity already to refinance at rates of less than 4%, given the roughly 3.5% rate for most of 2016.

Economists said the 30-year fixed-rate mortgage would need to drop below 3.5% to have a significant impact on refinancing and purchase activity.

Many of them say that is unlikely given that the Federal Reserve is likely to raise short-term interest rates twice more this year, which in turn could fuel an uptick in mortgage rates, economists said.

On the other hand, continued uncertainty in Syria, North Korea and France or a failure by Republicans to deliver on promised tax overhaul and economic growth could help keep rates lower.

"It's as volatile as it's ever been. There are a lot of serious crosswinds happening. It's a very political market," said Steve Udelson, president of Owners.com, an online real-estate brokerage.

Airport Police Brass Warn Ranks To Avoid Feuds

By Andrew Tangel And Doug Cameron

Police agencies that patrol U.S. airports have a message for their rank and file after Chicago officers dragged a United Airlines passenger off a plane: Don't get involved in carriers' civil disputes.

It is one that police brass have relayed to officers in cities such as New York City and Atlanta after the April 9 incident at O'Hare International Airport when Chicago Department of Aviation officers pulled David Dao, 69 years old, from a seat after United had bumped him and three other passengers to make room for crew members due to fly the next morning.

"We know our roles, our responsibilities, and that does not include enforcing an airline policy to replace somebody on a flight so a flight crew can go somewhere," said Atlanta police Maj. Lane Hagin, who oversees officers patrolling Hartsfield-Jackson Atlanta International Airport, the world's busiest airport by passenger traffic.

United, which is reviewing its own practices, has said it would never again seek police assistance for a customer-service issue, and call them only when there is a threat to passengers or crew. United Continental Holdings Inc. said in a federal filing Friday that Chief Executive Oscar Muñoz will no longer take over as chairman next year, as the airline continues to deal with fallout from the incident.

Agencies are "reminding people what we do and what we don't do," said Maj. Hagin, second vice president of the Airport Law Enforcement Agencies Network, a police-led group that coordinates security practices.

U.S. airports are guarded by a mix of dedicated staff and police drafted in from city forces, and the Chicago incident has also triggered debate about which is best placed to patrol aviation facilities.

Marshall McClain, president of the Los Angeles Airport Police Officers' Association, said years of budget cuts have led to staffing being split evenly between dedicated staff and city police who spend only part of their time at airports, compared with a decade ago when more were permanent staffers. That shift could lead to possible gaps in experience and consistency in enforcement.

The Port Authority Police Department, which patrols New York City's three major airports, has rehashed existing policy at roll calls: Officers shouldn't insert themselves into disputes unless a passenger has committed a crime, poses a safety risk or is deemed emotionally disturbed. "We'll intervene as necessary if a law's being broken," a Port Authority police spokesman said.

O'Hare, among the nation's busiest airports, is secured by a mix of Chicago Police Department officers and staff drawn from the city's Department of Aviation. United staff at O'Hare called the police in an effort to remove Mr. Dao, but officers from the aviation department—who share a radio frequency—arrived first.

Authorities in New York and Atlanta say airline policy isn't their responsibility.

Chicago Mayor Rahm Emanuel has said the city is reviewing the future of the Department of Aviation security force. The 300-strong airport unit is made up entirely of city employees. All are sworn police officers but receive less training than regular officers would at a police academy. They don't carry weapons, and have battled for years to do so amid heightened concerns over terrorism.

The Chicago Department of Aviation has placed three officers involved in the incident on leave and is conducting a review. It hasn't named them, citing its contract with a branch of the Service Employees International Union, which didn't respond to a request for comment.

BRIAN VAN DER BRUG/GETTY IMAGES

Airport police are seen at Los Angeles International Airport.

SNAKES

Continued from Page One

group that takes military veterans into the wilderness for various activities including snake hunting. He said it has bagged more than 400 pythons. "This is perfect python habitat," he said, approaching an elevated hardwood hammock. He looked for telltale signs—matted grass, shed skin—jabbing his walking stick into crevices.

He sniffed the air for python poop. "Acrid," he explained, "more biting than gator" variety.

Mr. Rahill, a telecom administrator, is among 25 hunters the agency selected from more than 1,000 applicants to hunt down the beasts. The elite few include three Swamp Apes members and Dusty "The Wildman" Crum, 36, an orchid grower whose hunting team in a 2016 contest nabbed a 15-foot python. The agency pays $8.10 an hour, $50 per python—must be delivered dead—and $25 for each foot over four.

The program is the latest in a string of attempts by state and federal agencies to eradicate the beasts, from deploying dogs trained to pick up their scent to releasing "Judas snakes" outfitted with radio transmitters to lure other pythons.

In January, the **Florida Fish and Wildlife Conservation Commission** and other parties hired two members of the snake-hunting Irula tribe in India, who the agency says captured 33 pythons over a two-month period.

They began each day with a sort of prayer and "would ask the powers that be for the vision to see these snakes," said Joe Wasilewski, 64, a conservation biologist who helped arrange the effort.

Then they would light up thin Indian "bidi" cigarettes and head out, searching for faint signs of the serpents. "They're so darn good at it," Mr. Wasilewski said. "They're like exterminators."

None of the initiatives has done much to curb the Everglades-python population. Though the snakes can reach monstrous proportions, their camouflage and tendency to hide in holes and under leaves make them difficult to spot. "You can stand right on top of it in vegetation," said Bryan Falk, 38, a **U.S. Geological Survey** research ecologist, "and you wouldn't know it."

Pythons, native to Asia, probably entered the Everglades decades ago when they escaped from, or were released by, people who bought them as pets, scientists say. They eat marsh rabbits and wading birds, robbing native predators such as panthers and alligators.

Bobby Hill, 65, whose job is to remove exotic species from land overseen by the water-management district, said he has found deer hoofs, alligator scales and a bobcat claw in pythons' bellies. Years ago, along local highways, "you'd see road kill—raccoons, possums," he said. "You don't see that too much anymore."

Hunters say the best time to find pythons is after a cold night when the sun begins to bake the ground where the reptiles head to bask. Most of the year, the steam-bath environment sends them searching for cover.

If a hunter locates one, the challenge is catching it. In dense foliage, Mr. Rahill yanks on the body to pull it toward a clearer spot where it can't coil around anything. Then he tries to subdue it by the neck.

There are dangers at either end: strikes from its head and defensive sprays from its tail of musk and excrement. "They'll fling white blobs of poop everywhere," Mr. Rahill said.

Which is where the scalded-monkey dance comes handy. "You juke left, you juke right" to avoid strikes, he said, until the reptile is tired out and provides an opening to pounce. Another Swamp Ape, he said, does more of a ballet movement. "He's a joy to watch, so smooth and fluid."

Mr. Hill prefers a simpler snake-subjugation tactic: He grabs his Winchester 12-gauge shotgun and fires at the python's head. "A head shot is considered a humane way" to kill a snake, said Mr. Hill, who said he has been involved in capturing more than 700 pythons.

On the recent day in the Everglades, Mr. Rahill found no snake in the brush, so he tried a method he calls "road cruising." He hugged the roadside in his black Chevy Cavalier—295,000 miles on the odometer, missing a hubcap—searching through the open window for that python-skin glisten.

He ended the day empty-handed, saying "the key to successful pythoning is perseverance." Novice hunters often don't realize how difficult it is to pursue pythons, he said. "Some people think pythons are waiting on levees with signs saying, 'Welcome to Florida.' "

Days later, farther north, he was tramping through brush and glimpsed a python pattern on a mound, he said. He lunged at it, grabbed at the snake midbody and pulled it into the open. The snake tried to strike him several times before he subdued and bagged it. The 7-footer yielded a $125 bonus. "I earned that snake," he said.

The snake earned a swift end dealt by Mr. Rahill's sledgehammer.

ARIAN CAMPO-FLORES/THE WALL STREET JOURNAL

Tom Rahill pursuing pythons in the Everglades, where the nonnative serpents have spread.

LIFE & ARTS

FROM TOP: WITHIN; WEVR

VIDEO

The A-List Tackles VR

Kathryn Bigelow, Alejandro G. Iñárritu and Megan Ellison join the creative push into virtual reality

BY ELLEN GAMERMAN

IN SHOW BUSINESS, virtual reality is the new ingénue.

The 360-degree immersive technology started emerging at film festivals about five years ago, often in projects that were more snazzy demos than stirring narratives. Since then, movie executives have used VR to promote existing franchises and provide interactive extras for anticipated blockbusters.

Now, the entertainment industry is dedicating new levels of talent, money and time to VR projects, with a premium on original stories, award-worthy performances, Hollywood production values and a pinch of celebrity.

At the Tribeca Film Festival, which opens this week, the VR lineup includes projects connected to director Kathryn Bigelow, musicians John Legend and Pharrell Williams, producer Megan Ellison and others.

"We can look forward to seeing people put way more art into virtual reality," said Loren Hammonds, the New York festival's programmer for film and immersive. Mr. Hammonds, who refers to traditional films as "flatties," said curating the VR content was even tougher this year given the heightened competition.

It's a creative niche that has yet to be fully identified or understood. Enthusiasts are unsure whether audiences will watch VR movies wearing headsets in theaters or experience them privately like videogames. They don't know how long people will want to wear the bulky headsets at a sitting. (Most VR pieces now last around 10 minutes.) It's also unclear whether mainstream audiences will want to interact with characters and alter plots or play a more ghostlike observational role.

Jon Favreau released 'Gnomes & Goblins,' above, last year. Top, 'Life of Us,' a journey through evolution, features music by Pharrell Williams.

"Nobody quite knows what it is but you can tell that the sauce is bubbling and something's going to happen soon," said Jon Favreau, director of "The Jungle Book" and "Iron Man" who created the interactive VR fantasy work "Gnomes & Goblins" released last year. Mr. Favreau said VR has the potential for the greatest impact when it is used in the service of emotionally engaging stories.

Hollywood can't necessarily apply its old expertise to the new medium, which many argue is not a movie, not a videogame, but something entirely its own. Many works branch in alternate directions based on where viewers direct their gaze. Actors perform long, continuous takes, on view without the benefit of edits, visible at all times. Filmmakers search for new tricks to direct the audience's focus, since they can't rely on close-ups and other traditional cinematic techniques to do it for them.

The new art form has recently experienced several milestones, including the first Oscar-nominated film connected to VR. "Pearl," a nearly six-minute piece created for Google Spotlight Stories about a girl and her father driving across the country, was nominated for best animated short. Though the 2D movie was up for the award, not the virtual-reality version of the film, entertainment industry veterans called this association a major step forward for VR.

Next month, director Alejandro G. Iñárritu and cinematographer Emmanuel Lubezki, both 2016 Oscar winners for "The Revenant," will debut a virtual-reality installation at Cannes, "CARNE y ARENA"—the first VR project chosen for the Official Selection of the film festival. The project, based on real accounts, revolves around the personal pilgrimages of immigrants and refugees. In a recent statement, Mr. Iñárritu called the work "an attempt to break the dictatorship of the frame—within which things are just observed—and claim the space to allow the visitor to go through a direct experience walking in the immigrants' feet, under their skin, and into their hearts."

Unlike the many animated VR works, the rise of immersive pieces with human actors offers new possibilities for intimacy. In "Broken Night," an interactive drama premiering at Tribeca, Emily Mortimer is an unreliable narrator recounting a traumatic encounter with an intruder in her home. Viewers can choose which of her fragmented memories to pursue. "It's kind of hard to empathize with a green-skinned alien made out of computer imaging," said the film's writer, Alex Vlack. "But if it's a real human being crying in front of you, it's pretty intense."

Currently, most VR watching happens at home, with audiences streaming or downloading content via apps and sites like YouTube. Films are made for a mix of VR headsets, including cheaper options like Google Cardboard. Earlier this year, an IMAX center dedicated to VR opened in Los Angeles with vibrating vests, motion chairs and headsets inside 14 pods for experiencing the works. IMAX plans to open more centers in the U.S., U.K. and China in the coming months.

VR filmmaker Chris Milk, the founder and CEO of the virtual-reality company Within, wants viewers to interact not just with the story but with each other. When his roughly seven-minute work about evolution, "Life of Us," made its debut at this year's Sundance Film Festival, people waited as long as nine hours to experience the interactive work. When they emerged, he said, many had bonded in the virtual environment.

"We saw all these straight bro dudes like, 'Oh, we should totally keep in touch,'" Mr. Milk said. "Bar none, VR is going to be the most connected artistic medium for storytelling that we've ever experienced."

PLAYLIST

PATHS YOU CAN GO BY

After an accident derails a high-school wrestler, Led Zeppelin points him to a culinary career

Chef Michael Symon, 47, co-hosts ABC's "The Chew." His Italian restaurant, Angeline, will open at Atlantic City's Borgata Hotel Casino & Spa on May 6.

When I turned 12 in the early 1980s, my dad bought me a record player and gave me many of his old albums by Fleetwood Mac, the Rolling Stones and other classic rock bands. He especially liked Led Zeppelin's **"STAIRWAY TO HEAVEN,"** and the song ended up, a few years later, helping me to get through a high-school crisis.

I grew up in a middle-class family in Cleveland, where my dad worked at Ford and liked to listen to all of those rock bands on his home stereo. In high school, I excelled at wrestling, and the sport became my all-consuming passion. I expected to get a college wrestling scholarship and become a wrestling coach.

But in my junior year, during practice with a teammate, my right arm became stuck between his knee and the mat while he had me in a move called "the cradle." My arm broke in several places.

At the hospital, they put a plate in my arm, but when I tried to return to wrestling later that year, the plate broke. My wrestling career was over.

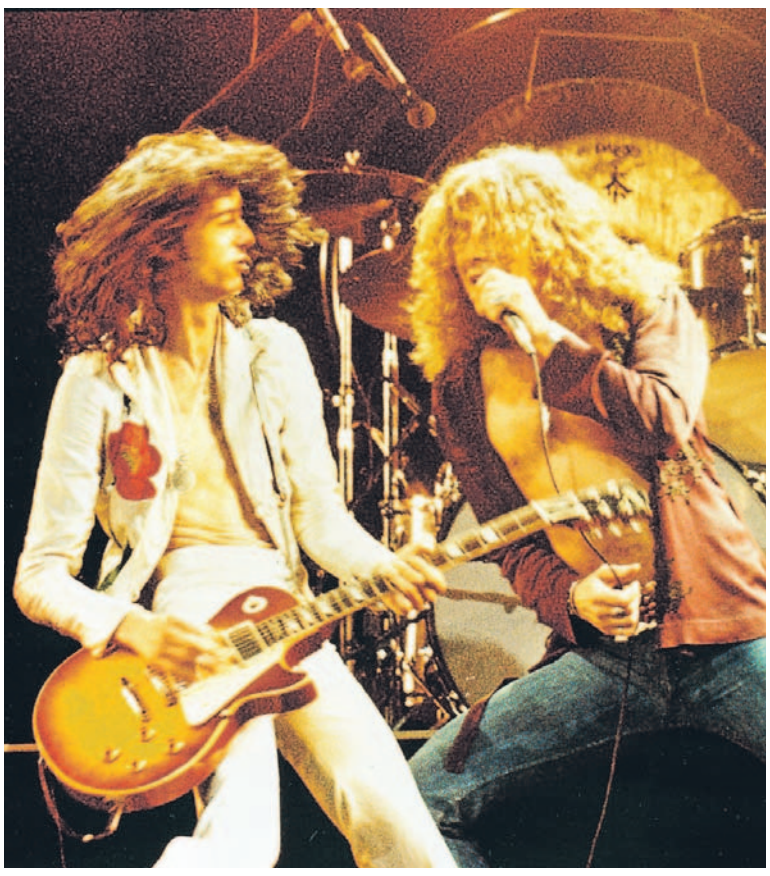
My senior year was a mess. I became depressed, and I felt lost and angry. Around this time, I began to listen carefully to the lyrics of "Stairway to Heaven."

The song opens with Jimmy Page's mournful acoustic guitar, joined by John Paul Jones's overdubbed recorders. Then Robert Plant begins to sing.

Halfway into the song, just after John Bonham hits the drums hard to kick up the volume, Robert Plant's words caught me: "Yes, there are two paths you can go by / But in the long run / There's still time to change the road you're on / And it makes me wonder."

The lyrics helped me realize there's always time to change course. By then I was working at a restaurant to help pay for college at Cleveland State. As my grades slipped, I decided to enroll at the Culinary Institute of America, and I became a chef.

The person who broke my arm was a friend. He felt terrible, and I haven't seen him in about 15 years. He ruined my junior year, but he made my future.



EVERETT COLLECTION

LED ZEPPELIN'S Jimmy Page, left, and Robert Plant in 1976.

ART REVIEW

'Making Space' Without Enough Room

BY PETER PLAGENS

New York

A BIG MUSEUM thrill is seeing great works of art in the flesh. A bigger one is seeing a great work of art by an artist heretofore unknown to you. That's the case for me with a small (39 3/8 inches by 13 inches) untitled, geometric oil painting made in 1957 by the Venezuelan artist Elsa Gramcko (1925-1994). The work is one of about 100, by 50 artists from the U.S. and elsewhere, in the timely exhibition "Making Space: Women Artists and Postwar Abstraction," at the Museum of Modern Art in New York through Aug. 13. The period covered is from the end of World War II to the late 1960s.

Gramcko's little masterpiece of inventive and quirkily balanced shapes and painstakingly applied, subtly gradated colors on a cliché-challenging black background isn't, however, the only wowser from MoMA's loaded vaults. (All the art in the show is either owned by the museum or has been promised to it.) A big, breathtaking 1966 Lee Krasner—the equal in all but the radicalism of her husband, Jackson Pollock—greets viewers almost immediately upon entering the exhibition. A gracefully gothic all-black Louise Nevelson wall sculpture gives life to another gallery, as does (to the point of overwhelming everything else in the room) Lee Bontecou's large, grimly black-and-tan, untitled construction in canvas and steel from 1961. "Making Space" is chock full of both under-known aesthetic gems and textbook examples by artists (e.g., Lynda Benglis and Louise Bourgeois) whom, to invoke the old chestnut, we already know and love.

MOMA, NY (3)

Clockwise from above: Lee Krasner's 'Gaea' (1966); Ruth Asawa's 'Untitled' (1955), Louise Bourgeois's 'The Quartered One' (1964-65);

But there's a big problem with this exhibition. While claiming in its press materials that it "spotlights the stunning achievements of women artists during a pivotal period in art history," it confuses an exhibition checklist with an actual exhibition. "Making Space" seriously misrepresents the "achievements" of several artists in the show. In striving to offer museological reparations for the past and continuing neglect of women artists, it seriously skews the history it's trying so hard to correct.

The spotlight that MoMA has focused on women artists in "Making Space" is on the blink. To take a small matter first, the sculpture by Eva Hesse (1936-1970), an untitled black wall piece from 1966, with elastic cord wound around a curved papier-mâché tube with a looping surplus at both ends, is typical of Hesse's eccentric originality but hardly capable, on its own, of indicating her clout and quality as a sculptor. MoMA owns far more impressive Hesses than this one, such as those from her "Repetition Nineteen" series of irregular cylinders set about on the floor. The almost sui generis California sculptor Ruth Asawa (1926-2013) is represented by a delicately strong hanging wire piece from 1955 that seems to undulate while standing still. But Asawa's porous forms are suspended near the center of its gallery instead of in a corner against plain white walls, and the noise of the other art one sees through her work mitigates its beauty.

A real crime, however, is perpetrated upon the Minimalist sculptor Anne Truitt (1921-2004). Instead of including one of the lovingly painted boxes (think Donald Judd with no bombast) for which Truitt is best known, the curators confine her presence to three 1966 ink drawings, each titled "Sumi Drawing" and offering simple compositions of gray stripes. They're elegant and precise, and with very spare means say a lot about perception. Still, they're lost on the wall and give the viewer who might have been attracted to the exhibition by its subtitle a misleading picture—if a picture at all—of Truitt's quiet power. The museum does, however, own "Catawba" (1962), a dark symmetrical combination of boxes, which would have made a wonderful counterpoint to "Yellow Abakan" (1967-68) the big, beasty yellow-ochre weaving in sisal twine by the Polish artist Magdalena Abakanowicz (b. 1930).

One of the exhibition's curators said in conversation at the press preview that they'd considered a freestanding Truitt, but there just wasn't enough space for it to be seen properly—or, presumably, to include Hesse's "Repetition Nineteen," which requires a lot of floor space. And thereby hangs the relative failure of "Making Space." The complex logistics of thinking up, organizing and installing exhibitions at MoMA notwithstanding, the museum should have either cut down the number of artists it included (for example, by eliminating pottery and furniture design, which have little to do with "abstraction"), or—a far better option—devoted more room to the show. But alas for the women, a massive Robert Rauschenberg retrospective arrives May 21, and will homestead the more capacious fourth-floor galleries.

Crammed into its third-floor quarters, and cluttered with too many minor or ancillary works, "Making Space" contradicts its own title. While there are several serendipitous encounters with undersung artists to be had, as well as refreshing reacquaintances to be made with such major figures as Grace Hartigan, Jo Baer and Bridget Riley—who managed to establish themselves in spite of the unconcern and even hostility of the art world—this show feels like a lounge act for the coming main event upstairs. Or, in terms a more militant feminist than I am might sarcastically use: Back to the kitchen, ladies. Bob's got the dining hall all to himself.

