

# THE WALL STREET JOURNAL.

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As of 4 p.m. ET DJIA 20804.84 ▲ 0.69% NIKKEI 19590.76 ▲ 0.19% STOXX 600 391.51 ▲ 0.60% BRENT 53.61 ▲ 2.09% GOLD 1252.70 ▲ 0.08% EURO 1.1190 ▲ 0.78% DLR \$111.45 ▼ 0.03%

## What's News

### Business & Finance

**B**aïdu, once a scourge of Hollywood and the music industry, has shifted in the war over copyrights, reflecting the Chinese search giant's emergence as creator and buyer of content. A1

♦ Fed officials see difficulty in returning to the bank's precrisis role amid worries that rolling back stimulus risks disrupting markets. A1

♦ Saudi Arabia and the U.S. are expected to agree to deals and potential investments valued at \$300 billion during Trump's visit. A4

♦ Saudis agreed to commit \$20 billion to Blackstone's infrastructure fund. B7

♦ Arconic's board fight comes to a head this week with a vote that could signal how much power shareholders are willing to give activist investors. B1

♦ SoftBank and Saudi Arabia's sovereign-wealth fund launched a nearly \$100 billion vehicle to steer capital to U.S. start-ups and global firms. B1

♦ Uber threatened to fire Levandowski if he doesn't comply with a court order to turn over allegedly stolen files from Alphabet's self-driving car unit Waymo. B3

♦ LeEco's founder is stepping down as CEO of the Chinese firm's video unit after an investor called for stronger corporate governance. B3

♦ Americans' sense of their financial health improved modestly last year, a Fed survey showed. A5

### World-Wide

♦ Trump called on Muslim leaders to confront the "crisis of Islamic extremism," in a speech in Saudi Arabia aimed at corralling Arab allies around a new effort to fight terrorism. A1

♦ North Korea successfully launched its second ballistic missile in a little more than a week, drawing condemnation from Japan. A3

♦ Rouhani's re-election is likely to fuel the Iranian president's push for better ties with the West, but also mobilize conservative forces resisting rapprochement. A3

♦ NATO, under pressure from the White House, plans a spending initiative that will use additional money to fill armament gaps. A4

♦ Former FBI chief Comey's agreement to testify publicly in Congress may shape the Trump administration for months, or even years. A5

♦ Trump's budget proposal will include provisions to end many foreign military grants administered by the State Department. A5

♦ Duterte said China's Xi raised a threat of war if the Philippines drills for oil in the South China Sea. A3

♦ Brazil's Temer wants to ask the Supreme Court to suspend its probe into allegations he was involved in a corruption scheme. A3

♦ The 11 countries left in the Trans-Pacific Partnership backed a proposal to continue with the pact. A3

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## WORLD NEWS

THE OUTLOOK | David Harrison

# Much-Maligned U.S. Bridges Are Improving

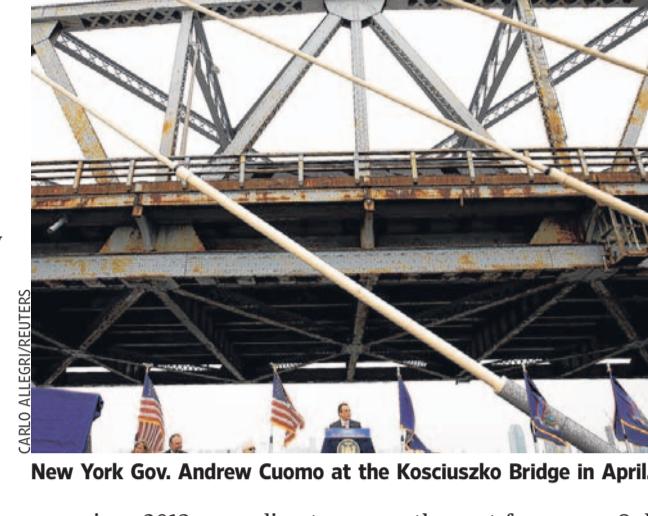
The Trump administration and congressional Democrats frequently bemoan America's aging infrastructure and have promised to spend money aggressively to fix it. Less noisily discussed: The nation is already making substantial progress in some key areas of decaying infrastructure.

American bridges have been getting sounder. In 2000, more than 15% of the country's bridges—roughly 89,460—were listed as being in poor condition, or "structurally deficient," under federal standards. By last year, that number had dropped to 56,000, or 9.1% of all bridges.

Moreover, the share of bridges built according to outdated design standards, known as "functionally obsolete," has declined from 15.5% in 2000 to 13.8% in 2015. Functionally obsolete bridges aren't necessarily unsafe, but they may have lanes that are too narrow or weight restrictions that prevent heavier trucks from crossing them.

The reason for the improvements: State and local transportation officials nationwide have been targeting aging bridges for upgrades and safety enhancements. A 2012 federal transportation law also required states to set up a plan for improving or preserving their infrastructure assets and penalized states that let bridges deteriorate too much.

Federal spending on bridges has stayed relatively flat at around \$6.8 billion a



New York Gov. Andrew