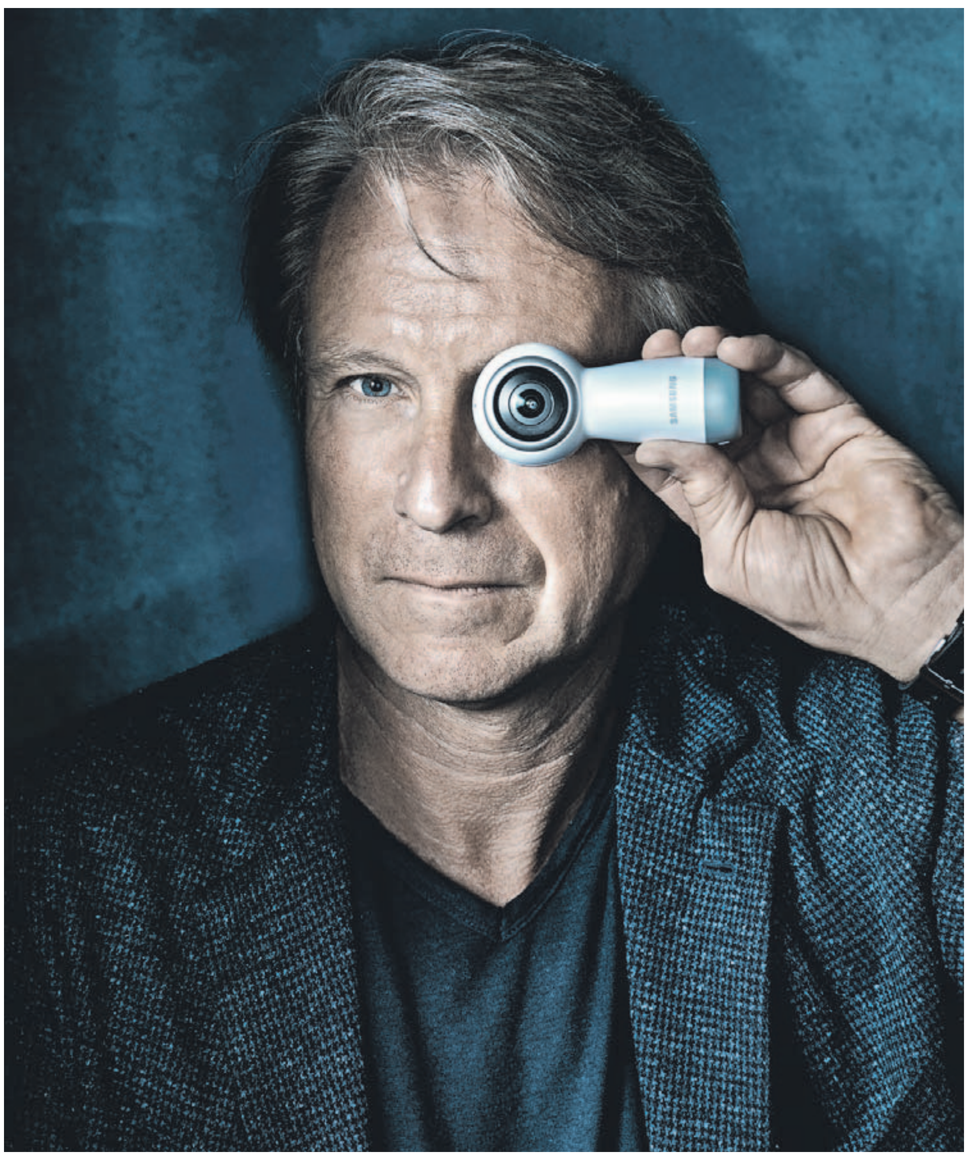
Making Space: Women Artists and Postwar Abstraction
Museum of Modern Art,
through Aug. 13

Mr. Plagens is an artist and writer in New York.

WEEKEND CONFIDENTIAL By Alexandra Wolfe

SAMSUNG'S BIG MARKETING CHALLENGE

Samsung marketing chief Marc Mathieu works to get past the recall



BRAD TRENT FOR THE WALL STREET JOURNAL

SAMSUNG EXECUTIVE Marc Mathieu is sitting in his office in lower Manhattan the day before the much-anticipated release of the company's new Galaxy S8 smartphone. His office is a colorfully decorated conference room with a rectangular meeting table that doubles as his desk. Screens cover two of the walls, and smartphones, virtual-reality headsets and other high-tech gear are littered around the room. As he looks out at the Hudson River, he acknowledges that a lot is riding on this launch.

Mr. Mathieu, 56, joined Samsung Electronics America as chief marketing officer in 2015, and since then the company has faced some difficult times. Last year, Samsung recalled its Galaxy Note 7 smartphone—some 2.5 million units in all—after faulty batteries led some of the phones to overheat and catch on fire. The company's vice chairman and de facto chief, Lee Jae-yong, is currently on trial in Seoul, facing charges including bribery, embezzlement and perjury. He has denied any wrongdoing.

Samsung launched the $720 Galaxy S8 on Friday. The phone has gotten positive reviews for its tall, gently curved screen and narrow, easy-to-grip shape—though some still worry about the battery issue. So how do you convince consumers that your latest product isn't going to go up in flames? "When you go through what we went through last year, it forces you to listen to a lot of people...more intensely," says Mr. Mathieu. He held focus groups with customers to talk about their needs—and how the company could rebuild trust. Samsung, which has blamed the Galaxy Note 7 issue on battery suppliers, has spent about $130 million on product safety.

Mr. Mathieu says that, because of the recent safety problems, the company has created ads for the new device based on a message of empowerment rather than on humor. "We'll have humor in due course," he says. "It's not the time to be funny. It's the time to say, 'This is a great phone.' "

Earlier this month, Samsung said that preorders of the S8 outpaced those of its predecessor, the S7, although it didn't release numbers. Counterpoint Research expects that Samsung will ship more than 300 million smartphones globally in 2017, including 50 million of the S8. By comparison, it expects Apple to ship 230 million iPhones, out of which 75 million will be the coming iPhone 8 series.

Mr. Mathieu's love of the theater informs his marketing philosophy. One of his favorite quotes is from George Bernard Shaw's "Man and Superman": "The reasonable man adapts himself to the world: the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man." His goal is to help people "be a little bit unreasonable"—which, to his mind, means creating products that can do things that previously seemed impossible.

One group he's targeting is young adults—the highly coveted millennials. In February, the company came out with an ad campaign called "Do what you can't," in which artists, videographers and internet celebrities discuss how they have used technology to do creative work and prove wrong the people who told them "you can't."

Last year, Mr. Mathieu spearheaded the opening of Samsung 837, a "technology playground" and digital culture center in Manhattan that lets people try out Samsung's products but doesn't offer anything for sale, aside from food and coffee. Visitors can put on virtual-reality headsets, test smart kitchen appliances and come for special events on massive screens. (Selfies and social-media posts are encouraged.) Mr. Mathieu sees it as a way to build the brand and create relationships with consumers—and as a chance for the company to see how their customers use the products. "It's a great way for us to learn what works and what doesn't work," he says.

Mr. Mathieu grew up in France; his parents were entrepreneurs in construction and now work in real estate there. After earning a master's degree in international marketing in Paris, he worked for Danone, Coca-Cola and Unilever in Europe, including in France, Asia and the U.K. "I was always attracted to an international career," he says. At Coca-Cola, he spearheaded the brand's reinvention in 2004, including the creation and marketing of Coke Zero.

At Samsung, he runs a team of more than 100 people. Leaders are often rewarded with titles such as "mayors," "pioneers" and "achievers" in their various groups. He encourages disagreement among his employees. "I like to ask two people for their opinion if I know they won't agree," he says.

Though he is based in New York, he frequently visits the company's headquarters in South Korea. When he isn't working, he and his wife, an artist, like to travel. They have three adult children who live in California. "When people ask, 'How are your kids doing?'...I say, 'They struggle,' " he says. "It's difficult to be 20-plus in today's world. There's so much competition, and everybody can come up with a great idea...so everybody wants to."

He has long been interested in theater and serves on the board of several theater companies, including Punchdrunk and the Almeida Theatre. He particularly likes immersive drama experiences, such as Punchdrunk's "Sleep No More," an interactive show based on "Macbeth" in which audience members wander around different rooms.

He likens the experience to people's relationship with technology today. The audience "does not just interact with a play but interacts with themselves," he says. "Instead of the play telling you what are you supposed to hear or learn, you are the one who discovers all the meaning that you want to put in the play."

OPINION

REVIEW & OUTLOOK

Teeing Up Trump Tariffs

Financial markets have been discounting the risks from President Trump's trade policy, but maybe that's premature. Last week's actions on "Buy American" and steel aren't immediately dangerous, but they do make protectionist blunders more likely.

> Paving the way for higher taxes on U.S. steel consumers.

Visiting Wisconsin on Tuesday, Mr. Trump ordered a review of federal procurement to buy only U.S. products. He made this sound like a grand new policy, but U.S. law dating to the New Deal already gives preference to domestic businesses bidding for federal contracts. Federally funded transportation projects must use U.S.-made iron and steel.

Mr. Trump's order requires federal agencies to evaluate exceptions to these Buy American policies, presumably with a goal of reducing those exceptions. But agencies make those exceptions when domestic inputs are unavailable or their cost is "unreasonable," which often occurs on large projects.

Take steel, a Trump preoccupation. One reason for exceptions is that domestic manufacturers have limited capability to produce steel of certain strengths, thickness and flexibility. Most higher-strength steels used in thin-walled pipelines are made overseas. Retrofitting plants to produce a type of steel for one or two projects could delay construction and increase the cost. More U.S. workers would have to be retrained, which may not be practical in the short term. So contractors often have no choice but to import foreign substitutes.

The American Petroleum Institute chronicled some of these supply challenges in its response to Mr. Trump's earlier executive order on domestic sourcing for pipelines. On one pipeline project, only five domestic companies were capable of making a particular grade of steel, but none could produce the required quantity, accommodate the pipe diameters and meet the customer's delivery schedule. Only one U.S. pipe mill bid on another project, and its bid was double that of two international suppliers. It also couldn't meet technical and safety requirements.

Thanks to the North America Free Trade Agreement, Canadian and U.S. companies can integrate their supply chains. Many steel makers operate subsidiaries in both countries. American raw exports—e.g., iron ore from the Rust Belt and coal from Appalachia—made up 85% of Canadian steel inputs last year, and some were reimported. Many U.S. pipe mills use Canadian steel slab and coil made from American scrap metal.

Mr. Trump says Nafta is "a disaster," but the reality is that cross-border economic integration improves efficiency and reduces costs for federal contractors and taxpayers. It also supports jobs in U.S. manufacturing, coal and steel.

Federal officials can also issue Buy America waivers if they determine the rules are "inconsistent with the public interest" or violate U.S. trade obligations. A Trump spokesperson last week accused federal officials of overusing their waiver authority and said foreign governments don't reciprocate.

But most U.S. trade agreements allow favoritism in domestic procurement for certain industries such as defense. Some U.S. states are even allowed to impose preferences for their own home-grown industries (Pennsylvania for steel). The trouble is that blacklisting foreign contractors makes it harder to convince countries, especially in emerging markets, to open up their procurement to U.S. companies.

* * *

More potentially dangerous is Mr. Trump's memo, issued Thursday, teeing up tariffs on steel imports. The President ordered Commerce Secretary Wilbur Ross to investigate "whether steel imports threaten to impair the national security." The point of this language is to make it possible for Mr. Trump to invoke Section 232 of the Trade Expansion Act of 1962.

The White House press office explained the gambit: "If the report concludes that steel imports threaten to impair the national security, and the President concurs, he may take several actions, including tariffs, to eliminate the negative effects of steel imports on the national security of the United States."

This sounds as if Mr. Trump has made up his mind and merely wants Mr. Ross to find an excuse to satisfy the language of Section 232. U.S. steel users had better rush their orders because tariffs look like a sure thing. And the main effect will be to raise the U.S. price of steel, foreign or domestic, as U.S. steel makers exploit the tariffs to pad their bottom lines.

That's precisely what happened when George W. Bush imposed steel tariffs in 2002. Economists Joseph Francois and Laura Baughman found that more American workers lost their jobs from higher steel prices than the total employed by the entire U.S. steel industry. A quarter of those lost jobs were in metal manufacturing, machinery and transportation equipment and parts. Some of the biggest losses were in Trump country: 10,553 in Ohio, 9,829 in Michigan and 8,400 in Pennsylvania.

Mr. Trump is moving ahead smartly on deregulation, but his tax and health reforms are stalled in Congress. He may figure that tariffs are political substitutes, but they're an anti-growth tax on U.S. consumers and steel users. They'll cost more jobs than they'll save.

A GOP Health-Care Reprieve?

Republicans have put themselves in a deep hole on ObamaCare, both politically and on the health-market merits, but maybe they'll grab the rescue line now dangling in front of them. A potential compromise among the House's contentious GOP factions could begin the climb out.

> A compromise gives the House a chance to honor its ObamaCare promise.

The chance to revive the failed repeal-and-replace bill developed last week when the House Freedom Caucus's Mark Meadows and the centrist Tuesday Group's Tom MacArthur struck a tentative deal. Their compromise would allow states to seek waivers to opt out of most of ObamaCare's insurance mandates.

House Republicans spent months negotiating the American Health Care Act in an inclusive internal process, but the 30 or so members of the Freedom Caucus revolted over the final result. Their demands drove the bill to the right, provoking moderate defections without delivering more conservative votes. Thus the legislation imploded in March.

The question now is whether the Meadows-MacArthur truce is enough to satisfy the holdouts and rehabilitate the bill. Details are limited to a one-page list of bullet points, but more will emerge in the coming days. House leaders plan to consult Members this week, and the House could vote soon if a majority coalesces.

On the substance, the deal is an improvement. It would restore the ObamaCare rules about covering essential health benefits and pre-existing conditions that were repealed to attract the Freedom Caucus. These mandates drive up the cost of insurance, but the compromise would accept them as the political price of avoiding a debate about cancer patients and maternity care.

Setting essential health benefits and pre-existing conditions allows states that want to continue ruining their insurance markets to go right ahead. But the deal creates an exit ramp for reform Governors who want to experiment with market-based solutions. States that apply for waivers and then stimulate more liquid insurance systems with more choices and lower costs could nurture public confidence in non-ObamaCare alternatives.

The Affordable Care Act gave the Health and Human Services Department the regulatory discretion to achieve similar results, but the new waivers would carry fewer conditions for states. One reason the temperature of American politics is so hot is that too many questions have become binary decisions imposed by Washington, and decentralizing power to the states would be a pluralistic achievement.

Can Republicans recover from the early health-care self-defeat? They're running out of time and their political capital is diminished, but a breakthrough is still possible. The White House intensely wants a legislative victory as the 100-day milepost approaches. And Republicans in Congress need to think through the consequences of another failure.

Realistically, the month of May is their last credible chance to keep their seven-year promise to repeal and replace ObamaCare. Despite its flaws, the House bill would be the most consequential entitlement reform and spending reduction in decades.

The polls show the American Health Care Act is unpopular, but then any bill will be unpopular when too many Republicans and conservative pressure groups are telling Republican voters the bill is awful. A President who rarely tries to persuade doesn't help. But the Senate will have its chance to improve the bill, which can be better explained to the country.

The alternative is the ObamaCare status quo, which means Republicans will have misled voters about repeal and replace while taking the blame from people harmed by surging premiums and declining insurance options. On present trend, large parts of the country may be served by one or even zero insurers in the individual market next year.

The industry must decide soon if the uncertainty in Congress will be resolved and whether to stick around for 2018. Insurance executives saw UnitedHealth Group's earnings surge in the recent quarter after quitting ObamaCare, and some may conclude that they too can profit by not selling such products.

In other words, without reform the GOP will soon come under tremendous political pressure to preserve participation by showering insurers with federal dollars. A bailout for ObamaCare will divide the GOP, and Democrats will evade responsibility—not least because Republicans run both ends of Pennsylvania Avenue and will be held accountable for what happens on their watch.

Meanwhile, Democrats will campaign on expanding Medicaid into even higher income brackets or lowering the eligibility for Medicare to age 55 or even 50 from 65. If the bill fails again, the GOP will have no answer. They'll have shown they don't have the votes to fix insurance markets, so naturally support will grow for government assuming total control of overregulated markets where nobody can buy insurance at any price.

Republicans also need to show they can overcome their recent dysfunctions and start to solve some of the problems that are the reason voters elected them. Sending repeal and replace to the Senate so the health-care reform debate can proceed is an essential start.

The Activist and the CEO

BUSINESS WORLD
By Holman W. Jenkins, Jr.

Nowhere in the how-to manual of activist investing does it say: "Persist until the target company's CEO responds with a threatening personal letter, requiring the board to demand his resignation."

Yet this approach has worked for activist fund manager Paul Singer in his battle against the former Alcoa unit known as Arconic Inc.

Mr. Singer, head of Elliott Management, is best known for his long fight with Argentina over its unpaid bonds. Since last year, his firm has been glossily fighting to remove Arconic's German-born chief, Klaus Kleinfeld, for the usual reason: poor stock performance. In letters to Arconic's board, in published presentations, Elliott was unstinting in its use of adjectives. Mr. Kleinfeld's strategy was "incoherent," his corporate culture "broken" and "image-obsessed," his compensation "lavish."

Then, on April 11, came Mr. Kleinfeld's response, a personal letter to Mr. Singer, along with a commemorative soccer ball from the 2006 World Cup.

Sent without the Arconic board's knowledge, the letter alluded to certain goings-on in Mr. Kleinfeld's native Germany when Mr. Singer attended the soccer competition. Mr. Kleinfeld makes reference to what Elliott calls "completely false insinuations" involving an Indian headdress and Mr. Singer singing a show tune in a public fountain.

To Elliott, the letter amounted to a "threat to intimidate or extort." To the innocent onlooker, there is indeed a hint of blackmail in Mr. Kleinfeld's suggestion that these events have "strong potential to become lastingly legendary."

Mr. Kleinfeld's letter was first revealed by Arconic, and has been posted on Elliott's website, along with Elliott's responses. Which brings us to a question that now faces the hedge fund following Mr. Kleinfeld's unexpected exit: Has the time come for Elliott and fellow Arconic dissidents to start taking yes for an answer?

If belatedly, Mr. Kleinfeld had already met the demand of Elliott and numerous analysts last year by divorcing Alcoa's downstream products business from its upstream raw-material processing business. In keeping with the general thrust of Elliott's critique, he expanded the downstream business that provides high-end components for the plane- and car-making industries. To the extent the results have been disappointing, they have been disappointing partly following the strategy Elliott and other outsiders promoted. Elliott's critique amounted to: Get a CEO who will do the job better.

With Mr. Kleinfeld quite properly having been fired, Elliott is promoting its proposed replacement, Larry Lawson, engineer of a successful turnaround of the Boeing spinoff Spirit AeroSystems.

Arconic's board has announced its own CEO search. A likely candidate is the company's now-acting CEO, David Hess, who joined Arconic's board last month after a widely praised run at United Technologies' Pratt & Whitney division.

Whichever man wins, or if the winner is a third candidate, hard to imagine is Arconic's next leader not following through on Elliott's recommended game plan of controlling costs and focusing on innovation. Hard to imagine is the next leader not seeking peace with Elliott and its endorsement of Arconic's strategy, considering Elliott's 13% stake in the company.

> Never underestimate name-calling as a tool of governance, but now Arconic needs manners.

Some might ask if Mr. Kleinfeld's letter hasn't changed Elliott's agenda, from improving Arconic's performance to scorched-earthing Arconic's board in the name of suppressing whatever rumors Mr. Kleinfeld was referring to. That concern isn't alleviated by the second of two letters from Elliott's general counsel, chastising the board for publicly referring to Mr. Kleinfeld's letter and making a "privately bad situation a publicly bad one."

But Arconic's board never authorized the Kleinfeld letter: It first saw the letter in an official communication from one of its biggest shareholders, Elliott. How could the board not disclose the basis on which it was suddenly dumping its chief executive?

Elliott, in its letter, also demanded that Arconic make sure that the design Mr. Kleinfeld "set in motion is stopped" and that "these issues" don't "proliferate for us or the company."

Meaning what? Alas, no subject excites the media like the foibles of Wall Street billionaires, even if they only amount to an excess of exuberance. The Indian headdress in particular seems apt to become the rosebud of some future snarky opus. Why do we get the feeling that the interests of Arconic shareholders are about to take a back seat in the wild ride that started with Mr. Kleinfeld's ill-advised letter and Elliott's possibly ill-advised response?

LETTERS TO THE EDITOR

Trump Faithfully Fulfilled His Court Promise

Fred Barnes's "Gorsuch Lessons for Trump's Next Nominee" (op-ed, April 20) is wrong about one key point—it understates the role Donald Trump played as candidate and president during the more than yearlong political drama that unfolded with the passing of Justice Antonin Scalia.

Early in his campaign Mr. Trump recognized, more than almost any other presidential candidate in recent history, the importance of Supreme Court appointments, and he made the clearest possible commitment to appointing individuals devoted to a judicial role grounded in strict adherence to the text and structural protections of the Constitution.

He kept this promise, appointed highly capable White House staff to facilitate the underlying process and made an appointment of Judge Neil Gorsuch that hewed to a specific set of criteria that he set forth personally just after the election.

He was neither "all but silent" nor "handled" by staff, as Mr. Barnes suggests, but instead laid down clear guiding principles, delegated the details of daily management to his West Wing staff and at key points rallied his supporters through well-timed reminders of the stakes involved in Judge Gorsuch's confirmation at rallies and in weekly addresses.

The real lesson is that presidents cannot just say Supreme Court appointments are their most important legacy, but must demonstrate it through a clear and unbroken course of action. For conservatives bruised by the mistakes of past Supreme Court nominations, President Trump's dedication to appointing true constitutionalists to the federal judiciary is a cause for hope and a most helpful marker for future presidents.

LEONARD A. LEO
Washington

ObamaCare Replacement Must Be Rational

Perhaps my 40 years of practicing internal medicine has influenced my thinking on the subject of health-care reform, but as your editorial "Reviving Repeal and Replace" (April 11) suggests, there is an almost insurmountable problem with the process currently under way.

The factions seeking to cover all pre-existing conditions or to pay for the catastrophic costs of "invisible risk sharing" that cover the medical expenses of high-cost patients are like homeowners seeking fire insurance for a house already on fire. The expenses of such efforts regularly exceed the ability of our society to pay for them.

Instead, a highly productive method of lowering emergency-room visits, improving actual health care for Americans and reducing the extreme costs of catastrophic disease would be to initiate a program that revives the deplorable state of disappearing primary care in the U.S.

The practices of internists and family practitioners, the vanishing elements of America's health-care system that provide for effective methods of preventing disease, are the one area that would produce the most cost-effective and reliable answer. And yet nobody in the halls of Congress, where it counts, seems to recognize this potential solution for restoring the health of Americans. It wouldn't be a challenge or expensive to support the expansion of primary-care medical residencies in our America's training programs, and the time to start this is now.

ROGER C. DUNHAM, M.D.
Santa Barbara, Calif.

CORRECTIONS

Judge Thomas Hardiman sits on the Third U.S. Circuit Court of Appeals. The circuit was misidentified in the April 19 op-ed "Gorsuch Lessons for Trump's Next Nominee."

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OPINION

The Challenge of America's Disruptive Era

By Ben Sasse

I am a historian, and that usually means I'm a killjoy. When people say we're at a unique moment in history, the historian's job is to put things in perspective by pointing out that there is more continuity than discontinuity, that we are not special, that we think our moment is unique because we are narcissists and we're at this moment.

But what we are going through now—the past 20 or 30 years, and the next 20 or 30 years—really is historically unique. It is arguably the largest economic disruption in recorded history. And our politics are not yet up to the challenge.

It is arguably the largest economic transformation in recorded history. Can our politics adapt?

There have been four kinds of economies: hunter-gatherers, agriculture (settled agrarian farmers in their villages), industry (mass urbanization and immigration), and whatever we're entering now. Sometimes we call it the information-technology economy, the knowledge economy, the service economy, the digital economy. Sociologists call it the "postindustrial" economy, which is another way of saying "we don't have anything to call it."

What it really means is that jobs are no longer permanent. It used to be that you did whatever your parents and grandparents had done. Hunter-gatherers and farmers never even thought about it. There was no such thing as job choice, only becoming 7 and 10 and 12 years old and taking on more responsibilities to earn your keep.

Industrialization brought a massive disruption. At the end of the U.S. Civil War, 86% of Americans still worked on the farm. By the end of World War II, 80 years later, 60% of Americans lived in cities.

One of the most disruptive times in American history was the Progressive Era. And what was Progressivism? Not much more than the response of trying to remake society in an era of mass immigration, industrialization and rising cities. But it turned out not to be as disruptive as people feared, because once you got to the city, you got a new job, which you'd probably have until death or retirement. And the social capital that used to be in the village tended to be replicated in urban ethnic neighborhoods.

What's happening now is wholly different. The rise of suburbia and exurbia, and the hollowing out of mediating institutions, is an echo of the changing nature of work. In the 1970s, it was common for a primary breadwinner to spend his career at one company, but now workers switch jobs and industries at a more rapid pace.

We are entering an era in which we're going to have to create a society of lifelong learners. We're going to have to create a culture in which people in their 40s and 50s, who see their industry disintermediated and their jobs evaporate, get retrained and have the will and the chutzpah and the tools and the social network to get another job. Right now that doesn't happen enough.

Think about qualitative survey data—polls that ask, "What are the top three or four things you're worried about?" Ten years ago, nowhere on the top 10 of that list was anything about prescription drugs. Today opioids are a major concern in America. People are scared about drug abuse in largely middle-age populations. That's a symptom of the economic disruption.

I don't mean to be exceedingly pessimistic. There are plenty of wonderful opportunities for American families and innovators in this new economy. For one thing, there are fewer middlemen complicating transactions instead of adding value. So we're going to get a lot more visibility and transparency into product offerings, and consumers are going to get higher-quality and lower-cost stuff.


DAVID GOTHARD

In other industries, we don't know how to price for things that turn out to matter quite a lot. Think of the news media. We are going from a world in which we had too much central control by a few large organizations to one in which everybody, everywhere can deluge us with information. What is likely to happen next is not a lot more higher-quality journalism. We're going to have higher-volume journalism, and some of it will be good. A free, thriving and independent press is critical to self-government, so this is a big challenge.

But people are also able to silo themselves into an echo chamber, where they hear only things that they already agree with. More conspiracy theories come to flower than ever before. You can see it on America's college campuses, where students don't want to encounter any new idea without a trigger warning. If you're never going to encounter ideas that you didn't already know and affirm, I don't know why your parents are paying tuition, because education is all about wrestling with new ideas.

The political result isn't just polarization, which is a big problem, but political disengagement. If you think that the biggest problem in America is the other political party and that one party has all the answers, if only you could vanquish the other team from the field, I've got a lot of people I'd like to introduce you to—because Washington doesn't have very good answers right now.

With the magnitude of the challenges we face in this moment of disruption, it isn't the case that one side is right and the other side is standing in the way, or that one side is enlightened and the other side is retrograde. It's that we don't have any of the right policy conversations. Most of the really big challenges of this moment aren't easily reducible to core Republican or Democratic platform positions.

For one thing, America doesn't have a national-security strategy for the age of cyberwarfare and jihad. Since the 1640s and the Treaty of Westphalia, the view of geopolitics and national security is one of state actors. There are lots of state-actor problems out there, including Russia and China. But of the 200 or so countries in the world, only about two-thirds really control all their territory.

The rest are more like Afghanistan, Libya or Syria. There may be some entity that has more power than anyone else—think of the Taliban on the eve of 9/11. But we weren't attacked by the Taliban; we were attacked by al Qaeda, which exploited the vacuums of ungoverned spaces in the territorial borders of Afghanistan. A lot of the dangers and the threats we face are from jihadi-motivated people who are going to self-radicalize in place and create their own terror networks.

America also lacks seriousness about tackling the entitlement crisis. The U.S. Republican Party appears almost as indifferent as the Democrats to telling the truth about entitlements. People talk about America's national debt, which is approaching $20 trillion. But that's just the total of intergovernmental transfers and publicly held bond debt. The number that matters is the unfunded obligations of the U.S. government, including future Social Security and Medicare payments. That's more like $65 trillion to $75 trillion.

And what about the policy implications of the economic disruption? The cultural, societal, familial and social-network responses to a world of lifelong learning and job disruption are far more important. But there are many potential policy responses in education and job retraining. Are *any* of these conversations on the agenda right now?

What will the American idea look like when we get to this new, disrupted world of the digital economy? What will entrepreneurship look like? What will cultural pluralism and a robust defense of the First Amendment look like? What will it mean to be able to say that the meaning of America is still centered in institutions that look like the Rotary Club—where people actually live, where they know and love their neighbors, and where they actually want to do good, not just wear tribal labels about some distant fight in Washington that isn't anywhere near up to the task of the moment we face?

That's the challenge before us, and here's the good news: Throughout history Americans have been optimists, ready to seize the day. Let's get to work.

Mr. Sasse, a Republican, is a U.S. senator from Nebraska. This is adapted form a speech he delivered to Colorado's Steamboat Institute.

Boost Revenue by Slashing the Capital-Gains Tax

By Mark Bloomfield And Oscar S. Pollock

In the debate over U.S. tax reform, the biggest challenge is always how to raise enough revenue to offset proposed tax cuts. Yet there is a relatively simple and painless way to maintain Washington's coffers: Restore long-term capital-gains tax rates to the levels in place before President Obama took office. A reduction in this tax could generate significant additional revenue.

We began working on this issue in 1977 and have observed the long-term consequences of changes in the capital-gains tax. This particular levy is unique in that most of the time the taxpayer decides when to "realize" his capital gain and, consequently, when the government gets its revenue.

If the capital-gains tax is too high, investors tend to hold on to assets to avoid being taxed. As a result, no revenue flows to the Treasury. If the tax is low enough, investors have an incentive to sell assets and realize capital gains. Both the investors and the government benefit.

Many have offered opinions on which maximum tax rate would raise the most revenues. Our experience suggests the ideal federal capital-gains tax rate is 15%.

The chance to test that theory came in May 2003, when Congress lowered the top rate on long-term capital gains to 15% from 20%. According to the U.S. Congressional Budget Office, by 2005-06 realizations of capital gains had more than doubled—up 151%—from the levels for 2002-03. Capital-gains tax receipts in 2005-06, at an average of $98 billion a year, were up 81% from 2002-03. Tax receipts reached a new peak of $127 billion in 2007 with the maximum rate still at 15%.

By comparison, federal capital-gains tax receipts were a mere $7.9 billion in 1977 (the equivalent of about $31 billion in 2017 dollars), according to the Treasury Department. The effective maximum federal capital-gains tax was then 49%.

The vociferous critics, who denounced us for trying to "unsoak the rich" over the years, should instead thank us for finding a way to make the wealthy pay much more in taxes.

Cutting it to 15% would induce investors to realize gains—and double what the government takes in.

Now fast-forward to the recent past. Congress raised the top capital-gains tax rate back to 20% in 2009 and later added a 3.8% tax on investment income, including capital gains, to help pay for the Affordable Care Act. The top federal rate is now 23.8%.

In 2009 through 2012, capital-gains realizations and tax receipts came in sharply under those of the previous four years, but one cannot blame all that on the higher tax rates. The recession and subsequent stock and real-estate market declines were no doubt big factors. Tax receipts have enjoyed a recovery during the past few years.

Yet realizations of capital gains from 2013-16 remained considerably below prior peaks despite improvement in the economy. The subdued level of realizations is evidence of a considerable lock-in effect caused by higher rates.

Using our post-2003 experience as a guide, we can predict a dramatic improvement in realizations and tax receipts if the top capital-gains tax rate is lowered to 15%. In a year or two, realizations of capital gains could double from the $643 billion in 2016.

The potential for increased revenue is enhanced by the recent improvement in equity prices. A tax rate of 15% on realizations of $1.3 trillion would provide tax receipts of more than $192 billion—$58 billion more than the $134 billion collected in 2016, with a maximum capital-gains tax rate of 23.8%. Also, this would probably not be a one-shot increase. After the 2003 rate cut, tax revenues rose for years until the recession hit.

Past capital-gains tax reductions have been great revenue raisers, but that's not the only benefit. Such changes also increase the mobility of capital by inducing investors to realize gains. This allows investment money to flow more freely, particularly to new and young companies that are so important for growth and job creation.

Mr. Bloomfield is president of the American Council for Capital Formation. Mr. Pollock is a director of Ingalls & Snyder.

A 'Red Team' Exercise Would Strengthen Climate Science

By Steven Koonin

Saturday's March for Science drew many thousands in support of evidence-based policy making and against the politicization of science. One concrete step toward such worthy goals would be to convene a "Red Team/Blue Team" process for climate science, one of the most important and contentious issues of our age.

The U.S. national-security community pioneered the "Red Team" methodology to test assumptions and analyses, identify risks and reduce—or at least understand—uncertainties. The process is now considered a best practice in high-consequence situations such as intelligence assessments, spacecraft design and major industrial operations. It is very different and more rigorous than traditional peer review, which is usually confidential and always adjudicated, rather than public and moderated.

The public is largely unaware of the intense debates within climate science. At a recent national laboratory meeting, I observed more than 100 active government and university researchers challenge one another as they strove to separate human impacts from the climate's natural variability. At issue were not nuances but fundamental aspects of our understanding, such as the apparent—and unexpected—slowing of global sea-level rise over the past two decades.

Summaries of scientific assessments meant to inform decision makers, such as the United Nations' Summary for Policymakers, largely fail to capture this vibrant and developing science. Consensus statements necessarily conceal judgment calls and debates and so feed the "settled," "hoax" and "don't know" memes that plague the political dialogue around climate change.

We scientists must better portray not only our certainties but also our uncertainties, and even things we may never know. Not doing so is an advisory malpractice that usurps society's right to make choices fully informed by risk, economics and values. Moving from oracular consensus statements to an open adversarial process would shine much-needed light on the scientific debates.

Given the importance of climate projections to policy, it is remarkable that they haven't been subject to a Red Team exercise. Here's how it might work: The focus would be a published scientific report meant to inform policy such as the U.N.'s Summary for Policymakers or the U.S. National Climate Assessment. A Red Team of scientists would write a critique of that document and a Blue Team would rebut that critique. Further exchanges of documents would ensue to the point of diminishing returns. A commission would coordinate and moderate the process and then hold hearings to highlight points of agreement and disagreement, as well as steps that might resolve the latter. The process would unfold in full public view: the initial report, the exchanged documents and the hearings.

Put the 'consensus' to a test, and improve public understanding, through an open, adversarial process.

A Red/Blue exercise would have many benefits. It would produce a traceable public record that would allow the public and decision makers a better understanding of certainties and uncertainties. It would more firmly establish points of agreement and identify urgent research needs. Most important, it would put science front and center in policy discussions, while publicly demonstrating scientific reasoning and argument.

The inherent tension of a professional adversarial process would enhance public interest, offering many opportunities to show laymen how science actually works. (In 2014 I conducted a workshop along these lines for the American Physical Society.)

Congress or the executive branch should convene a climate science Red/Blue exercise as a step toward resolving, or at least illuminating, differing perceptions of climate science.

While the Red and Blue Teams should be knowledgeable and avowedly opinionated scientists, the commission should have a balanced membership of prominent individuals with technical credentials, led by co-chairmen who are forceful, knowledgeable and independent of the climate-science community. The Rogers Commission for the Challenger disaster in 1986, the U.S. Energy Department's Huizenga/Ramsey Review of Cold Fusion in 1989 and the National Bioethics Advisory Commission of the late 1990s are models for the kind of fact-based rigor and transparency needed.

The outcome of a Red/Blue exercise for climate science isn't preordained, which makes such a process all the more valuable. It could reveal the current consensus as weaker than claimed. Alternatively, the consensus could emerge strengthened if Red Team criticisms were countered effectively.

Whatever the outcome, we scientists would have better fulfilled our responsibilities to society, and climate policy discussions would be better informed. For those reasons, all who marched to advocate policy making based upon transparent apolitical science should support a climate science Red Team exercise.

Mr. Koonin, a theoretical physicist, is director of the Center for Urban Science and Progress at New York University. He served as undersecretary of energy for science during President Obama's first term.

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TELEVISION REVIEW

'Handmaid's Tale': An American Dystopia

BY JOHN ANDERSON

Hulu's adaptation of Margaret Atwood's novel about subjugated women stars Elisabeth Moss.

HULU

ABOUT A HALF-HOUR INTO "The Handmaid's Tale," novelist Margaret Atwood appears out of the dystopian mist and slaps actress Elisabeth Moss across the face. Creative differences? No, exactly the opposite: A cameo by the creator bestows nothing if not an irrefutable blessing on the whole production. An undeniable endorsement. A totalitarian, one might say, seal of approval.

Whether viewers agree with Ms. Atwood may depend on whether they've read her best-known novel, which hasn't been out of print since 1985 and ranks with "Brave New World" and "1984" among visions of a nightmare future conjured out of the realities of a socio-political present. You can't quite call it a bad dream come true, not yet. But given what might be termed "recent events," it's certainly cautionary, and more than urgent: In a day-after-tomorrow America, renamed Gilead, women have been forbidden to work, forbidden to possess money or property—forbidden to think, as much as can be accomplished—and, naturally, forbidden to control their reproductive destinies. Those not sent to "the Colonies" (to clean up toxic waste and die) are assigned to one of four categories of slave: The Wives, who lead lives of quiet, barren desperation; the kapo-like Aunts, who enforce discipline; the Marthas, who serve; and the Handmaids, who provide the breeding stock for a theocratic society rendered close to infertile by environmental pollution.

Among the last group is Offred (Ms. Moss), who has been judged a good candidate for procreation—which is achieved, when it's achieved at all, during something called The Ceremony: The Handmaid submits, the Wife observes, and the Commander does his duty. It's all quite dreadful.

The problem with Hulu's "Handmaid" is that nothing is dreadful enough. One of Ms. Atwood's signature achievements was the creation of a heroine who was not so much an unreliable narrator as a thoroughly traumatized one: Offred (women have no names—they are "of Fred," "of Glen," "of Warren") provides almost the entire story through interior monologue, and even when she talks to herself she does so like a hostage. Offred may have entertained thoughts of resentment, or insurrection, or even violence, but they were muted, constrained in a manner to which she was not even conscious. Ms. Moss's Offred comments regularly on her condition with outraged, silent vulgarities, and seems appalled by rituals and outrages that had become routine in the book—although she and her cohort do sit casually by the infamous Wall as several enemies of the state are being hanged. But the original Offred was almost too terrorized to imagine defiance, much less exercise it. And such calibrated portraiture helped make the novel click.

Of course, a truly faithful adaptation might be so oppressive as to be unwatchable. (Volker Schlöndorff's 1990 feature, starring Natasha Richardson, is unwatchable for other reasons.) But there's no danger of that: Only the first three episodes of 10 were available for review, but Hulu's "Tale" already strayed far from the course Ms. Atwood mapped out, sometimes for the good, and sometimes not: The Commander (all Handmaids are assigned a "commander") is played by Joseph Fiennes and his wife, Serena Joy, by Yvonne Strahovski, both far younger and better looking than the original characters. In this, something gets lost: That the novel's ego-driven aging males would impose themselves and their genetic pipedreams on the innocent and exploited—while their withering wives not only watched them do it, but enjoined their limbs in the process—was a ripe bit of symbolism. Similarly, the cast's racial diversity—Offred's pal Moira is played by the wonderful Samira Wiley; Offred's husband, Luke, by O-T Fagbenle—sidesteps the dictatorial whiteness of Gilead, where the "Children of Ham" were said to have been resettled in the Dakotas.

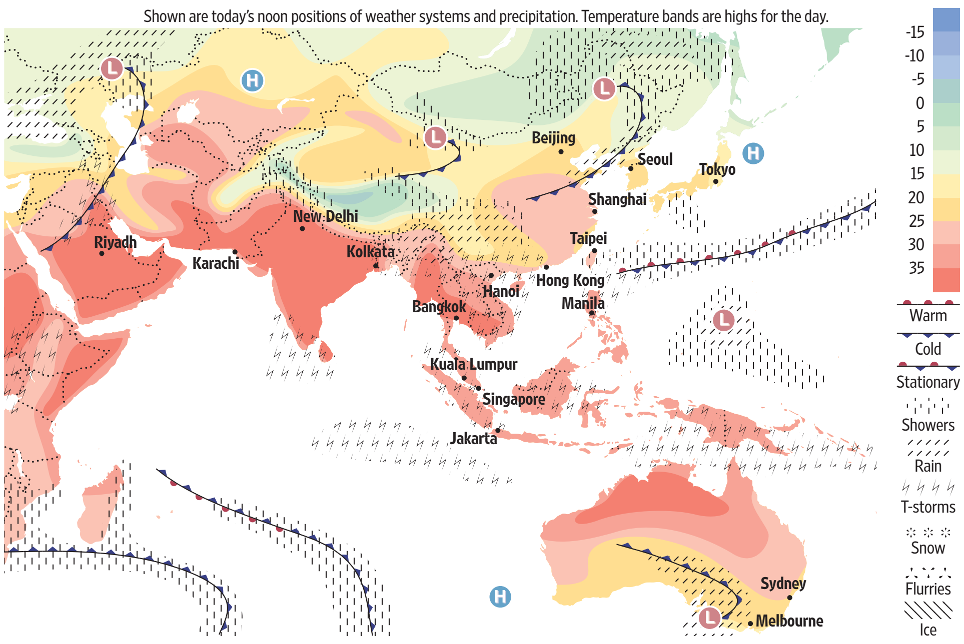
The rest of the cast includes Alexis Bledel ("Gilmore Girls"), Max Minghella and the formidable Ann Dowd ("Compliance," "Marley & Me"), who as the gorgon-like Aunt Lydia has the role of her career, which is saying something; Ms. Moss, constrained as she is in the opening episodes, may yet turn Offred into something memorable.

And "The Handmaid's Tale" itself, embracing something larger than Offred's battered psychology and the forcibly blinkered sphere of her existence, promises a series with some very interesting places to go—maybe Canada, Ms. Atwood's native country and the Promised Land for escapees from a former America where Congress has been "slaughtered," the Constitution "suspended" and the whole crisis has been blamed on Islamic extremists. Ms. Atwood may not be a prophet, but this week she plays one on TV.

Weather

AccuWeather.com

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

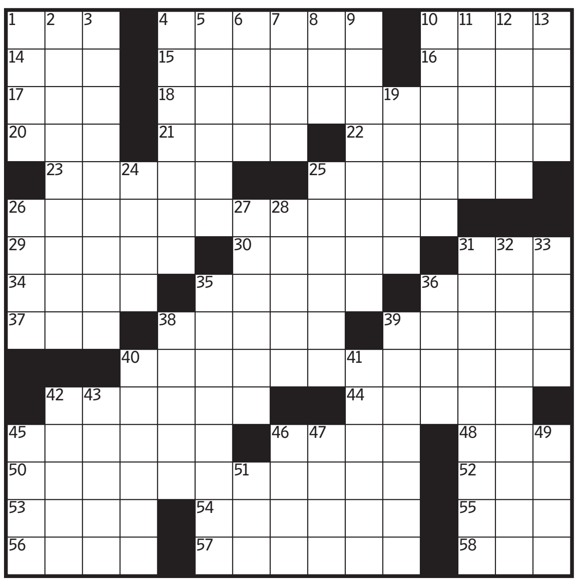


Global Forecasts

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
Amsterdam	13	4	r	9	2	sh
Anchorage	12	6	c	13	3	c
Athens	21	12	s	21	12	s
Atlanta	20	14	pc	26	15	s
Baghdad	29	15	pc	30	15	pc
Baltimore	12	9	r	17	13	r
Bangkok	38	27	t	38	28	pc
Beijing	23	8	s	21	5	pc
Berlin	12	5	c	10	2	r
Bogota	20	10	r	20	10	c
Boise	12	5	sh	14	7	r
Boston	17	7	pc	9	8	r
Brussels	14	5	c	9	1	pc
Buenos Aires	22	12	pc	20	9	r
Cairo	25	14	s	27	14	s
Calgary	5	-3	sn	4	-2	sn
Caracas	32	26	pc	32	26	t
Charlotte	16	12	r	21	12	c
Chicago	22	10	pc	24	15	pc
Dallas	26	17	s	32	21	s
Denver	20	4	pc	14	0	c
Detroit	20	9	s	23	13	pc
Dubai	36	25	s	36	25	pc
Dublin	10	2	sh	9	1	sh
Edinburgh	10	-1	sh	9	0	sh
Frankfurt	16	4	pc	14	2	r
Geneva	22	9	pc	17	4	r
Hanoi	27	24	c	33	24	pc
Havana	28	19	pc	28	17	s
Hong Kong	26	23	r	28	24	t
Honolulu	29	23	s	30	23	pc
Houston	27	15	s	30	22	pc
Istanbul	14	9	s	19	9	s
Jakarta	33	25	t	32	24	t
Johannesburg	19	8	sh	20	8	pc
Kansas City	23	13	s	24	8	pc
Las Vegas	29	18	s	27	17	pc
Lima	25	20	pc	25	20	pc
London	17	2	sh	11	3	t
Los Angeles	23	16	pc	27	16	pc
Madrid	26	10	pc	24	7	t
Manila	34	26	t	34	26	pc
Melbourne	22	15	t	19	9	r
Mexico City	26	12	pc	27	10	pc
Miami	31	20	pc	28	19	s
Milan	18	11	c	19	12	pc
Minneapolis	19	10	c	15	4	r
Monterrey	29	16	pc	38	18	s
Montreal	10	1	pc	15	7	sh
Moscow	8	-1	sh	10	5	r
Mumbai	32	27	pc	32	26	pc
Nashville	21	10	pc	26	14	s
New Delhi	39	25	pc	39	25	pc
New Orleans	26	15	s	28	18	s
New York City	16	9	r	12	11	r
Omaha	24	11	pc	18	4	t
Orlando	29	16	pc	30	17	s
Ottawa	11	0	s	13	6	c
Paris	18	7	pc	12	1	sh
Philadelphia	13	9	r	14	13	r
Phoenix	34	20	s	31	19	s
Pittsburgh	18	9	c	21	11	c
Port-au-Prince	32	22	sh	32	22	pc
Portland, Ore.	12	7	r	13	9	r
Rio de Janeiro	28	22	pc	30	23	s
Riyadh	38	22	s	36	21	pc
Rome	19	8	pc	19	11	pc
Salt Lake City	14	7	sh	12	5	r
San Diego	21	16	pc	22	16	pc
San Francisco	18	12	pc	18	13	c
San Juan	30	25	t	30	24	sh
Santiago	20	8	pc	18	7	pc
Santo Domingo	30	23	t	31	23	sh
Sao Paulo	23	16	pc	27	20	pc
Seattle	14	8	r	14	8	r
Seoul	22	11	pc	18	11	c
Shanghai	25	16	pc	24	15	c
Singapore	31	25	c	31	24	c
Stockholm	8	-1	r	5	-1	sn
Sydney	25	18	pc	25	16	t
Taipei	27	21	pc	30	23	t
Tehran	28	16	c	27	13	c
Tel Aviv	21	13	pc	24	15	s
Tokyo	18	13	pc	19	13	s
Toronto	11	6	s	11	9	c
Vancouver	14	7	pc	14	8	pc
Washington, D.C.	13	11	r	18	14	r
Zurich	18	6	s	16	2	r

The WSJ Daily Crossword | Edited by Mike Shenk



COURSE REQUIREMENTS | By Harold Jones

Across

1 Cat coat
4 Catfish coat
10 Subtle alternative to "Hey you!"
14 Count start
15 Opulently extravagant
16 Golden Rule preposition
17 iPad download
18 Cold War barrier
20 "The Simpsons" bartender
21 Circus sight
22 Georgia neighbor
23 Art class staple
25 You can bet on them
26 Do this and that
29 Epic poem of the Trojan War
30 Author Eudora
31 Aussie critter
34 Joined the glee club
35 Grounds
36 Kansas or Alabama
37 Braz. neighbor
38 Cavalry stations
39 Made an effort
40 Bedding for animal pens
42 Brooks Brothers buys
44 "The Mary Tyler Moore Show" spinoff
45 Stop, as the flow of blood
46 Folkie Guthrie
48 Bank lobby convenience
50 Divisive political topics
52 Overtime cause
53 Opposed to
54 Unrealized
55 Tree of knowledge raider
56 Not worth debating
57 Releases
58 Decided on

Down

1 Makeup of some heads
2 Not in the in crowd
3 Like the decimal equivalent of 1/3
4 Opened envelopes, in a way
5 Profession
6 Big door-to-door marketer
7 Fuzz in a pocket
8 PC key
9 Lopsided sports victories
10 Rotten
11 Cobra or copperhead
12 Farm enclosures
13 "Hamilton" trophy
19 Like undercooked eggs
24 Antlered animal
25 Buff
26 Galileo's birthplace
27 13-Down and others
28 Takes a breather
31 Backup plans for parades
32 Universal donor's type
33 Gambler's calculation
35 Final destination for a gunslinger
36 Vivacious style
38 Compel
39 Cavett, Carson and Colbert
40 Improvise
41 Dahl of "Bengal Brigade"
42 Shorthand pro, for short
43 Couldn't help but
45 Participated in a medley, perhaps
46 Concerning
47 Bitterly regrets
49 Get together
51 ___ Paulo

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

Previous Puzzle's Solution

The contest answer is NAME THAT TUNE. The central answer suggests looking at the FOUR-LETTER WORDS in the clues. In order, they say "What game show uses bids that rely upon each note from some song?" The answer to that question is the contest answer.

TECHNOLOGY: YOUTUBE TO ADD RECORD LABELS TO RECOMMENDATION MATRIX B4

BUSINESS & FINANCE

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Yen vs. Dollar 108.9950 ▼ 0.30% | **Hang Seng** 24042.02 ▼ 0.06% | **Gold** 1287.40 ▲ 0.43% | **WTI crude** 49.62 ▼ 2.15% | **10-Year JGB** yield 0.016% | **10-Year Treasury** yield 2.234%

Shift in Alzheimer's Drug Testing

By Denise Roland

Novartis AG thinks its best bet for testing two new Alzheimer's drugs is on people who don't actually have Alzheimer's.

The Swiss drug giant is looking for people whose genes put them at high risk of developing Alzheimer's, but who have yet to fall victim to the mind-robbing disease. It hopes such early treatment proves more successful than past efforts to tackle the disease once it has taken hold.

The history of Alzheimer's research is marked by disappointment. In November, a high-profile **Eli Lilly** & Co. drug called solanezumab was the latest to fail a late-stage clinical trial. That drug aimed to clear clumps of a protein called beta amyloid in the brain, which are closely linked with Alzheimer's. So far, no company has produced a drug that can delay the progression of Alzheimer's.

One of the new Novartis drugs, known as CAD106, is designed to boost the immune system's ability to clear beta amyloid from the blood. The other, which Novartis is developing with Amgen Inc. and is called CNP520, aims to stop its formation in the first place.

"If an anti-amyloid strategy is going to work, the best way to do so is with prevention," said Steven Arnold, a neurologist at Massachusetts General Hospital in Boston.

Recruiting patients to receive treatment for a disease they don't have—and may never develop—is riven with challenges.

The company is looking for people with two copies of a gene called APOE4 to participate in its study. Having two copies of the gene doesn't inevitably lead to Alzheimer's, but the roughly 2% of people who fit this profile are around three times as likely to develop dementia as the general population, according to a recent analysis in the scientific journal PLOS Medicine.

The Banner Alzheimer's Institute, a Phoenix nonprofit, is helping Novartis find eligible participants with a campaign launched at the end of 2015 to test people for the APOE4 gene. The institute places television and newspaper ads, does mass mailings and runs events in clinics to publicize the program, called Genematch.

So far, around 35,000 people have signed up, agreeing to send swabs of their cheek cells for testing. "We seem to have tapped into a very motivated group of people," said Pierre Tariot, director of Banner. "Not surprisingly, a lot of them have a family history of Alzheimer's."

Margaret, a 71-year-old from Virginia, discovered two weeks ago that she has two copies of the APOE4 gene. She signed up for the Genematch program earlier this year after hearing about it through the hospital that is caring for her older sister, who has Alzheimer's.

"It is shocking," said Margaret, who declined to give her last name because she hasn't yet told her family. But "if this works and can prevent or slow it down, then obviously I'd like to participate. That part of it is a no-brainer."

Only a fraction those who sign up will be eligible for the trial. As well as having two copies of the APOE4 gene, participants in the Novartis study must be healthy, between the ages of 60 and 75, and have no outward signs of Alzheimer's, such as cognitive decline. Fewer than 10% of the roughly

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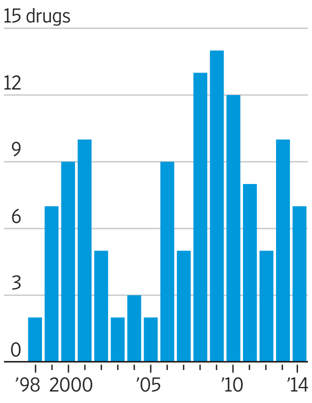
A Difficult Path

Annual number of investigational drugs to treat Alzheimer's that proved unsuccessful



123 total unsuccessful drugs between 2008-2014

4 approved over the same period

Source: PhRMA analysis of Adis R&D Insight Database

THE WALL STREET JOURNAL.

Goldman Will Offer Real-Time Feedback

By Liz Hoffman

Radical transparency is coming to **Goldman Sachs Group** Inc.

The Wall Street firm is rolling out a new review system where employees can get continuing feedback from their managers and peers. The goal is to supplement the bank's annual review process with more frequent check-ins, Edith Cooper, Goldman's head of human capital management, said in an interview with The Wall Street Journal.

The firm will continue to conduct annual reviews. Those remain a high-stakes affair that influences employees' chances for promotion and the size of their bonus checks.

Goldman's changes are part of a bigger shift in the way companies track and grade workers' performance.

Consulting firms **Accenture** PLC and **Deloitte** recently scrapped annual performance reviews in favor of more frequent communications. **J.P. Morgan Chase** & Co. made a similar move last month, rolling out a tool that employees can use to request and receive feedback "from anyone, anytime."

The goal is to supplement annual review with more frequent check-ins.

A memo to employees explained the change this way: "Our employees want to know where they stand at all times."

Goldman and rival **Morgan Stanley** in recent years have dropped numerical ratings of employees and moved to more qualitative feedback, as have Microsoft Corp., Netflix Inc. and FedEx Corp.

Goldman's system is based on software the firm used in a few divisions last year. It is being extended to the rest of Goldman's 35,000 employees.

The idea is that after a big client pitch or product launch, employees can get quick feedback instead of waiting until year-end, Ms. Cooper said. A real-time sense of where they stand allows employees to make improvements and avoid feeling blindsided later on, she added. "Those conversations that happen once a year for an hour are going to go better," Ms. Cooper said.

In Goldman's early days as a small private partnership, performance reviews were easy. As the firm grew, an informal system developed in which, following a big deal or successful trade, executives would send around a memo detailing each team member's contributions, a tradition that continues.

And every two years, the selection of a new class of managing directors and part-

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KEYWORDS

By Christopher Mims

Three Hard Lessons for Traditional Retailers

With brick-and-mortar stores closing at a record pace, retail in the U.S. feels like it's at a tipping point. Many of the stores that once filled the malls of America have become "zombies," while online retailers capture ever more of the most valuable consumers—the young and affluent.

Legacy retailers are trying to play catch-up, but they're saddled by huge fixed costs, investors who prefer dividends to innovations, and CEOs incentivized to focus on the next quarter, not the next decade. It's only a matter of time before **Amazon.com**'s army of physical retail formats turn into an existential threat to everyone from Mom and Pop to Kroger and **Wal-Mart**.

That doesn't mean retailers are taking this lying down. As online brands begin to build physical shops, the old guard is taking notes—and in many cases, writing checks. Wal-Mart, for example, has been on an acquisition binge of late. It's now in talks to buy men's clothier Bonobos for $300 million.

After surveying analysts and CEOs, I learned the three biggest lessons physical retailers are grappling with as they face this rocky transition.

Data Is King

When I asked Target, Walgreens and grocery chain Giant Food about loyalty programs and the fate of customers' purchasing data—which is the in-store equivalent of your web browsing history—they all declined to comment. Why so cagey? Perhaps because of the uproar that occurred when Target sent coupons for baby clothes and cribs to the home of a teenage girl, alerting her family she was pregnant, says Michelle Evans, an analyst at consumer research firm Euromonitor.

Data has been a vital part of Amazon's retail revolution, just as it was with Netflix's media revolution and Google and Facebook's advertising revolution. For brick-and-mortar retailers, purchasing data doesn't just help them compete with online adversaries; it has also become an alternate revenue source when profit margins are razor-thin. For example, Uni-

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Bond Maven Bets Against Crowd

ALI KATE CHERKIS FOR THE WALL STREET JOURNAL

Bond manager Bruno Crastes in his office in London. 'We think that investors are not prepared at all for more inflation,' he says.

Chief of H2O Asset made investments in Italy, Portugal, Greece; an acceptance of risk

By Christopher Whittall

As bonds were plummeting at the height of the eurozone's 2011 debt crisis, Bruno Crastes's brand-new fund suffered steep losses and fleeing investors.

Mr. Crastes gathered his executives in H2O Asset Management's new boardroom. "Let's invest," the chief executive told them, suggesting they plow money into research. When visiting clients, he had another message: Now is the time to take on risk.

It worked. Markets calmed down, and the low-profile Frenchman's returns from bonds and currencies have since matched those of some of the world's best-performing managers.

Today, he and other investors potentially face another pivotal moment—whether accelerating growth and inflation are a threat to the 35-year bull market in bonds.

Mr. Crastes is set to fall back on his old playbook, basing trades on his analysis of investor behavior and his willingness to stomach losses to win in the longer term.

"How can you get richer if you don't accept to get poorer?" he said in an interview from the fund's central London offices.

Mr. Crastes has sold U.S. and U.K. government bonds, which he expects to be hit by higher inflation, and bought debt elsewhere in Europe, where he sees more subdued consumer-price rises. In funds that allow it, he has also bought stocks that tend to fare better in inflationary environments. H2O had £10.3 billion ($13.2 billion) under management at the end of March.

"We think that investors are not prepared at all for more inflation," and even a small rise in consumer prices "will have dear consequences," Mr. Crastes said.

The 51-year-old analyzes what he believes are investors' biases and constraints to look for mispricing in the market. Many other large bond investors rely more on forecasting markets, by parsing data on the global economy, central-bank decisions and politics.

Mr. Crastes takes views on such fundamentals, but he also tries to predict how other investors will react and then looks for opportunities where he says they have it wrong.

"I like understanding people and I think people are full of biases," he said, leaning forward with a grin.

He adds that investors have a low tolerance for risk and, ahead of several European elections, are unnecessarily scared of another eurozone crisis.

In February, Mr. Crastes watched a sharp rise in the cost of the futures contracts investors use to bet against Italian government debt. He went against the tide and bought Italian, Portuguese and Greek bonds—securities that had been hit by jitters over the elections.

Please see BONDS page B2

United Changes Executive Roles to Stem Fallout

By Susan Carey

United Continental Holdings Inc. moved to further stem fallout from the incident in which police dragged a paying passenger off one of its flights, saying its chief executive, Oscar Munoz, will no longer be taking on the chairman role and that it will revamp executive-compensation incentives.

In a federal filing on Friday, United said its board is planning to adjust managerial incentive compensation to focus more on performance measures related to customer service.

The disclosures come almost two weeks after the incident, in which 69-year-old passenger David Dao was dragged down the aisle and off United Express Flight 3411 after United employees called for Chicago Department of Aviation police. Dr. Dao suffered a concussion and other injuries during the incident, his lawyers have said. The issue is under investigation by both United and the aviation department.

United is under pressure amid pledges by fliers on social media to boycott the airline and calls by some for Mr. Munoz to resign, while the airline tries to build on its operational improvement in the past year.

Mr. Munoz has the support of the 15-member board, according to Robert Milton, the nonexecutive chairman, in a recent interview and a subsequent memo to United's 85,000 staff.

JOSHUA LOTT/AGENCE FRANCE-PRESSE/GETTY IMAGES

The airline said that CEO Oscar Munoz will no longer become chairman and it is revamping executive-compensation incentives.

Another person familiar with directors' thinking agreed, but added that "the entire board is of course concerned and is wanting to be responsive."

Mr. Milton, a former CEO of Air Canada, joined United's board just over a year ago and, as part of a proxy fight settlement, was elevated to nonexecutive chairman for two years.

Mr. Munoz initially was slated to take that post this year and then that plan was pushed back to 2018. According to the filing, the chairmanship will now be determined by the board.

United said its board believes separating the roles of CEO and chairman "is the most appropriate structure at

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These indexes cite notable references to most parent companies and businesspeople in today's edition. Articles on regional page inserts aren't cited in these indexes.

INDEX TO PEOPLE

BUSINESS & FINANCE

AT&T's Media Strategy in Spotlight

By Drew FitzGerald

Unlimited wireless data plans have made a comeback this year, forcing U.S. carriers to find new ways to set themselves apart from the competition.

AT&T Inc., the No. 2 wireless carrier by subscribers, is answering with other services: home television through its DirecTV and U-verse brands, and, if regulators bless its pending **Time Warner** Inc. takeover, discounted access to entertainment on every screen.

THE WEEK AHEAD

Questions about that strategy will overshadow AT&T's financial results scheduled for release Tuesday, partly because of low expectations for its core wireless business. Average revenue per user, a key measure of phone companies' fundamental health, has slid industrywide for the past three years, according to investment bank **UBS Group** AG.

It follows rivals Verizon Communications Inc., which last Thursday reported its first-ever net subscriber loss, and T-Mobile US Inc., which is expected to report on Monday. Thanks in part to its own all-you-can-eat data plans, T-Mobile has snapped up many former Verizon and AT&T customers.

All three companies, as well as No. 4 carrier Sprint Corp., now offer plans that promise unlimited data usage, a strategy that could force them to boost spending to keep up with customers' voracious online habits.

AT&T still spends heavily on network upgrades but has been conservative of late to preserve its bottom line. The company bid $910 million in the Federal Communications Commission's latest auction of spectrum licenses, an amount small enough that the company recouped most of the down payment it paid to enter the auction.

The auction's end means wireless companies will soon be freed from legal obligations that prevented them from holding deal talks. But AT&T's hands are still tied because of its continuing $85 billion bid for Time Warner.

U.S. regulators have approved similar combinations of telecom and entertainment in the past. But President Donald Trump has said during his campaign that the deal should be blocked.

His nominee to lead the Justice Department's antitrust division, Makan Delrahim, is awaiting Senate confirmation, so in the meantime the department has begun sending questions to other telecom and media companies potentially affected by the combination, according to people familiar with the matter. That is good news for AT&T, which can get to work marketing its new shows and cutting costs the sooner the merger review ends.

Another bright spot AT&T can count on is its advertising business. The company earlier this year said AdWorks, its ad division, was generating more than $1 billion a year of revenue and growing at a double-digit rate.

That alone is hardly enough to rescue the broader company if customers start to bolt in droves but offers hope for the future.

—Shalini Ramachandran contributed to this article.

MARK LENNIHAN/ASSOCIATED PRESS

The company, which reports results Tuesday, has set itself apart from rivals with new services.

Big Risks, Big Gains

Bond funds managed by Bruno Crastes have had largely positive returns...

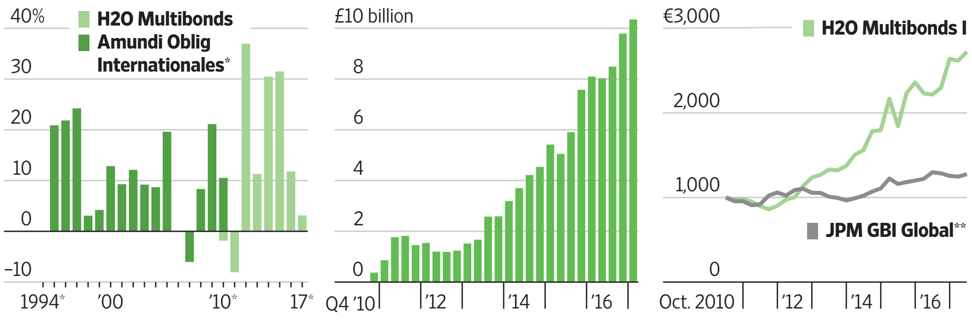
Returns after fees, annual except where noted

...H2O funds' assets under management have risen steadily over the past five years...

Assets under management in H2O funds, quarterly data

...and H2O Multibonds I is leaving its bond-fund benchmark in the dust.

Value of €1,000 invested Aug. 23, 2010; fund returns after fees



*The Amundi fund managed by Mr. Crastes changed names several times over the years as a result of mergers. The 1994 return of 0.005% is since September of that year. The 2010 return for the Amundi fund is through April. Mr. Crastes founded H2O Asset Management in 2010. The 2010 return on the H2O fund is since Aug. 23. The 2017 return is through April 18. **Total return, in euros, through April 18
Sources: Morningstar; H2O Asset Management (assets)
THE WALL STREET JOURNAL.

BONDS

Continued from the prior page

"We think that the European project [goes far] beyond the French elections," he said, talking of the presidential vote that began Sunday, in which far-right candidate Marine Le Pen has threatened to pull France out of the euro.

H2O's flagship Multibonds euro fund notched an average annual return of 24% after fees in the five years that ended in 2016, according to Morningstar Inc., outstripping comparable bond funds by over 19 percentage points.

Mr. Crastes's investments primarily focus on widely traded global bonds and currencies. Still, H2O does make bets elsewhere, again displaying risk appetite.

A review of fund filings shows H2O holds bonds in companies either owned or funded by Sapinda Group, a firm run by German businessman Lars Windhorst. Mr. Windhorst has been seeking to sell assets after big losses at some of those companies, and Sapinda bonds have plummeted in value.

An H2O spokeswoman declined to comment on the investment. Mr. Windhorst declined to comment.

Colleagues and clients describe Mr. Crastes as engaging and driven, but playful. He wore a Donald Duck costume to The Ivy, an upmarket London restaurant, for H2O's 2016 office Christmas party—a reference to Donald Trump's election as U.S. president, a vote that helped shake up bond markets.

H2O's offices are full of personal touches. The boardroom has four glass-fronted refrigerators crammed with vintage French wines. An animal lover, Mr. Crastes has a miniature leather Chesterfield sofa in his corner office for his Yorkshire terrier, Elsa.

The Multibonds euro fund has outstripped comparable bond funds recently.

He and a team that followed him from previous jobs have been through rocky patches. At Crédit Agricole Asset Management, they suffered heavy losses around the time of the 2008 financial crisis. Mr. Crastes had built up the firm's London business from $4 billion to $100 billion in assets under management. Assets shrank to $60 billion as clients pulled out.

Despite those losses, Natixis Asset Management, then led by Mr. Crastes's former boss, Pascal Voisin, agreed in 2010 to seed him in return for a 50.01% stake in H2O. Within a year, crisis had engulfed European bond markets and clients pulled $500 million out of the newly formed fund.

As some left, Mr. Crastes looked for more.

In July 2011, Andrew Spence, who manages 7.2 billion Australian dollars (US$5.4 billion) as chief investment officer for the pension plan of Australia's Qantas Airways Ltd., asked to meet.

With bond markets wobbling, Mr. Crastes got on a plane for the 50-hour round trip from London to Sydney and what would be a three-hour meeting. For Mr. Spence, this was someone who wasn't afraid to take risks. He invested A$300 million and, as European bond markets began to tank, allowed Mr. Crastes to invest in riskier securities.

"There were times when it was uncomfortable, given the extreme market volatility," Mr. Spence said, but "that's how you make money."

Mr. Voisin, who is now working on a biotech startup, describes Mr. Crastes as a "real, active portfolio manager."

"You have to be able to bear the short-term volatility associated with that," he said.

—Margot Patrick contributed to this article.

TEST

Continued from the prior page

1,300 participants needed for the trial have been recruited so far, Dr. Tariot said.

The Genematch staff doesn't know any individual participant's genetic results. Instead, a computer program provides a list of names—only some of whom are genetic matches—for them to call. On that call, Genematch will tell the person they might be eligible for a trial and tell them about nearby participating hospitals.

Participants are informed of their genetic profile—usually by a genetic counselor—after a lengthy assessment at the clinical-trial site to determine that they are eligible for, and willing to enroll in, the study.

"The critical thing is that this is done in a highly ethical way," said Vas Narasimhan, global head of drug development at Novartis. "If a patient is not selected for the study, we are not intervening to help them so there is no reason to provide them with this information."

Later this year, Novartis plans to start a further trial that will be open to people who have just one copy of the APOE4 gene, Dr. Narasimhan said. Around a quarter of the population is thought to fit this profile, and they are about 1½ times as likely to develop mild cognitive impairment or dementia as the general population.

After the string of failures in amyloid-busting drugs, experts are divided over whether they are the right approach to tackling Alzheimer's. "The field is very pessimistic right now," said Murali Doraiswamy, director of the neurocognitive disorders program at Duke University Health System in Durham, N.C.

But the Novartis study was among a small group of trials that could still vindicate this approach, Dr. Doraiswamy said. "We've learned a lot from previous [failed] trials," he said, adding that the "elegant" design of the Novartis study—in focusing on a narrow band of people known to have heightened risk of Alzheimer's—makes it a "near-perfect model to test the amyloid thesis."

UNITED

Continued from the prior page

this time."

The move, the company added, is "a means to ensure that Mr. Munoz is able to more exclusively focus on his role as CEO," while an independent chairman can manage relations between the board and the CEO.

United also said its management and board "take recent events extremely seriously" and are in the progress of changing its compensation structure so incentives in 2017 "are directly and meaningfully tied to progress in improving the customer experience and in the necessary cultural and process changes in support of this goal."

The recent events are the latest developments in a tumultuous 18-month tenure for Mr. Munoz. He has withstood one of the more star-crossed initiations into the CEO role. Coming to the nation's No. 3 airline by traffic in the fall of 2015 as a change agent with no airline experience save for years on the board, he then suffered a major heart attack that knocked him out of action.

Three months later, he received a heart transplant, missing a total of five months of work.

The airline was run by the general counsel and several key positions in the executive ranks were run by "acting" executives.

When he returned 13 months ago in good health, Mr. Munoz focused on improving what had been toxic employee relations after the 2010 merger of United and Continental airlines under his predecessor.

Mr. Munoz, an affable man, spent much effort to dispel worker unrest by having his team reach new labor agreements with unionized employees.

That raised the company's already high costs, but gave it a platform on which to start turning around operations, which lagged behind those of its competitors.

The turnaround started to take hold, aided by Mr. Munoz's decisions to hire some new executive talent.

But then came the social-media outrage about Flight 3411.

The initial response by Mr. Munoz was widely panned in part because he castigated Dr. Dao, the ejected passenger, as being "belligerent."

Only later did the CEO apologize profusely to the passenger and launch an investigation into the incident. Some people close to the board said the response was flat-footed and social media erupted anew.

Mr. Munoz received $18.7 million in total compensation last year. His salary was $1.19 million.

Amid the $13.8 million in stock awards he received was a restricted share award of $6.8 million related to his 2015 employment agreement, which was signed at the end of the year.

Mr. Munoz, 58 years old, ceded the president's role last August to Scott Kirby, a longtime airline executive who was hired from American Airlines Group Inc.

The United CEO, who had no direct airline experience when he was plucked from the board in late 2015 after his predecessor was ousted, had been president of railroad giant CSX Corp.

United said its corporate clients are pushing the airline to fix its customer service, according to Mr. Kirby.

United has reached out to some corporate clients to explain the airline's procedures in instances of overbooked flights and reassured them that it is making changes to its policies.

Frequent fliers, many of whom are traveling on business, generate about half of United's revenue.

United reported strong profit in the first quarter, a period that ended before Dr. Dao's forced removal from the flight. Mr. Kirby previously said it is too early for United to say whether furor over the mistreated passenger has hurt bookings.

Mr. Munoz has launched a review of the airline's policies related to bumping passengers, checking in crew members, boarding pets, relations with law enforcement at airports and the carrier's training programs.

The results are expected this week, and the CEO recently vowed to "take immediate, concrete action...to fix what's broken so this never happens again."

United's annual meeting is scheduled for May 24 at its Willis Tower headquarters in downtown Chicago.

Shares of United closed down 24 cents to $69.56 on Friday.

REVIEW

Continued from the prior page

ners entails a thorough review of candidates, with feedback from their managers, colleagues and direct reports.

But in an internal firm survey in 2015, many Goldman employees said they wanted more regular feedback, Ms. Cooper said.

The software for the review system was developed in-house by Goldman's engineers and is accessible from smartphones. Ms. Cooper chose Goldman's investment-banking division as a testing ground last year, figuring that if its harried bankers could be convinced to use it, others would follow.

It is easy to view Goldman's latest shift as a response to millennials, with what is often described as their expectations of constant praise. And indeed, Wall Street has changed much about its work environment in recent years to satisfy a younger generation, including "protected weekends" at J.P. Morgan, one-month sabbaticals at Morgan Stanley and faster promotions at Goldman.

But Ms. Cooper said vice presidents and managing directors, a group that is typically in their 30s and 40s, were the most likely in the 2015 survey to say they wanted more frequent reviews.

Financial firms need to adapt their management to keep younger workers. "If you're a boomer, you grew up in an environment where it was, 'put your head down, work really hard, and if you don't get fired you know you're doing OK,' " Carla Harris, a vice chairman at Morgan Stanley, said at a Wall Street Journal event this past week.

That won't work for millennials, who grew up in a more transparent world, she said. They will be loyal to employers as long as they have a clear sense of where they stand and where they can expect to go in their careers. "If you're giving them lots of feedback and being transparent, that will create some stickiness," she said.

—Emily Glazer contributed to this article.

Electric-Vehicle Makers Eye China

By Trefor Moss
And Mike Colias

SHANGHAI—The world's top auto makers are gearing up to build electric cars in China, despite concerns about market demand and the potential their technology could be compromised in a market with weak safeguards for intellectual property.

Companies including **Volkswagen** AG, **General Motors** Co. and **Toyota Motor** Corp. set out plans for electric-car production in China at last week's Auto Shanghai expo, bowing to pressure from Beijing.

Auto makers who don't set up production for electric vehicles, or EVs, in the world's most populous country could find themselves shut out of it.

Auto makers last week set out plans for production of electric cars in China.

Even so, some privately admit to being anxious about opaque regulations governing battery production and technology transfer and misgivings about near-term demand for battery-powered cars.

GM, for example, confirmed it would build a Buick version of the plug-in hybrid Chevrolet Volt in China with its local partner, **SAIC Motor** Corp. But Mark Reuss, GM's product-development chief, sounded less than bullish when asked if there was genuine demand for EVs in China.

"I think there could be," Mr. Reuss said.

Ultimately, the indispensability of China's auto market meant it was "manifest destiny" that foreign auto makers would agree to set up electric-car plants in China sooner or later, said Bill Russo, Shanghai-based managing director at consulting firm **Gao Feng Advisory**.

Tesla Inc., which didn't attend Auto Shanghai, is almost alone in not having lined up to confirm plans to manufacture electric cars in China. Even Toyota, which previously rejected the EV technology in favor of hybrids and fuel-cell vehicles, said it would ramp up EV development.

An estimated 350,000 EVs were sold in China last year, roughly half the global total. Most analysts expect the market to expand especially quickly as China moves to reduce air pollution from gas-powered vehicles and offers incentives for consumers to buy EVs.

Auto makers are unsure about demand, however, fueling concerns that they may need to offer big discounts to move inventory.

Automotive Foresight, a Shanghai-based research company, estimates 650,000 to two million electric and plug-in hybrid vehicles will be sold in China in 2020, out of an estimated 26 million car sales overall that year.

At the auto show, Toyota's senior managing officer, Hiroji Onishi, told reporters he felt "skepticism [about] whether the consumers would still want to buy EVs" once subsidies disappear, which is expected to occur around 2020.

Starting next year, auto makers expect they will be required to produce in China a specific number of electric or plug-in hybrid vehicles proportionate to their total output, according to foreign car firms involved in negotiations with the government.

Building cars in China makes it far easier to generate sales, because Beijing slaps a 25% tariff on imported cars. But profits from cars built in China must be shared with a Chinese joint-venture partner.

Exxon Rebuffed on Russia

Trump administration won't waive sanctions for firm to resume venture with Rosneft

By Jay Solomon
And Bradley Olson

WASHINGTON—President Donald Trump, whose family and political aides have faced scrutiny over their ties to Russia, rejected a bid by **Exxon Mobil** Corp. to sidestep U.S. sanctions against Moscow and resume an oil venture with a politically powerful Russian energy firm.

The announcement Friday comes as the White House pushes to firm up the president's foreign-policy and domestic agenda as he nears his 100th day in office.

Mr. Trump's decision to block Exxon Mobil, until the end of last year headed by Secretary of State Rex Tillerson, also shows how efforts to build bridges with Russian President Vladimir Putin are proving difficult, senior U.S. officials said.

Congressional and Federal Bureau of Investigation probes into ties between Mr. Trump's aides and Russian officials continue to dominate Washington's political debate, these officials said. And Mr. Putin repeatedly has made any strengthening of ties harder by maintaining Moscow's support for Syrian President Bashar al-Assad and escalating a crackdown on the Kremlin's political opponents at home, the officials said.

The Wall Street Journal reported on Wednesday that Exxon last month renewed a push for approval of a waiver on Russian sanctions for its oil exploration venture with PAO **Rosneft**, the Russian energy conglomerate closely aligned with Mr. Putin, according to a person familiar with the discussion. The company had originally submitted the application in 2015.

SPENCER PLATT/GETTY IMAGES
News of Exxon Mobil's waiver bid drew criticism in Congress.

The venture was frozen in 2014 after the Obama administration placed sanctions on Rosneft and its chief executive, Igor Sechin, in retaliation for Russia's annexation of the Crimea region of Ukraine.

"In consultation with President Donald J. Trump, the Treasury Department will not be issuing waivers to U.S. companies, including Exxon, authorizing drilling prohibited by current Russian sanctions," Treasury Secretary Steven Mnuchin said in a statement Friday. U.S. officials said Mr. Trump made the decision after close consultations with Mr. Mnuchin, a former Goldman Sachs executive.

The Trump administration's decision likely will make it impossible for Exxon to drill in Russia's Black Sea waters before its agreement with Rosneft expires at the end of this year. Under the companies' agreement, Exxon has until 2023 to explore some of Russia's Arctic waters if sanctions are lifted, the company has said.

"We understand the statement today by Secretary Mnuchin in consultation with President Trump," said Alan Jeffers, an Exxon Mobil spokesman. "Our 2015 application for a license under the provisions outlined in the U.S. sanctions was made to enable our company to meet its contractual obligations under a joint venture agreement in Russia, where competitor companies are authorized to undertake such work under European sanctions."

News of Exxon's Treasury application drew sharp criticism in Congress. Leading Democrats and some Republicans have said the Trump White House should be increasing sanctions on Russia for its alleged effort to interfere in last year's U.S. election, rather than loosening them. Russia has denied any interference in the election.

Lawmakers also raised concerns the Trump administration could face a conflict of interest in ruling on the Exxon application, given Mr. Tillerson's previous position as CEO, a job he held for 11 years. State Department officials said that Mr. Tillerson recused himself from any issues related to Exxon for two years.

"Given Russia's well-documented and troubling activities around the world, it is troubling Exxon Mobil would continue to press for its narrow economic advantage at the expense of our national interests," Sen. Ben Cardin of Maryland, the ranking Democrat on the Senate Foreign Relations Committee, said on Friday. "The deals they are seeking would put money in the pockets of Russian oligarchs and the Russian treasury, guaranteed to be used against America, our interests, and our allies."

Lawmakers have said they are investigating a string of contacts between Mr. Trump's aides and Russian officials during the campaign and the presidential transition. These include meetings and phone calls between his former national security adviser, Mike Flynn, and Russia's ambassador to Washington, in which U.S. sanctions on Russia were discussed.

They also include meetings that Mr. Trump's son-in-law, Jared Kushner, held with the head of a state-run Russian bank that is on a U.S. sanctions list.

The administration has been in an awkward dance with the Kremlin since Mr. Trump assumed office, after his repeated calls during the campaign for warmer ties.

Earlier this month, the Pentagon launched airstrikes on a Syrian military base believed to have been involved in a chemical-weapons attack against Syrian civilians. The U.S. missiles risked hitting Russian troops that were stationed at the base, according to U.S. officials. Russia and Syria are allies.

Mr. Trump also authorized Montenegro this month to become the 29th member of the North Atlantic Treaty Organization, despite repeated protests by Russia.

Mr. Tillerson recently visited Moscow to try to forge a more united front and met with Mr. Putin for more than two hours. But the former Exxon Mobil chief left Russia saying Washington's relations with Moscow were at a "low point."

—Felicia Schwartz contributed to this article.

Store Closings Accelerate As Online Retail Surges

By Suzanne Kapner

American retailers are closing stores at a record pace this year as they feel the fallout from decades of overbuilding and the rise of online shopping.

Just this past week, women's apparel chain **Bebe Stores** Inc. said it would close its remaining 170 shops and sell only online, while teen retailer **Rue21** Inc. announced plans to close about 400 of its 1,100 locations.

"There is no reason to believe that this will abate at any point in the foreseeable future," said Mark Cohen, the director of retail studies for Columbia Business School and a former executive at **Sears Canada Inc.** and other department stores.

Through April 6, closings have been announced for 2,880 retail locations this year, including hundreds of locations being shut by national chains such as Payless ShoeSource Inc. and RadioShack Corp. That is more than twice as many closings as announced during the same period last year, according to Credit Suisse.

Based on the pace so far, the brokerage estimates retailers will close more than 8,600 locations this year, which would eclipse the number of closings during the 2008 recession.

At least 10 retailers, including apparel seller Limited Stores Co., electronics chain Hhgregg Inc. and sporting-goods chain Gander Mountain Co., have filed for bankruptcy protection this year. That compares with nine retailers that declared bankruptcy, with at least $50 million in liabilities, for all of 2016.

The seeds of the industry's current turmoil date back nearly three decades, when retailers, in the throes of a consumer-buying spree and flush with easy money, rushed to open new stores. The land grab wasn't unlike the housing boom that also was under way at that time.

JAMES BORCHUCK/TAMPA BAY TIMES/ZUMA PRESS
Bebe Stores last week said it would shut its remaining locations.

"Thousands of new doors opened and rents soared," Richard Hayne, chief executive of **Urban Outfitters** Inc., told analysts last month. "This created a bubble, and like housing, that bubble has now burst."

The over-storing, including the influx of fast-fashion and off-price chains, resulted in a brutally competitive landscape that made it difficult for retailers to raise prices. "A pair of men's dress pants costs less today than they did a decade ago," Manny Chirico, chief executive of Calvin Klein and Tommy Hilfiger parent **PVH** Inc., said in a recent interview.

As retailers rushed to expand their physical footprint, the internet was gearing up to do to apparel companies what it had already done to booksellers: sap profits and eliminate what little pricing power these chains commanded.

Despite the view that shoppers prefer to try on clothing in stores, apparel and accessories are expected this year to overtake computers and consumer electronics as the largest e-commerce category as a percentage of total online sales, according to research firm eMarketer.

Helena Cawley, age 37, said she used to be a "die-hard" department-store shopper. But with two small children, the Manhattan entrepreneur doesn't have time to visit physical stores the way she once did. "I buy much more online now," she said. "With free returns and free shipping, it's so easy."

But that shift has come at a high cost to retailers. It is less profitable to do business online than in a brick-and-mortar store, largely due to the higher shipping, customer-acquisition and technology costs of the digital world. Retail margins on average fell to 9% last year from 10.5% in 2012, according to consulting firm AlixPartners LP. Over that period, e-commerce sales increased to 15.5% of total sales from 10.5%.

The internet has also made it easier for consumers to comparison shop, thereby erasing any pricing leverage retailers may have had.

To be sure, retailing has gone through shakeouts before, whether it was the superstores such as Wal-Mart Stores Inc., **Target** Corp. and **Kmart** that killed mom-and-pop shops, or category killers like **Barnes & Noble** Inc. and **Toys "R" Us** Inc. that did the same to smaller rivals.

And even today, there are chains that continue to grow, such as off-price retailer **TJX** Cos., which is opening hundreds of stores under its Marshalls, T.J. Maxx and **HomeGoods** banners, as it steals market share from **Macy's** Inc. and other traditional department stores.

"This is not the end of retailing as we know it," Mr. Bines said. "People are not going to stop going to stores."

—Theo Francis and Ben Eisen contributed to this article

Twitter Summons Triggers Probe

By Deepa Seetharaman

A recent attempt by federal officials to pressure **Twitter** Inc. to unmask the identity of those behind an account critical of the Trump administration has triggered an internal investigation into whether those officials abused their power, according to a letter released Friday.

U.S. Department of Homeland Security Inspector General John Roth confirmed the investigation in a letter to Sen. Ron Wyden of Oregon.

Mr. Wyden earlier called for an internal review of the U.S. Customs and Border Protection's decision to issue an administrative summons to Twitter on March 14 asking for information associated with the account @ALT_USCIS. The action prompted Twitter to sue the department.

The user or users behind @ALT_USCIS, one of several "alternative" accounts that have emerged on Twitter in recent months, purport to reflect the dissenting views of some federal officials. Tweets sent from this account have been critical of the Trump administration's officials and immigration policies.

Customs and Border Protection had sought information on @ALT_USCIS.

In a letter dated April 21, Mr. Roth said his office was investigating whether the probe by customs officials "was improper in any way, including whether CBP abused its authority in issuing the March 14, 2017 summons to Twitter." Mr. Roth's office is "also reviewing potential broader misuse of summons authority at the Department and/or its components."

The U.S. Customs and Border Protection is a unit of the Department of Homeland Security. On March 14, an agent of the U.S. Customs and Border Protection's Office of Professional Responsibility, which investigates employee misconduct, faxed the summons to Twitter.

On April 6, Twitter sued the Department of Homeland Security in federal court, alleging the agency's summons was unlawful. The department rescinded the summons the next day and Twitter dropped the lawsuit.

In his letter, Mr. Roth said customs officials asked his office to determine whether any classified information was transmitted by the @ALT_USCIS account. Mr. Roth said his office found none. He added that his office wouldn't investigate any "alleged misconduct" by the @ALT_USCIS account owner. "We strive to ensure that our work does not have a chilling effect on individuals' free speech rights," Mr. Roth said in the letter.

Inspectors general are independent watchdogs within an agency tasked with preventing waste and investigating misconduct.

YouTube to Factor in Record Labels

By Hannah Karp

When YouTube suggests to its more than 1 billion monthly users which music videos they should watch next, it bases those recommendations largely on what each viewer has watched already.

Later this year, the video-sharing site—which also happens to be the world's most popular source of free, on-demand music—plans to add a new factor into the equation: what record labels want those users to hear.

"We'll be fine-tuning our recommendations to users so that, in addition to the many other signals the algorithm takes into account, it also considers artist and label promotional activities," said YouTube's new head of music, Lyor Cohen, a music-industry veteran who until 2012 was a top executive at the world's third-biggest record company, Access Industries' **Warner Music Group**.

The goal, he said, is "putting new music in front of likely consumers."

For a fan who watches nothing but the late pop star Michael Jackson's videos from the 80s, for example, YouTube might in the future recommend a new pop song by an artist such as Bruno Mars.

MATT SAYLES/ASSOCIATED PRESS

Bruno Mars at the Grammy Awards show in February. A shift in YouTube's music priorities could be a coup for the record labels.

Whether the move will improve or damage the experience for fans isn't clear—and the track record for such arrangements is mixed. Radio stations' narrow, repetitive playlists can suffer from too much promotion, for example, with major record labels dominating the charts as they outspend independent labels and artists. In the past this has led to government lawsuits over illegal pay-for-play schemes, starting with the "payola" scandals of the 1950s, that the major record companies spent millions to settle. Federal law requires that broadcasters disclose any payment they get for putting a song on the air.

Major labels also now overwhelm the charts and influential playlists on subscription streaming services, in part because their licensing contracts with companies such as **Spotify** AB, for example, guarantee them a certain amount of promotional real estate in Spotify's most prominent areas, people familiar with the matter said.

Spotify, though, also works to surface independent artists that gain organic momentum. **Apple** Inc.'s Apple Music also maintains close ties with the major labels but funds and promotes other music, such as Frank Ocean's self-released 2016 album "Blonde," the R&B artist's first release after leaving his deal at Vivendi SA's Universal Music Group.

YouTube expects that adding record labels' priorities into its algorithm will improve the user experience, primarily by surfacing new music faster for users who might like it. Under the current system, it could take days for YouTube to recommend a new song to a likely fan, an event that would now occur only for limited reasons, such as users with similar tastes cuing up the same song, according to a person familiar with the system.

If a user doesn't watch or quickly skips a video promoted by a record label, the system won't suggest it again. A large number of other factors, including previous viewing habits, will continue to help determine watch-next suggestions, this person said. YouTube will work to make sure the system doesn't favor major-label artists over independent acts, the company said.

The worlds of music and technology are increasingly colliding—and in some cases clashing—as music-streaming services run by tech giants such as Apple, Amazon.com Inc. and YouTube's parent, Alphabet Inc., help jump-start the music industry's growth amid declining sales of compact discs and music downloads. While techies tend to exalt user-driven, crowdsourced systems, record companies have long preferred to maintain control over how their music is promoted.

The shift in YouTube's music priorities could be a coup for the record labels, which have wanted to better harness YouTube's massive global viewership to sell music.

Twitch Expands Video-Creator Incentives

By Sarah E. Needleman

Amazon.com Inc.'s Twitch is allowing more broadcasters to make money on its platform, a move that could help the live-streaming business seize on challenges facing bigger rivals YouTube and Facebook Inc.

On Friday, Twitch said it would open up its revenue-sharing program for more broadcasters to get paid whenever they receive "bits"—custom, animated emoticons that act as an online currency for tipping by viewers. Twitch says bits are a way for those in the broadcasters' channels to cheer them on.

Twitch will add more moneymaking opportunities to its new "affiliate program" in the future, the company said. Currently, only the top 1% of the 2.2 million people who stream on Twitch at least once a month—members of its so-called "partner program"—can generate revenue on the platform.

With the new initiative, Twitch aims to "encourage more people to broadcast and more fans to watch," said Ethan Evans, senior vice president of commerce and developer success.

Twitch's push to help line more broadcasters' pockets comes at a time when its bigger competitors are struggling.

YouTube, part of Google parent **Alphabet** Inc., this year has lost potentially hundreds of millions of dollars in advertising—of which its content creators get a cut—as brands boycotted the site for placing its ads next to inappropriate videos. Its biggest star creator, 27 year-old Felix Kjellberg, who goes by PewDiePie, recently started a weekly show on Twitch, his first outside of YouTube. (Mr. Kjellberg isn't currently part of Twitch's partner program, which would allow him to earn money, the company said.)

Meanwhile, many publishers have struggled to generate revenue from Facebook video ads. Last year, the social network paid tens of millions of dollars to internet stars and media companies to use its live-video feature, which has been overshadowed by violent incidents, such as when a Cleveland man recently posted a video of a murder on the site.

Amazon bought Twitch in 2014 for $970 million. Among the top 500 most-visited sites in the U.S. in March, Twitch ranked No. 7 by average time spent per visitor, up from No. 18 a year earlier, according to comScore. Facebook in March ranked at No. 2. ComScore said all websites from Alphabet rank collectively at No. 3. If it were to break out YouTube by itself, the video site would rank at No. 5, it said.

On Facebook and YouTube, broadcasters mainly make money through advertising. Twitch also has an advertising program, and its top broadcasters have access to a variety of other moneymaking tools, including a portion of subscription sales to their channels.

Last month, Twitch began selling digitally delivered computer videogames, a move that gives its top broadcasters another way to generate revenue.

MIMS

Continued from page B1

lever might buy store sales data to figure out which products are in high demand and when people buy them. (Ms. Evans says that when retailers sell data, it's anonymized and not linked to individual consumers.)

Personalization and Automation = Profits

There's a debate in the auto industry: Can Tesla get good at making cars faster than Ford, General Motors and Toyota can get good at making self-driving electric vehicles? The same applies to retail: Can physical retailers build intimate digital relationships with their customers—and use that data to update their stores—faster than online-first retailers can learn how to lease property, handle inventory and manage retail workers?

Online retailers know what's popular, and how customers who like one item tend to like certain others. So Amazon's physical bookstores can put out fewer books with more prominently displayed covers. Bonobos doesn't even sell clothes in its stores, which it calls "guideshops." Instead, customers go there to try clothes on, and their selections are delivered through the company's existing e-commerce system.

While online retailers are accustomed to updating inventory and prices by the hour, physical retailers simply don't have the data or the systems to keep up, and tend to buy and stock on cycles as long as a year, says George Faigen, a retail consultant at Oliver Wyman. Some legacy retailers are getting around this by teaming up with online players.

Legacy Tech Won't Cut It

Perhaps the biggest challenge for existing retailers, says Euromonitor's Ms. Evans, is finding the money to transition to this hybrid online-offline model. While Target has announced it will spend $7 billion over the next three years to revamp its stores, investors fled the stock in February after Target reported 2017 profits might be 25% less than expected.

When Warby Parker, the online eyeglasses retailer, set out to launch stores across the U.S., the company looked for in-store sales software that could integrate with its existing e-commerce systems. It couldn't find a system up to the task, so it built one from scratch. These kinds of systems allow salespeople to know what customers have bought both online and off, and what they might be nudged toward on that day.

BEBETO MATTHEWS/ASSOCIATED PRESS

More shoppers want curated, personalized shopping experiences like those they get online. Above, J.P. Grant, a customer, at a Bonobos store in New York City's financial district in March.

Andy Katz-Mayfield, co-founder and co-chief executive of Harry's, is skeptical that traditional retailers like Wal-Mart can make the leap, even if they invest heavily in technology.

The problem, he says, is that selling online isn't just about taking orders through a website. Companies that succeed are good at selling direct to consumers—building technology from the ground up, integrating teams skilled at navigating online marketing's ever-shifting terrain and managing the experience through fulfillment and delivery, Mr. Katz-Mayfield says.

It isn't hard to picture today's e-commerce companies becoming brick-and-mortar retailers. It's harder to bet on traditional retailers becoming as tech savvy as their e-competition.

BUSINESS WATCH

SAMSUNG BIOEPIS

Remicade Biosimilar Gets FDA Approval

South Korea's **Samsung** conglomerate won approval from U.S. regulators for a lower-priced copy of the blockbuster rheumatoid-arthritis drug Remicade, clearing the way for sales in the world's biggest drug market.

The biosimilar, which is a copy of complex biologic drugs made from living cells, would be the second copy of Johnson & Johnson's top-selling pharmaceutical to hit the market, after **Pfizer** Inc. began selling its Remicade biosimilar Inflectra late last year. The approval is the first in the U.S. for Samsung, which has been trying to diversify beyond electronics.

Samsung said it wouldn't announce the price of its new drug, named Renflexis. Companies have priced the handful of biosimilars approved so far, including Inflectra, about 15% less than the list price of the original drug, though analysts expect prices will drop as more enter the market.

Renflexis may not go on sale until late this year.

Samsung Bioepis Co., the conglomerate's drug development arm, has struck a deal with Merck & Co. to sell Renflexis in the U.S. Renflexis had previously won regulatory approval in Europe, Australia and South Korea.

—Jonathan Cheng and Jonathan D. Rockoff

VOLKSWAGEN

Auto Maker Bows To Criminal Fine

A federal judge ordered **Volkswagen** AG to pay a $2.8 billion criminal fine for rigging diesel-powered vehicles to cheat on government emissions tests, formalizing a punishment the German auto giant agreed to earlier this year in an unprecedented plea deal with U.S. prosecutors.

MARK KAUZLARICH/BLOOMBERG NEWS

A federal judge sentenced Volkswagen on Friday.

U.S. Judge Sean Cox on Friday sentenced Volkswagen during a hearing in a Detroit federal court, a little over a month after the auto maker pleaded guilty to criminal charges stemming from the emissions fraud. Volkswagen admitted to conspiring for nearly a decade to deceive U.S. officials with illegal software that allowed vehicles to pass government emissions tests and then pollute far beyond legal limits on the road.

In addition to the fine, the judge's sentence includes the assignment of an independent monitor to audit Volkswagen's regulatory-compliance practices for at least three years. Including a separate $1.5 billion civil penalty, Volkswagen agreed to pay a total of $4.3 billion to settle the U.S. Justice Department probe.

Larry Thompson, a deputy attorney general under former President George W. Bush, has been named to lead the independent monitoring team at Volkswagen, Assistant U.S. Attorney John Neal said.

Volkswagen's general counsel, Manfred Döss, said the auto maker "deeply regrets the behavior that gave rise to this case."

Volkswagen has admitted to installing so-called defeat devices on nearly 600,000 diesel-powered vehicles in the U.S. that duped environmental regulators. The auto maker has acknowledged putting the devices in some 11 million vehicles globally.

—Christina Rogers and Mike Spector

MORGAN STANLEY

Klaus Kleinfeld Exits Company's Board

Klaus Kleinfeld, the ousted chief executive of Arconic Inc. who left the aluminum-parts maker last week after sending a bizarre letter to an activist shareholder, will step off the board of Morgan Stanley.

Mr. Kleinfeld, who has been a director since 2012, has resigned from the board and won't stand for re-election at Morgan Stanley's annual meeting next month, the firm said in a regulatory filing. He left Arconic last week following a monthslong fight with activist hedge fund Elliott Management Corp., which had called for his ouster. Mr. Kleinfeld sent Elliott boss Paul Singer a letter that referenced Mr. Singer's alleged partying during the 2006 World Cup, a letter the Arconic board didn't approve and that the company said showed poor judgment.

Mr. Kleinfeld is also on the board of Hewlett Packard Enterprise Co., the software business spun out of Hewlett-Packard Co.

—Liz Hoffman

AIG Nears Choice of Successor To Chief

By Joann S. Lublin And Leslie Scism

Former **American International Group** Inc. executive Brian Duperreault is a leading candidate to succeed AIG Chief Executive Officer Peter Hancock, according to people familiar with the matter.

The onetime lieutenant of Maurice "Hank" Greenberg spent roughly two decades at AIG before leaving to run three other companies. He is now chairman and chief executive of Bermuda-based **Hamilton Insurance Group** Ltd.

AIG's board is seriously considering Mr. Duperreault "along with one or two other guys," one of these people said. AIG's board hasn't made a final decision, this person said.

An AIG spokesman declined to comment, as did a Hamilton spokeswoman. She said Mr. Duperreault wasn't available for comment.

Bloomberg News earlier reported that Mr. Duperreault was under consideration.

The choice of Mr. Duperreault would bring back a figure well known within AIG. He started work there in 1973 in the actuarial department and became one of the company's top executives during the reign of Mr. Greenberg, who as CEO built AIG into a global powerhouse before being pushed out in 2005.

While at AIG, Mr. Duperreault was long considered a potential successor to Mr. Greenberg. But he left in 1994 to run then-Bermuda-based specialty insurer **ACE** Ltd., which he expanded into a diversified insurance firm that eventually acquired **Chubb** Corp. He later became CEO of consulting and insurance brokerage **Marsh & McLennan** Cos.

The new CEO of AIG will have to re-establish leadership for a company that received a $185 billion government bailout during the financial crisis and is now under pressure from activist investors over lackluster results.

In March, AIG said Mr. Hancock would resign after less than three years at the helm. Many board members were unhappy about recent setbacks in the company's plan for boosting profitability, said people familiar with the matter, while several also feared a potential fight with activist investor Carl Icahn. Mr. Hancock agreed to stay until a successor was found.

—Bradley Hope contributed to this article.

Not Your Conventional Bank CEO

M&T's 83-year-old chief rides a decrepit bike, owns a vineyard; long, steady growth

By Christina Rexrode


MICHAEL BUCHER/THE WALL STREET JOURNAL

M&T Bank CEO Bob Wilmers rides to his Manhattan office on a bicycle with mismatched tires.

Bob Wilmers has been doing things his way since 1983. He doesn't intend to stop.

Mr. Wilmers is chief executive and chairman of **M&T Bank** Corp., a Buffalo, N.Y.-based lender that from the outside appears to be just another boring regional bank. That doesn't account for Mr. Wilmers, an 83-year-old cheapskate with an air of grandeur.

He stuffs his office with accouterments from his award-winning vineyard in France's Bordeaux region, rides to work on a decrepit bicycle with mismatched tires, and lambastes whomever he believes is threatening his bank or small-business customers, be it the government for overreach or private-equity firms for greed.

"What can I say?" said Mr. Wilmers, who became CEO in 1983, after waging an activist campaign to get on the board. Today, he directly or indirectly controls almost 6% of M&T, whose market value is around $23 billion. "I can't spend all my time worrying what other people think."

And he doesn't. "He's a contrarian," said Martin Heckscher, who graduated from Harvard with Mr. Wilmers. "He does everything opposite."

By the time Mr. Wilmers got involved with M&T in the early 1980s, he already had had a few careers: a job in the finance administration of New York City Mayor John Lindsay was followed by a posting as head of Belgium for Morgan Guaranty, a predecessor of J.P. Morgan Chase & Co.

At M&T, he grew the bank steadily even though it is concentrated in slow-growth markets throughout upstate New York and the Rust Belt. The plan was simple: quality loans to worthy borrowers.

In 1990, M&T had revenue of $286 million on a deposit base of $6.2 billion. By 2008, the bank's deposits had grown to $42.6 billion and revenue to $2.9 billion. This year, the bank's deposits could top $100 billion.

Mr. Wilmers has bought 24 competitors but never had an acquisition plan. It is better, Mr. Wilmers says, to examine opportunities when they present themselves than commit to growing by a certain amount or into particular locations. He has expanded only in areas where M&T already is or borders, adamant that the bank do business only where it knows the local economy.

"To the extent you consider me unusual, there's nothing unusual about the bank," said Mr. Wilmers. "We just try to be good at what we do."

When he stumbled—for instance, in 2007 buying into collateralized-debt obligations made of subprime loans—he acknowledged the fumbles, saying M&T "was not immune" to the temptation of easy growth. He also regretted expanding the bank into nonprime mortgages, including in unfamiliar regions.

But he digs his heels in when he feels it is warranted. For instance, a wealth-management firm M&T owns, Wilmington Trust, was indicted by the Justice Department, which alleged it misled regulators about the quality of some of its loans before it was bought by M&T.

M&T, which hasn't been charged, has said the lawsuit is unfounded and is fighting the criminal charges. Mr. Wilmers believes the legal action will discourage healthy banks from rescuing troubled companies in future crises. A trial is scheduled for October.

Throughout the financial crisis and since, M&T never cut its dividend and never posted a quarterly loss. In the nearly 34 years since Mr. Wilmers took over M&T, including a period in the mid-2000s when he stepped back from the role, the bank has generated an average annual total return, which includes reinvested dividends, of 16.7%. That puts him near, but not quite in, the same league as Warren Buffett, whose Berkshire Hathaway Inc. is also a major shareholder.

Mr. Wilmers's low-key manner can cause people to underestimate him. He was known to show up to client meetings driving his 1990 Toyota Corolla station wagon, until the car finally died about a year ago. During meetings, it can seem like he isn't paying attention—until he pipes up with a sharp observation, according to people who know him.

"Sometimes people think he's sleepy," said David Walentas, a Brooklyn real-estate developer. "He's the smartest guy in the room." His firm tapped M&T to lead financing for a number of projects throughout New York City.

Last year, M&T posted a 22% increase in earnings, but the board cut Mr. Wilmers's pay to $3.5 million from $3.7 million. Their reason: Shareholder returns could have been better.

Public Pensions Fight Wells Fargo Directors

By Joann S. Lublin And Emily Glazer

PATRICK SISON/ASSOCIATED PRESS

Wells Fargo's annual shareholder meeting takes place this week.

A number of public pension funds have come out against directors on **Wells Fargo & Co.**'s board, just days ahead of the what is shaping up to be a contentious annual shareholder meeting for the embattled bank.

New York City's Office of the Comptroller, which oversees pension funds that own about 11.5 million shares or about 0.23% of Wells Fargo shares outstanding, said it would oppose reelection of 10 out of 15 of the San Francisco bank's directors. That includes the bank's nonexecutive chairman, Stephen Sanger, plus all but two members of the board's risk, audit and human-resources committees.

Additionally, **California State Teachers' Retirement System**, or Calstrs, said it voted its 11.6 million shares against nine board members, including Mr. Sanger.

The other large public-pension system in California, the **California Public Employees' Retirement System**, or Calpers, is voting its 13.9 million shares similarly, the San Francisco Chronicle reported Friday evening.

Together, the two largest public pension systems in California hold about 0.5% of Wells Fargo's shares outstanding.

"These board members bear responsibility for the failure of oversight of sales practices at Wells Fargo," a spokesman for Calstrs said.

Wells Fargo's shareholders meeting is scheduled for Tuesday and directors face a tough election battle following the bank's sales-practices scandal last fall. The bank reached a $185 million settlement with regulators over employees opening as many as 2.1 million accounts without customers' knowledge.

Earlier this month, influential proxy advisory firm **Institutional Shareholder Services** Inc. recommended shareholders vote against Mr. Sanger and 11 of his colleagues on Wells Fargo's 15-member board. The second-largest proxy advisory firm, **Glass Lewis** & Co., recommended investors vote for Mr. Sanger but against six directors.

The comptroller's office also said New York City pension funds will support Vice Chairman Betsy Duke, a former regulator, and Suzanne Vautrinot, a cybersecurity expert, because they only joined the board in 2015. The former is on the risk panel, and the latter serves on the audit committee.

"When banks take shortcuts like this, everyone loses," said New York City Comptroller Scott M. Stringer. "Customers become victims. Public confidence dissipates. And long-term investors like the New York City pension funds are undercut."

He added that the sales-practices scandal was the "result of a serious oversight failure by Wells Fargo's board, and the directors responsible need to be held accountable. It's time for change at the top."

A Wells Fargo spokesman declined to comment on individual shareholders. But in an interview this month, Chief Executive Timothy Sloan said "to the extent we have any shareholder that votes against certain directors or doesn't agree with proposals...we'll make sure to reach out to them."

As of Wednesday afternoon, Mr. Sloan said he hadn't heard from shareholders who wanted to make changes to the board.

A spokesman for the bank's board declined to comment.

FINANCE WATCH

LONDON METAL EXCHANGE

Interim CEO Wins Top Job, Permanently

The **London Metal Exchange** has appointed Matthew Chamberlain as chief executive officer, the exchange said on Friday.

Mr. Chamberlain, who was previously chief operating officer and head of strategy of the LME, had been performing the role on an interim basis since former CEO Garry Jones stepped down in January.

The management change comes at a time when the 140-year-old exchange faces falling trading volumes. The average daily volume in 2016 declined almost 8% from the previous year, according to the LME website.

The LME is owned by Hong Kong Exchanges & Clearing Ltd., or HKEx.

The exchange said that Mr Chamberlain will remain on the LME board and as a member of HKEx's management committee.

—Sarah McFarlane

LEON NEAL/AGENCE FRANCE-PRESSE/GETTY IMAGES

Matthew Chamberlain has been running the LME since January.

SEC

Acting Chief Wants New Fiduciary Rule

Wall Street's top regulator should craft its own rule governing the advice that stockbrokers provide to retail investors, the Securities and Exchange Commission's acting chairman said.

Michael Piwowar's comments indicate he favors the brokerage industry's call to replace a rule issued last year by the Labor Department with one, written by the SEC, that businesses would find less onerous. The Labor Department rule, issued under the Obama administration, imposed new restrictions on conflicts of interest that affect investment advice. The Trump administration has postponed the measure, known as the fiduciary rule, as it considers how to modify or repeal it.

"We at the SEC need to take the opportunity now to fill that space," Mr. Piwowar, a Republican, said on Friday at a conference sponsored by the Mutual Fund Directors Forum.

It isn't clear whether Mr. Piwowar's views on the rule will prompt the SEC to draft it. As an acting chairman, he will soon be succeeded by Jay Clayton, a partner at Sullivan & Cromwell LLP. President Donald Trump picked Mr. Clayton to head the SEC on a permanent basis.

—Dave Michaels

VISA

New Scrutiny Over Debit Cards

Visa Inc. disclosed Friday that it received a civil investigative demand from Ohio Attorney General Mike DeWine's office in January, requesting information pertaining to several debit-card practices, including the company's rules related to the acceptance of its debit cards.

A spokeswoman for Mr. DeWine said the probe is focused on chip-enabled cards.

Other practices that the attorney general's office is looking into include Visa's card-holder-verification methods and the routing of its debit-card transactions. Visa said it is cooperating with the attorney general.

—AnnaMaria Andriotis

MARKETS DIGEST

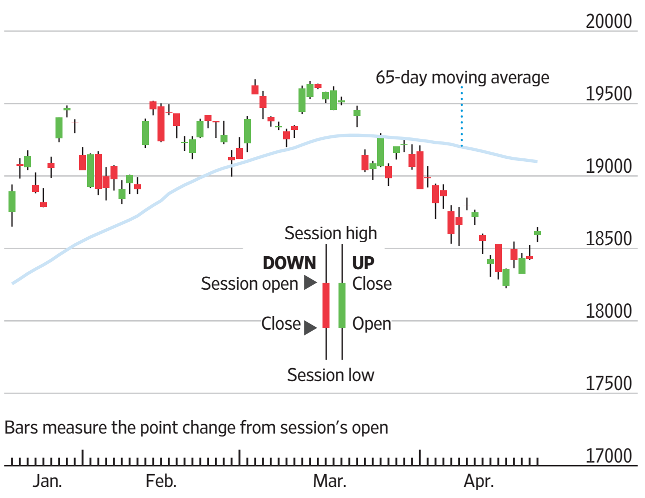
Data as of Friday, April 21, 2017

Nikkei 225 Index

18620.75 ▲190.26, or 1.03%

High, low, open and close for each trading day of the past three months.

Year-to-date	▼ 2.58%	
52-wk high/low	19633.75	14952.02
All-time high	38915.87	12/29/89



STOXX 600 Index

378.12 ▲0.06, or 0.02%

High, low, open and close for each trading day of the past three months.

Year-to-date	▲ 4.62%	
52-wk high/low	381.90	308.75
All-time high	414.06	4/15/15

S&P 500 Index

4 p.m. New York time

2348.69 ▼7.15, or 0.30%

High, low, open and close for each trading day of the past three months.

	Last	Year ago
Trailing P/E ratio *	24.39	24.11
P/E estimate *	18.24	17.80
Dividend yield	1.98	2.17
All-time high:	2395.96, 03/01/17	

International Stock Indexes

Data as of 4 p.m. New York time

Region/Country	Index	Latest Close	Latest NetChg	Latest % chg	52-Week Range Low	52-Week Range High	YTD % chg
World	**The Global Dow**	2660.42	–4.99	**–0.19**	2197.91	2704.60	5.1
	MSCI EAFE	1780.77	–2.90	**–0.16**	1520.94	1812.06	5.7
	MSCI EM USD	961.78	3.33	**0.35**	781.84	973.08	11.5
Americas	**DJ Americas**	566.72	–1.65	**–0.29**	480.83	577.52	4.9
Brazil	**Sao Paulo Bovespa**	63760.62	...	**Closed**	48471.71	69052.03	5.9
Canada	**S&P/TSX Comp**	15614.48	–11.08	**–0.07**	13563.84	15922.37	2.1
Mexico	**IPC All-Share**	48967.83	–177.13	**–0.36**	44282.03	49637.93	7.3
Chile	**Santiago IPSA**	3710.82	1.57	**0.04**	3054.30	3782.66	15.1
U.S.	**DJIA**	20547.76	–30.95	**–0.15**	17140.24	21115.55	4.0
	Nasdaq Composite	5910.52	–6.26	**–0.11**	4594.44	5916.78	9.8
	S&P 500	2348.69	–7.15	**–0.30**	2000.54	2395.96	4.9
	CBOE Volatility	14.63	0.48	**3.39**	10.58	25.76	4.2
EMEA	**Stoxx Europe 600**	378.12	0.06	**0.02**	308.75	381.90	4.6
	Stoxx Europe 50	3115.47	3.14	**0.10**	2636.71	3163.46	3.5
France	**CAC 40**	5059.20	–18.71	**–0.37**	3984.72	5135.28	4.0
Germany	**DAX**	12048.57	21.25	**0.18**	9268.66	12312.87	4.9
Israel	**Tel Aviv**	1393.14	...	**Closed**	1378.66	1496.56	–5.3
Italy	**FTSE MIB**	19741.75	–107.69	**–0.54**	15103.58	20492.94	2.6
Netherlands	**AEX**	512.19	0.47	**0.09**	411.62	519.16	6.0
Russia	**RTS Index**	1084.17	0.82	**0.08**	879.55	1195.61	–5.9
Spain	**IBEX 35**	10377.00	4.50	**0.04**	7645.50	10529.00	11.0
Switzerland	**Swiss Market**	8553.99	–3.88	**–0.05**	7593.20	8704.39	4.1
South Africa	**Johannesburg All Share**	52194.59	–302.03	**–0.58**	48935.90	54474.09	3.0
Turkey	**BIST 100**	92423.93	384.55	**0.42**	71594.98	92423.93	18.3
U.K.	**FTSE 100**	7114.55	–3.99	**–0.06**	5923.53	7429.81	–0.4
Asia-Pacific	**DJ Asia-Pacific TSM**	1549.34	10.80	**0.70**	1324.15	1569.47	8.9
Australia	**S&P/ASX 200**	5854.10	32.70	**0.56**	5103.30	5934.00	3.3
China	**Shanghai Composite**	3173.15	1.05	**0.03**	2806.91	3288.97	2.2
Hong Kong	**Hang Seng**	24042.02	–14.96	**–0.06**	19694.33	24593.12	9.3
India	**S&P BSE Sensex**	29365.30	–57.09	**–0.19**	25101.73	29974.24	10.3
Indonesia	**Jakarta Composite**	5664.48	69.17	**1.24**	4704.22	5680.24	6.9
Japan	**Nikkei Stock Avg**	18620.75	190.26	**1.03**	14952.02	19633.75	–2.6
Malaysia	**Kuala Lumpur Composite**	1756.05	14.44	**0.83**	1614.90	1756.05	7.0
New Zealand	**S&P/NZX 50**	7197.22	9.17	**0.13**	6664.21	7571.11	4.6
Pakistan	**KSE 100**	49708.65	965.09	**1.98**	33684.56	50192.36	4.0
Philippines	**PSEi**	7578.16	14.71	**0.19**	6563.67	8102.30	10.8
Singapore	**Straits Times**	3139.83	1.95	**0.06**	2729.85	3187.51	9.0
South Korea	**Kospi**	2165.04	15.89	**0.74**	1925.24	2178.38	6.8
Taiwan	**Weighted**	9717.41	84.72	**0.88**	8053.69	9972.49	5.0
Thailand	**SET**	1570.02	3.74	**0.24**	1381.69	1591.00	1.8

Source: SIX Financial Information; WSJ Market Data Group

Global government bonds

Latest, month-ago and year-ago yields and spreads over or under U.S. Treasurys on benchmark two-year and 10-year government bonds around the world. Data as of 3 p.m. ET

Coupon	Country/ Maturity, in years	Yield	Spread Over Treasurys, in basis points: Latest	Previous	Month Ago	Year ago	Yield: Previous	Month ago	Year ago
5.250	**Australia** 2	**1.666**	**48.2**	46.2	53.5	**122.5**	**1.651**	1.803	**2.030**
4.750	10	**2.549**	**31.6**	29.0	39.8	**74.0**	**2.523**	2.816	**2.605**
3.000	**Belgium** 2	**-0.525**	**-171.0**	-172.9	-171.8	**-126.0**	**-0.540**	-0.450	**-0.454**
0.800	10	**0.811**	**-142.3**	-144.7	-143.6	**-141.3**	**0.785**	0.982	**0.451**
0.000	**France** 2	**-0.303**	**-148.7**	-152.0	-170.7	**-124.2**	**-0.331**	-0.439	**-0.437**
1.000	10	**0.939**	**-129.4**	-137.8	-131.8	**-129.8**	**0.854**	1.100	**0.567**
0.000	**Germany** 2	**-0.790**	**-197.5**	-197.7	-200.6	**-128.6**	**-0.788**	-0.738	**-0.480**
0.250	10	**0.255**	**-197.8**	-198.6	-195.6	**-162.3**	**0.246**	0.462	**0.242**
0.300	**Italy** 2	**-0.012**	**-119.6**	-122.7	-129.8	**-79.6**	**-0.038**	-0.030	**0.009**
2.200	10	**2.280**	**4.7**	3.3	-10.7	**-40.3**	**2.266**	2.311	**1.462**
0.100	**Japan** 2	**-0.220**	**-140.4**	-141.2	-153.1	**-107.0**	**-0.223**	-0.263	**-0.264**
0.100	10	**0.016**	**-221.7**	-221.8	-235.2	**-198.5**	**0.015**	0.066	**-0.121**
4.000	**Netherlands** 2	**-0.679**	**-186.4**	-190.0	-198.6	**-130.2**	**-0.712**	-0.718	**-0.496**
0.750	10	**0.510**	**-172.3**	-173.8	-171.9	**-154.8**	**0.495**	0.699	**0.316**
4.750	**Portugal** 2	**0.398**	**-78.6**	-79.4	-130.9	**-52.9**	**0.395**	-0.041	**0.276**
4.125	10	**3.732**	**149.9**	153.5	148.3	**114.9**	**3.767**	3.900	**3.014**
2.750	**Spain** 2	**-0.180**	**-136.5**	-138.1	-144.5	**-82.3**	**-0.192**	-0.177	**-0.017**
1.500	10	**1.695**	**-53.8**	-51.4	-62.8	**-27.5**	**1.718**	1.789	**1.590**
4.250	**Sweden** 2	**-0.677**	**-186.1**	-185.6	-181.7	**-122.0**	**-0.668**	-0.549	**-0.414**
1.000	10	**0.546**	**-168.7**	-166.9	-165.9	**-100.8**	**0.564**	0.758	**0.857**
1.750	**U.K.** 2	**0.099**	**-108.5**	-107.2	-112.1	**-29.5**	**0.117**	0.147	**0.511**
4.250	10	**1.036**	**-119.8**	-116.1	-116.1	**-27.1**	**1.072**	1.257	**1.593**
1.250	**U.S.** 2	**1.184**	...	...	...	...	**1.189**	1.268	**0.806**
2.250	10	**2.233**	...	...	...	...	**2.232**	2.418	**1.865**

Commodities

Prices of futures contracts with the most open interest — 4 p.m. New York time

EXCHANGE LEGEND: CBOT: Chicago Board of Trade; **CME:** Chicago Mercantile Exchange; **ICE-US:** ICE Futures U.S.; **MDEX:** Bursa Malaysia Derivatives Berhad; **TCE:** Tokyo Commodity Exchange; **COMEX:** Commodity Exchange; **LME:** London Metal Exchange; **NYMEX:** New York Mercantile Exchange; **ICE-EU:** ICE Futures Europe. *Data as of 4/20/2017

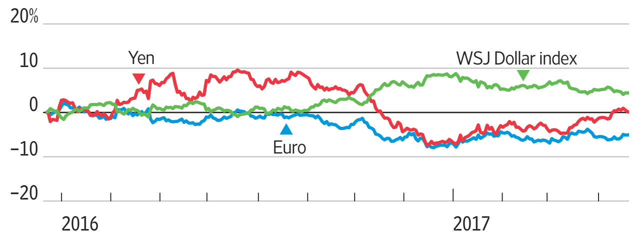
Commodity	Exchange	Last price	One-Day Change: Net	Percentage	Year high	Year low
Corn (cents/bu.)	CBOT	363.00	-1.25	-0.34%	393.75	360.75
Soybeans (cents/bu.)	CBOT	960.75	4.00	0.42%	1,092.50	941.25
Wheat (cents/bu.)	CBOT	421.00	-0.75	-0.18	488.75	416.25
Live cattle (cents/lb.)	CME	116.750	0.275	0.24	117.575	103.150
Cocoa ($/ton)	ICE-US	1,848	49	2.72	2,270	1,756
Coffee (cents/lb.)	ICE-US	133.10	-1.20	-0.89	161.55	131.55
Sugar (cents/lb.)	ICE-US	16.47	0.06	0.37	20.81	16.20
Cotton (cents/lb.)	ICE-US	79.34	0.23	0.29	80.27	71.86
Robusta coffee ($/ton)	ICE-EU	1992.00	-132.00	-6.21	2,283.00	1,977.00
Copper ($/lb.)	COMEX	2.5550	-0.0020	-0.08	2.8400	2.4905
Gold ($/troy oz.)	COMEX	1287.20	3.40	0.26	1,297.40	1,152.20
Silver ($/troy oz.)	COMEX	17.980	-0.118	-0.65	18.725	16.100
Aluminum ($/mt)*	LME	1,942.50	33.50	1.75	1,972.00	1,688.50
Tin ($/mt)*	LME	19,900.00	-25.00	-0.13	21,225.00	18,760.00
Copper ($/mt)*	LME	5,645.00	14.50	0.26	6,156.00	5,518.00
Lead ($/mt)*	LME	2,160.00	10.00	0.47	2,445.00	2,022.00
Zinc ($/mt)*	LME	2,622.00	56.50	2.20	2,958.50	2,555.00
Nickel ($/mt)*	LME	9,430.00	-60.00	-0.63	11,095.00	9,430.00
Rubber (Y.01/ton)	TCE	216.00	12.90	6.35	n.a.	n.a.
Palm oil (MYR/mt)	MDEX	2528.00	24.00	0.96	3,004.00	2,450.00
Crude oil ($/bbl.)	NYMEX	49.63	-1.08	-2.13	57.95	47.58
NY Harbor ULSD ($/gal.)	NYMEX	1.5598	-0.0259	-1.63	1.7833	1.4910
RBOB gasoline ($/gal.)	NYMEX	1.6428	-0.0285	-1.71	1.9012	1.5908
Natural gas ($/mmBtu)	NYMEX	3.194	-0.056	-1.72	3.5410	2.8170
Brent crude ($/bbl.)	ICE-EU	52.45	-1.01	-1.89	60.09	50.29
Gas oil ($/ton)	ICE-EU	468.25	-8.50	-1.78	525.00	446.25

Sources: SIX Financial Information; WSJ Market Data Group

Currencies

London close on April 21

Yen, euro vs. dollar; dollar vs. major U.S. trading partners



Country/currency	Fri in US$	Fri per US$	US$ vs, YTD chg (%)
Americas			
Argentina peso-a	0.0650	15.3847	**–3.1**
Brazil real	0.3176	3.1483	**–3.3**
Canada dollar	0.7401	1.3513	**0.5**
Chile peso	0.001533	652.20	**–2.6**
Colombia peso	0.0003482	2871.84	**–4.3**
Ecuador US dollar-f	1	1	**unch**
Mexico peso-a	0.0530	18.8510	**–9.1**
Peru sol	0.3084	3.2430	**–3.3**
Uruguay peso-e	0.0351	28.450	**–3.1**
Venezuela bolivar	0.099630	10.04	**0.4**
Asia-Pacific			
Australia dollar	0.7537	1.3268	**–4.4**
China yuan	0.1454	6.8795	**–0.9**
Hong Kong dollar	0.1286	7.7750	**0.3**
India rupee	0.0155	64.6667	**–4.8**
Indonesia rupiah	0.0000751	13322	**–1.5**
Japan yen	0.009175	109.00	**–6.8**
Kazakhstan tenge	0.003192	313.28	**–6.1**
Macau pataca	0.1244	8.0399	**1.6**
Malaysia ringgit-c	0.2273	4.3990	**–1.9**
New Zealand dollar	0.7016	1.4253	**–1.3**
Pakistan rupee	0.0095	104.850	**0.5**
Philippines peso	0.0201	49.849	**0.5**
Singapore dollar	0.7159	1.3968	**–3.5**
South Korea won	0.0008813	1134.72	**–6.1**
Sri Lanka rupee	0.0065600	152.44	**2.7**
Taiwan dollar	0.03294	30.357	**–6.5**
Thailand baht	0.02910	34.360	**–4.0**
Europe			
Bulgaria lev	0.5467	1.8291	**–1.6**
Croatia kuna	0.1436	6.965	**–2.9**
Euro zone euro	1.0693	0.9352	**–1.6**
Czech Rep. koruna-b	0.0397	25.193	**–1.9**
Denmark krone	0.1438	6.9556	**–1.6**
Hungary forint	0.003417	292.66	**–0.6**
Iceland krona	0.009124	109.60	**–3.0**
Norway krone	0.1152	8.6815	**0.4**
Poland zloty	0.2507	3.9894	**–4.7**
Russia ruble-d	0.01768	56.553	**–7.7**
Sweden krona	0.1109	9.0196	**–1.0**
Switzerland franc	1.0014	0.9986	**–2.0**
Turkey lira	0.2738	3.6517	**3.6**
Ukraine hryvnia	0.0374	26.7050	**–1.4**
U.K. pound	1.2792	0.7817	**–3.5**
Middle East/Africa			
Bahrain dinar	2.6520	0.3771	**–0.02**
Egypt pound-a	0.0553	18.0995	**–0.2**
Israel shekel	0.2723	3.6727	**–4.6**
Kuwait dinar	3.2829	0.3046	**–0.3**
Oman sul rial	2.5981	0.3849	**–0.02**
Qatar rial	0.2746	3.641	**0.03**
Saudi Arabia riyal	0.2666	3.7504	**–0.01**
South Africa rand	0.0760	13.1640	**–3.9**

	Close	Net Chg	% Chg	YTD % Chg
WSJ Dollar Index	89.84	0.04	0.05	**–3.33**

Sources: Tullett Prebon, WSJ Market Data Group

Cross rates

London close on Apr 21

	USD	GBP	CHF	JPY	HKD	EUR	CDN	AUD
Australia	1.3268	1.6972	1.3287	0.0122	0.1706	1.4186	0.9819	...
Canada	1.3513	1.7284	1.3532	0.0124	0.1738	1.4445	...	1.0183
Euro	0.9352	1.1965	0.9366	0.0086	0.1203	...	0.6921	0.7049
Hong Kong	7.7750	9.9457	7.7859	0.0713	...	8.3134	5.7543	5.8600
Japan	108.9950	139.4300	109.1500	...	14.0190	116.5300	80.6700	82.1500
Switzerland	0.9986	1.2774	...	0.0092	0.1284	1.0677	0.7390	0.7526
U.K.	0.7817	...	0.7828	0.0072	0.1005	0.8359	0.5785	0.5892
U.S.	...	1.2792	1.0014	0.0092	0.1286	1.0693	0.7401	0.7537

Source: Tullett Prebon

Key Rates

	Latest	52 wks ago
Libor		
One month	**0.99056%**	0.43645%
Three month	**1.15622**	0.63585
Six month	**1.40211**	0.90865
One year	**1.74456**	1.23635
Euro Libor		
One month	**-0.40000%**	-0.34829%
Three month	**-0.36214**	-0.26771
Six month	**-0.25943**	-0.15629
One year	**-0.14471**	-0.03000
Euribor		
One month	**-0.37100%**	-0.34200%
Three month	**-0.33100**	-0.24900
Six month	**-0.24900**	-0.14300
One year	**-0.12400**	-0.01100
Yen Libor		
One month	**-0.01157%**	-0.06271%
Three month	**0.01193**	-0.03886
Six month	**0.03357**	-0.02086
One year	**0.13643**	0.07186
	Offer	Bid
Eurodollars		
One month	**1.1000%**	1.0000%
Three month	**1.2000**	1.1000
Six month	**1.3500**	1.2500
One year	**1.6000**	1.5000
	Latest	52 wks ago
Prime rates		
U.S.	**4.00%**	3.50%
Canada	**2.70**	2.70
Japan	**1.475**	1.475
Hong Kong	**5.00**	5.00
Policy rates		
ECB	**0.00%**	0.00%
Britain	**0.25**	0.50
Switzerland	**0.50**	0.50
Australia	**1.50**	2.00
U.S. discount	**1.50**	1.00
Fed-funds target	**0.75-1.00**	0.25-0.50
Call money	**2.75**	2.25
Overnight repurchase rates		
U.S.	**0.91%**	0.47%
Euro zone	**n.a.**	n.a.

Sources: WSJ Market Data Group, SIX Financial Information, Tullett

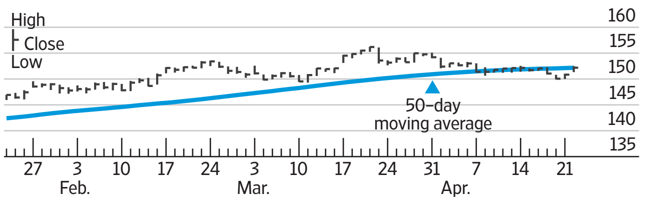
Top Stock Listings

4 p.m. New York time

Cur	Stock	Sym	Last	% Chg	YTD% Chg
Asia Titans					
HK$	AIAGroup	1299	49.75	0.40	13.71
¥	AstellasPharma	4503	1524.00	2.18	-6.13
AU$	AustNZBk	ANZ	31.81	0.86	4.57
AU$	BHP	BHP	24.04	1.65	-4.07
HK$	BankofChina	3988	3.68	0.82	6.98
HK$	CKHutchison	0001	93.15	-0.80	5.97
HK$	CNOOC	0883	9.05	-0.44	-6.70
AU$	CSL	CSL	128.42	0.38	27.90
¥	Canon	7751	3481.00	-0.06	5.64
¥	CentralJapanRwy	9022	18270	1.05	-4.99
HK$	ChinaConstructnBk	0939	6.18	0.32	3.52
HK$	ChinaLifeInsurance	2628	22.70	-0.66	12.38
HK$	ChinaMobile	0941	83.85	-0.36	2.01
HK$	ChinaPetro&Chem	0386	6.27	0.64	14.00
AU$	CmwlthBkAust	CBA	85.64	0.60	3.92
¥	EastJapanRailway	9020	9693.00	1.56	-4.03
¥	Fanuc	6954	22385	0.88	12.97
¥	Hitachi	6501	587.40	1.42	-7.06
TW$	Hon Hai Precisn	2317	96.50	0.52	14.61
¥	HondaMotor	7267	3115.00	1.23	-8.78
KRW	HyundaiMtr	005380	141500	...	-3.08
HK$	Ind&Comml	1398	4.96	0.20	6.67
¥	JapanTobacco	2914	3702.00	1.62	-3.69
¥	KDDI	9433	2887.00	0.91	-2.45
¥	Mitsubishi	8058	2299.00	0.72	-7.67
¥	MitsubishiElectric	6503	1498.50	1.01	-8.04
¥	MitsubishiUFJFin	8306	678.40	1.77	-5.80
¥	Mitsui	8031	1521.50	2.08	-5.32
¥	Mizuho Fin	8411	196.00	1.03	-6.58
¥	NTTDoCoMo	9437	2605.00	0.70	-2.18
AU$	NatAustBnk	NAB	33.07	0.98	7.83
¥	NipponTeleg	9432	4801.00	0.67	-2.26
¥	NissanMotor	7201	1036.00	0.39	-11.87
¥	Panasonic	6752	1265.50	1.44	6.39
HK$	PingAnInsofChina	2318	42.00	-0.12	8.25
$	RelianceIndsGDR	RIGD	43.25	2.13	37.08
KRW	SamsungElectronics	005930	2038000	1.19	13.10
¥	Seven&I Hldgs	3382	4538.00	-0.22	1.91
¥	SoftBankGroup	9984	8090.00	1.25	4.19
¥	Sony	6758	3592.00	0.59	9.68
¥	Sumitomo Mitsui	8316	4000.00	1.65	-10.31
HK$	SunHngKaiPrp	0016	116.50	-0.68	18.88
TW$	TaiwanSemiMfg	2330	190.00	1.60	4.68
¥	TakedaPharm	4502	5284.00	1.34	9.29
HK$	TencentHoldings	0700	236.40	-0.08	24.62
¥	TokioMarineHldg	8766	4613.00	1.56	-3.82
¥	ToyotaMtr	7203	5855.00	1.76	-14.87
AU$	Wesfarmers	WES	43.89	-1.17	4.15
AU$	WestpacBanking	WBC	34.35	0.53	5.37
AU$	Woolworths	WOW	26.51	0.88	10.00
Stoxx 50					
CHF	ABB	ABBN	23.17	1.94	7.87
€	ASMLHolding	ASML	121.60	0.66	14.02
€	AXA	CS	23.50	0.88	-2.04
€	AirLiquide	AI	105.75	-1.12	0.09
€	Allianz	ALV	170.25	0.80	8.44
€	AB InBev	ABI	101.55	0.25	0.99
£	AstraZeneca	AZN	4566.00	-0.62	2.90
€	BASF	BAS	88.77	0.31	0.52
€	BNP Paribas	BNP	62.00	2.23	2.39
£	BT Group	BT.A	310.95	-0.19	-15.25
€	BancoBilVizAr	BBVA	7.09	1.07	11.72
€	BancoSantander	SAN	5.67	0.18	14.34
£	Barclays	BARC	207.95	0.10	-6.94
€	Bayer	BAYN	105.20	0.77	6.12
£	BP	BP.	441.40	-1.18	-13.38
£	BritishAmTob	BATS	5200.00	-0.34	12.52
€	Daimler	DAI	66.17	-0.18	-6.43
€	DeutscheTelekom	DTE	15.93	0.09	-2.60
£	Diageo	DGE	2208.00	0.18	4.64
€	ENI	ENI	14.52	-1.09	-6.14
£	GlaxoSmithKline	GSK	1565.50	0.19	0.22
£	HSBC Hldgs	HSBA	624.00	0.26	-5.01
€	INGGroep	INGA	14.21	0.42	6.28
£	ImperialBrands	IMB	3745.00	-0.21	5.72
€	IntesaSanpaolo	ISP	2.51	0.96	3.63
€	LVMHMoetHennessy	MC	206.90	-0.24	14.06
£	LloydsBankingGroup	LLOY	64.37	0.48	2.98
€	LOreal	OR	180.80	-0.52	4.27
£	NationalGrid	NG.	1002.00	1.18	5.30
CHF	Nestle	NESN	75.70	0.13	3.63
CHF	Novartis	NOVN	73.30	0.07	-1.08
DKK	NovoNordiskB	NOVO-B	249.70	-1.07	-1.96
£	Prudential	PRU	1640.50	-0.33	0.80
£	ReckittBenckiser	RB.	7215.00	-0.82	4.78
£	RioTinto	RIO	3058.50	-0.31	-3.17
CHF	RocheHldgctf	ROG	251.70	-0.51	8.21
£	RoyDtchShell A	RDSA	1992.50	-0.42	-11.15
€	SAP	SAP	90.92	0.58	9.79
€	Sanofi	SAN	82.36	-1.15	7.10
€	SchneiderElectric	SU	70.60	0.83	6.79
€	Siemens	SIE	125.35	-0.52	7.32
CHF	Syngenta	SYNN	452.10	-0.77	12.32
€	Telefonica	TEF	10.16	-0.83	15.19
€	Total	FP	46.48	-1.25	-3.64
CHF	UBSGroup	UBSG	15.56	0.39	-2.45
€	Unilever	UNA	47.70	-0.16	21.95
£	Unilever	ULVR	3937.50	-0.32	19.59
€	Vinci	DG	73.33	-0.89	13.34
£	VodafoneGroup	VOD	198.75	-0.28	-0.55
CHF	ZurichInsurance	ZURN	264.60	0.23	-5.63
DJIA					
$	AmericanExpress	AXP	79.59	-0.54	7.44
$	Apple	AAPL	142.27	-0.12	22.84
$	Boeing	BA	180.38	0.60	15.87
$	Caterpillar	CAT	94.32	-0.36	1.70
$	Chevron	CVX	104.89	0.01	-10.88
$	CiscoSystems	CSCO	32.82	-0.03	8.60
$	Coca-Cola	KO	43.07	-0.05	3.88
$	Disney	DIS	114.44	-0.30	9.81
$	DuPont	DD	78.65	0.46	7.15
$	ExxonMobil	XOM	80.69	-0.40	-10.60
$	GeneralElec	GE	29.55	-2.38	-6.49
$	GoldmanSachs	GS	216.86	-0.55	-9.43
$	HomeDepot	HD	150.00	0.86	11.87
$	Intel	INTC	36.32	0.39	0.14
$	IBM	IBM	160.38	-1.18	-3.38
$	JPMorganChase	JPM	84.52	-1.20	-2.05
$	J&J	JNJ	121.76	-0.09	5.69
$	McDonalds	MCD	133.41	0.11	9.60
$	Merck	MRK	61.89	-1.06	5.13
$	Microsoft	MSFT	66.40	1.37	6.86
$	Nike	NKE	55.85	-0.98	9.88
$	Pfizer	PFE	33.64	-0.30	3.57
$	Procter&Gamble	PG	88.62	-0.79	5.40
$	3M	MMM	191.50	0.18	7.24
$	Travelers	TRV	119.10	0.19	-2.71
$	UnitedTech	UTX	114.99	0.92	4.90
$	UnitedHealth	UNH	171.16	-0.22	6.95
$	Visa	V	91.15	...	16.83
$	Verizon	VZ	47.25	-2.40	-11.48
$	Wal-Mart	WMT	74.94	0.19	8.42

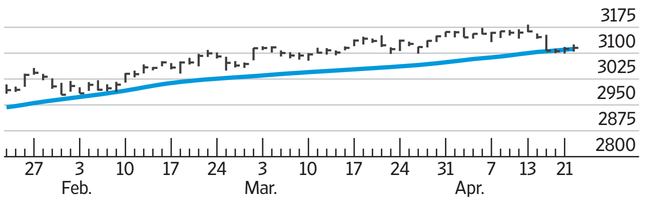
Asia Titans 50

Last: **152.18** ▲ 1.34, or 0.89% — YTD ▲ 7.9%



Stoxx 50

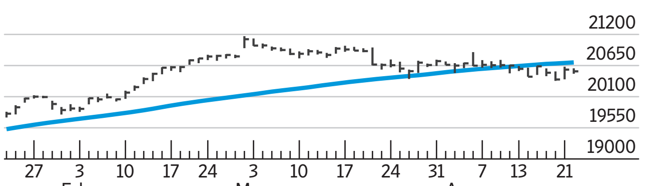
Last: **3115.47** ▲ 3.14, or 0.10% — YTD ▲ 3.5%



Dow Jones Industrial Average

P/E: 21

Last: **20547.76** ▼ 30.95, or 0.15% — YTD ▲ 4.0%



Note: Price-to-earnings ratios are for trailing 12 months
Sources: WSJ Market Data Group; Birinyi Associates

Rise of Indexing Lifts S&P

Rating firm criticized during financial crisis now rides high, helped by passive investing

By Ben Eisen
And Alexander Osipovich

Once vilified for its role in the financial crisis, **S&P Global** Inc. is emerging as one of the biggest beneficiaries of the rise of passive investing.

The New York-based financial-information giant collects a tiny fee from every investor that buys an exchange-traded fund tied to one of its market indexes. Total assets in those products topped $1 trillion in December, the firm said, double from just three years earlier. S&P is now roughly twice as large an indexer as its next biggest rival, MSCI Inc., according to data from ETFGI, a London-based research and consultancy firm on ETF trends.

Just seven years ago, S&P was in the hot seat. Former executives were grilled on Capitol Hill over why the firm gave top-notch AAA ratings to toxic mortgage-backed securities. Congress passed the Dodd-Frank Act, partly in a bid to dislodge the big debt-rating firms from their position at the heart of the U.S. financial system.

Those efforts failed. S&P still doles out nearly half of the debt ratings issued in the U.S., according to the latest Securities and Exchange Commission data. A boom in corporate-debt issuance has helped power S&P Global's stock up 27% over the past year, to $131.52 on Friday, including a 22% rise so far in 2017 that has topped the benchmark S&P 500 index that bears the company's name. In October 2008, the stock traded as low as $17.15.

Critics fault regulators for failing to do more to shake up the clubby ratings industry, where the Big Three firms of S&P, Moody's Corp. and Fitch Ratings Inc. are paid by the companies whose debt they rate. Rating fees have helped underpin S&P's expansion in recent years.

"For the SEC to have let it sit there for all these years is beyond disgraceful," said Alan Blinder, who was vice chairman of the Federal Reserve in the 1990s.

S&P Global says that the "issuer pays" model allows them to make ratings available for public scrutiny free of charge, and that conflicts are addressed by separating analysis from business activities. An SEC report from December cites improved processes for firms' oversight of credit ratings, such as increased documentation.

The company has also restructured and rebranded itself, spinning off its education unit in 2012 and shedding its old name, McGraw Hill Financial Inc., in April 2016.

Ratings, along with commodities, data and analytics, account for the lion's share of S&P Global's revenue. But indexing has grown the fastest since 2012. The unit, known as S&P Dow Jones Indices, and owned in part by CME Group Inc., boasted adjusted operating margins of 65% last year. The firm is scheduled to report earnings for the first three months of the year on April 25.

Indexes have been around since 1896, when the Dow Jones Industrial Average, now an S&P-owned index, was introduced. But S&P Global wasn't predestined to be an index giant.

In 2011, when Jana Partners LLC and the Ontario Teachers' Pension Plan called for changes at the company, then named McGraw-Hill Cos., the activist investors proposed turning the index unit into a stand-alone company. S&P held on to the business.

Dow Jones & Co., a unit of Wall Street Journal parent company News Corp, completed a sale of its stake in S&P's index business in 2013. Two representatives of the Journal still help determine the composition of the Dow industrials, one of S&P's indexes.

Indexes have gained a higher profile in the past few years as ETFs have surged in popularity. The world's largest ETF, the S&P 500 tracking SPDR fund, now has more than $230 billion in assets. S&P Dow Jones Indices collects a licensing fee that averages out to 0.0303% of the assets that an investor holds in the fund each year, which is around a third of the fund's net expenses, according to its prospectus.

S&P Dow Jones Indices collects licensing fees from exchanges such as CME and CBOE Holdings Inc. that offer futures and options based on S&P indexes. It also makes money by calculating the value of indexes and developing custom benchmarks.

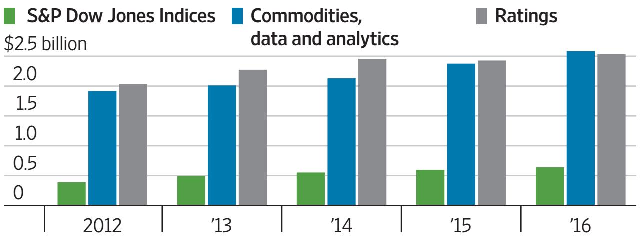
Competition is heating up as upstart index providers offer cheaper alternatives for ETF issuers that don't need a highly recognizable brand like S&P's. **Solactive** AG, for example, has a flat rate for its indexes, typically seeking to charge smaller fees than its larger competitors.

"Globally you have, let's say 20 big, massive, branded indices that are really hard to replace," such as the S&P 500, said Steffen Scheuble, chief executive at Solactive. "We don't go after them. Nevertheless, everything beyond that, of course we are trying to get that business."

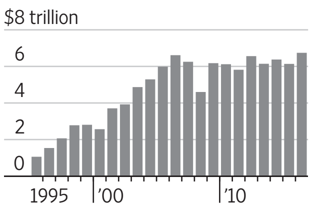
Giving Credit

S&P Global's ratings business, buoyed by recent strong debt issuance, has helped underpin its stock. But its indexing business has been growing rapidly as money flows into ETFs tracking its indexes.

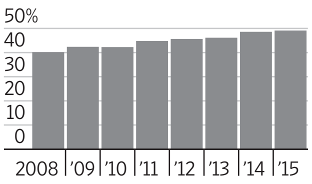
Revenue by unit



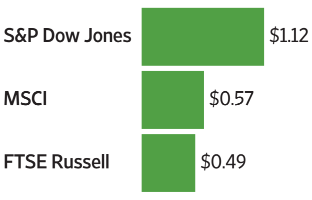
Global debt issuance



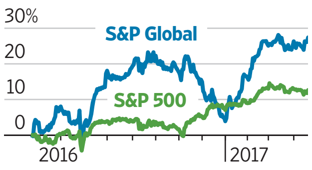
Percentage of total debt ratings issued by S&P Global



ETF assets, by index provider, trillions*



Cumulative return since April 21, 2016



*As of March 2017 Sources: S&P Global (revenue); Dealogic (global issuance); Securities and Exchange Commission (ratings); ETFGI (assets); FactSet (stock, index)

THE WALL STREET JOURNAL.

Beijing's Tough Talk Hits Stock Market

SHANGHAI—China's renewed efforts to cleanse its stock markets of a reputation for casino-like speculation are stoking a selloff.

The Shanghai Composite Index just recorded its biggest weekly drop in four months, down 2.2%. It has fallen two consecutive weeks and is off 3.5% from a 52-week high hit on April 11. On Friday, the index rose less than 0.1%, to close at 3173.15, while the Shenzhen Composite Index fell to near a three-month low.

The market slide intensified last week after officials had slammed what they called short-term speculators. Liu Shiyu, the head of China's securities regulatory agency, urged stock exchanges to "display their swords" and fight "without mercy" behavior that threatens market stability. Recently, the regulator said it would punish investors involved in "malicious manipulation," particularly of newly listed shares.

The stock decline has also come during a fight against corruption in China's financial system, which in the past year has led to the removal of high-level regulators and toppled some the country's most prominent investors.

"It's clear that the regulator is willing to sacrifice the market's upward momentum in the short term in exchange for systematic reforms," said Shen Meng, director of Shanghai-based investment firm **Chanson** & Co. "It's hard to educate the child if you are too lenient."

After a tumultuous 2015 and early 2016, when Chinese stocks first soared and then plunged, the country's markets have for several months been unusually calm. Despite last week's drop, Chinese shares haven't fallen by 1% or more on any day this year.

With the Communist Party set for a major leadership turnover later this year, stability has become the watchword for Beijing policy makers and regulators. China's central bank has been increasing interest rates, in part to rein in sharp rises in other domestic markets such as bonds and commodities.

Some say a crackdown on market irregularities will increase the appeal of domestically listed Chinese stocks, known as A-shares, to foreign investors. Index provider **MSCI** Inc. is considering admitting Chinese shares to products such as its Emerging Markets Index.

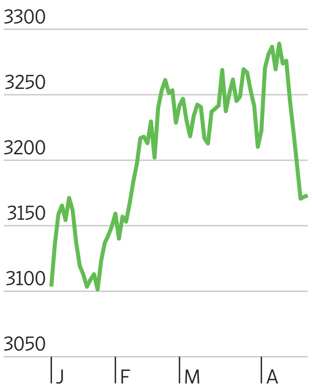
Yet Beijing's rhetoric risks contributing to the kind of market turbulence it is trying to avoid. Last Monday, more than 100 listed Chinese stocks plunged by the 10% daily maximum allowed, the highest one-day amount since December.

Some individual investors have ceased trading. Mark Lu, an investor in Shanghai with 2 million yuan (about $290,000) in his account, says he hasn't traded for three months. He says recent regulatory scrutiny of companies that have announced stock splits is the latest example of the regulator's unpredictability. "It's much harder to pick winning stocks," Mr. Lu said. "You never know what new rules will come out next."

—*Yifan Xie*

Second Thoughts

Shanghai Composite Index



Source: WSJ Market Data Group

THE WALL STREET JOURNAL.

MARKETS

An ETF Stampede Shakes Up Miners

Turmoil from Sydney to Toronto shows a potential side effect of rise in index investing

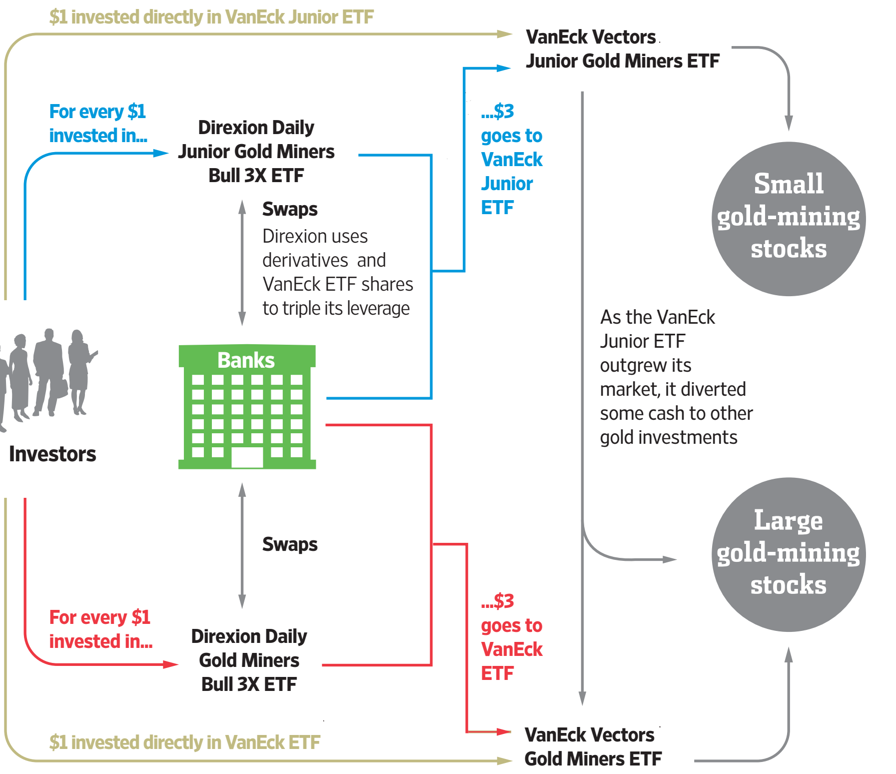
By Asjylyn Loder And Chris Dieterich

Gold-mining stocks swung although the metal's price was stable.

MICHAEL GOTTSCHALK/PHOTOTHEK/GETTY IMAGES

Gold Rush

How ETFs grew to dominate a slice of the gold market



Sources: VanEck; Direxion

THE WALL STREET JOURNAL.

Unruly trading in the shares of some small gold companies is rekindling investor concern about the pressure that fast-growing passive funds can exert on the stocks they are meant to track.

In the past six months, waves of money rushed into a $20 billion complex of interlinked exchange-traded funds that invest in gold-mining companies. The flows prompted the ETFs to amass ever-larger stakes in dozens of small firms. Efforts to check the funds' growth triggered price gyrations in gold stocks from Sydney to Toronto, at a time when the price of gold was largely flat.

The turmoil illustrates how the rise of index investing could rattle trading in the years ahead, especially as the $4.8 trillion ETF industry sprawls into smaller markets, investors said.

"ETFs can move stocks, and that is what's going to happen when investors flock into funds that hold small- and micro-caps," said Neil Leeson, research director at Spyglass Trading in Dallas.

In the past decade, ETFs have been blamed for unusual price swings in oil, utility stocks and high-yield debt. Just this month, a flood of cash into a new Canadian ETF jolted trading in the nascent marijuana industry, and in September, the Bank of Japan curbed its purchases of ETFs pegged to the Nikkei 225 index after its stimulus efforts distorted prices.

Encouraged by lower fees and subpar performance by active managers, investors have pulled $304.7 billion from active U.S. funds in the past 15 months as passive products gained $735.5 billion, according to Morningstar Inc.

Whether the shift to passive investing helps or hurts markets is a hot-button issue in the financial industry. Some studies suggest stocks included in popular indexes sport higher valuations and tend to move in lockstep with one another instead of responding to fundamentals. Others contend ETFs buffer markets in times of stress.

"There's definitely the possibility for some issues to arise, but in the vast majority of cases we're a long way off," said Ben Johnson, head of ETF research at Morningstar, pointing out that ETFs in larger markets don't come close to dominating trading the way the gold-mining ETFs did recently.

The most recent example of an ETF knocking prices out of whack centers on the VanEck Vectors Junior Gold Miners ETF, which invests in small gold companies. The ETF has taken in $1.4 billion since September, forcing VanEck to snap up mining shares.

Juicing its growth was the Direxion Daily Junior Gold Miners Index Bull 3X ETF, which uses the VanEck ETF to give investors a triple-leveraged bet. For each $1 dollar Direxion took in, it funneled $3 into the VanEck fund.

VanEck plowed that cash back into gold stocks, becoming the largest investor in two-thirds of the 54 companies the ETF owns shares in, according to FactSet. In some cases, VanEck owned 16% or more of the available shares of those companies, bringing it into the range of a Canadian securities law that requires firms that exceed a 20% stake to offer a buyout to the remaining shareholders.

"We continuously monitor the portfolio," said Ed Lopez, head of ETF product management for VanEck. "Our primary concern is that we're meeting our investment objective."

With more money coming in than it could invest in its roster of gold miners, the VanEck junior ETF directed some of the overflow into the VanEck Vectors Gold Miners ETF, which invests in larger firms. That ETF swelled to $12.5 billion amid the combined inflows from its smaller sibling and the Direxion Daily Gold Miners Index Bull 3X ETF, another leveraged copycat.

As the ETFs overran the market, more traders piled in. On April 12, Direxion received orders for $113 million in new shares of its leveraged junior ETF, the largest inflow in its history. The next day, Direxion closed the fund to new investors "until further notice." The ETF's share price rose higher than the value of its assets, reflecting the imbalance of demand over suddenly finite supply.

"We wanted to be sure we weren't exacerbating the issue of the products growing too fast," said Sylvia Jablonski, managing director of capital markets for Direxion.

VanEck simultaneously came out with its own fix. On April 13, its indexing arm announced that it will expand its lineup to larger companies. The change will force the junior ETF to buy some stocks and pare down others.

But those trades won't happen for months because passive funds are obliged to follow the investment strategy outlined in their prospectus. Shareholders must wait for the next scheduled rebalancing in June.

With the ETFs paralyzed, traders began bidding up the stocks being added to the index and selling those that the ETF must later shed. Gold prices barely budged the day VanEck announced the change, but stock prices of gold-related companies diverged. For example, Canadian mining company **Novagold Resources** Inc. dropped 4.7% while **Northern Star Resources** Ltd., an Australian rival, shot up 6.8%, according to FactSet. The junior ETF, stuck holding the falling stocks, dropped 3.5%.

Benjamin Chiu, a quantitative equity trader at BMO Capital Markets, estimates that approximately half of the VanEck Junior Gold Miners ETF will need to be liquidated when the index makes its changes.

Jonathan Tiemann, president of Tiemann Investment Advisors LLC, bought shares of the ETF for clients last year, a bet that will pay off if economic uncertainty sends gold higher. While his view on gold hasn't changed, he is now considering selling those shares.

"It's at a point where the ETF is subject to distortions," said Mr. Tiemann. "It's volatile enough as it is without the risk of some other weirdness happening in the market."

HEARD ON THE STREET

Email: heard@wsj.com FINANCIAL ANALYSIS & COMMENTARY WSJ.com/Heard

U.S. Casts Gloom Over Car Firms

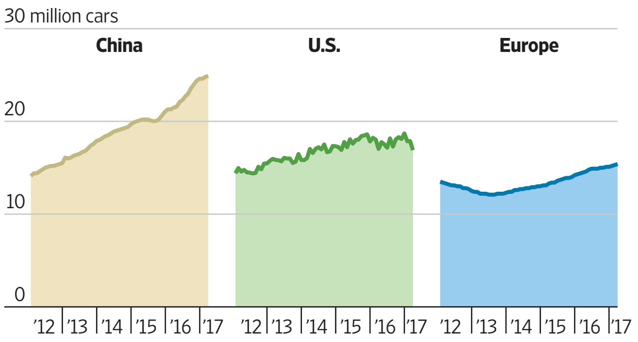
Auto makers have had much to cheer about lately, but investors don't seem to care. The U.S. market remains a cloud on everyone's horizon.

BMW released key elements of its first-quarter results Thursday, ahead of schedule, because they were much better than analyst forecasts—as is required by German stock-market rules. **Volkswagen** did the same Tuesday, following the lead of Mercedes-owner **Daimler** earlier this month. This would seem to bode well for the results of **Ford Motor** and **General Motors** in the coming week.

There were one-time reasons for the beats. Most interesting, all three German car makers are anchor shareholders in HERE, the digital mapping service they jointly bought from Nokia in 2015 as a cornerstone of autonomous driving. In the first quarter, they sold minority stakes to technology and investment partners, including both U.S. chip group Intel and Chinese tech giant Tencent. These new investors paid more for their stakes than the car makers initially did, prompting write-ups.

Out of Gas?

Annualized unit car sales



Note: U.S. data are seasonally adjusted
Source: FactSet

THE WALL STREET JOURNAL.

Yet the car market also remains robust—and particularly in Europe. Unit sales were up 8.2% there in the first quarter; even adjusted for extra working days, growth of 3.7% looks robust. The Chinese collapse many expected after tax breaks were scaled back at the end of 2016 hasn't yet materialized: Unit sales were up 5.1%, and 7.3% adjusted for selling days, according to Barclays.

The major weak spot has been the U.S., where first-quarter unit sales were down 1.5% and used-car values are sinking. This has justified fears that the election of Donald Trump hasn't, in fact, delayed the expected cyclical downturn in the car market.

The problem for the German car makers is that the U.S. carries disproportionate weight in investor sentiment. The old rule of thumb that Europe follows America's economic lead, only with a couple of years' lag, was validated during the last recession. Few investors are going to bet against it now.

The question of China is trickier, complicated by rising local competition on the one hand and the government's apparent determination to keep the sector buoyant on the other. Investors seem happy to focus on the U.S.

The result is that good news from Europe or China can be ignored as merely delaying an inevitable correction. BMW's shares barely moved when it announced its first-quarter beat. The exception to this rule is Volkswagen, where last week's numbers should help convince investors that its restructuring is finally bearing fruit.

Valuations across the sector are cheap, but it is hard to see what could prompt a breakout when growth is easily dismissed as the last spurts of an engine low on gas.

—Stephen Wilmot

OVERHEARD

What's in a name? Not much for one clinical-stage biotechnology company.

Cancer-drug specialist **XBiotech** announced results of a meeting with European regulators Friday surrounding the potential approval of its experimental colon-cancer treatment, Hutruo.

That name may have caught company observers off guard. XBiotech has long referred to the drug as "Xilonix." That name appears a dozen times in its annual report. Hutruo doesn't at all.

Regulators were unimpressed. The European Medicines Agency issued a negative "trend" vote, a likely precursor to a formal rejection. XBiotech shares plunged 40% Friday, though the company said it might appeal any rejection.

Regulators' concerns with Hutruo aren't semantic.

"The key outstanding issues are related to clinical relevance of the therapy in the indication and quality assurance related matters," said XBiotech.

Trump Steel Battle Looks Unwinnable

U.S. steel-sector shares like Nucor and **U.S. Steel** have surged following news that President Donald Trump could invoke a long-disused national-security law to push for higher import tariffs.

U.S. steelworkers have undeniably suffered over the past three decades. That doesn't mean a costly fight to bring back steel jobs is a good idea. Focusing on labor-intensive industries—such as oil and gas, where the U.S. already has a big cost advantage—would do more to boost growth.

American steel manufacturers are at a steep disadvantage to the world's heavyweight producer, China, in two crucial areas: finance and labor costs. Labor costs are rising in Chinese manufacturing, but as of 2015 they were still only around 15% to 20% of an average American steelworker's wage. Chinese steelmakers—many of them state-owned—also find it easier to ride out downturns because state-owned banks are reluctant to cut them off.

There is one area where America has a cost edge: energy. Cheap gas and coal, and a more efficient electricity-pricing system, means U.S. steelmakers pay around a third to a half less for energy than their Chinese counterparts. And cheaper energy has benefits for key U.S. industries like robotics and information technology.

If global steel prices rise in response to tariffs, that will just encourage more mothballed Chinese production to resume. Costlier steel at home would also damage industries where the U.S. has a competitive advantage—like autos, airplanes and specialty equipment.

—Nathaniel Taplin

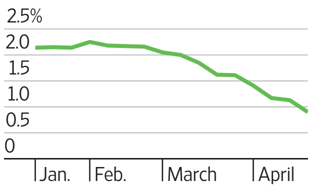
Confidence Game: American Data Fall Short of Huge Hopes

In the months since President Donald Trump was elected, consumer and business confidence have soared, but the economy has slowed. The split has rarely been so stark and while optimists have been hoping the economy will soon catch up with sentiment, it is looking more likely that sentiment will roll over.

Following a string of weak sales, spending and production data, economists have cut their expectations of economic growth for the first quarter. Forecasters polled by Macroeconomic Advisers now expect Friday's gross-domestic-product report will show the economy grew at a 0.9% annual rate in the first quarter. At the start of the year, they had estimated growth of 2.1%.

The Letdown

Economists' forecasts for the annualized change in first-quarter gross domestic product



Source: Macroeconomic Advisers

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Some of the apparent weakness in GDP is likely due to quirks in the data caused by factors such as unusual winter weather and a swing in business inventories. Still, the divergence between "hard data"—tangible measures such as car sales—and "soft data," such as confidence and other survey-based measures, is unusual. Research firm Cornerstone Macro calculates that the confidence data would normally imply GDP growth of about 5%.

The bullish case is that newly optimistic consumers and business owners will soon start spending, boosting economic growth. This is generally what happens when the economy is coming out of recession, with the hard data following the soft data higher.

But the economy isn't coming out of a recession—the last one ended nearly eight years ago. Instead, the country has experienced a long period of rising employment and disappointing but steady growth. The pent-up demand that exists in the aftermath of a downturn isn't there. And the mere possibility of lower taxes and faster growth hasn't changed the caution that consumers and businesses learned since the financial crisis.

The clock is ticking, says **Bank of the West** economist Scott Anderson. Historically, when the hard data don't pick up within a month or two of the move higher in the soft data, the soft data tend to tumble.

There are signs the souring in the soft data has begun. Last week, regional manufacturing surveys from the Federal Reserve Banks of Philadelphia and New York registered slowing activity. So did U.S. private-sector surveys conducted by Markit.

Barring proof that the White House and Republican-controlled Congress are about to deliver on tax cuts and stimulus, investors would be better off expecting the economy Mr. Trump inherited rather than the one he has promised.

—Justin Lahart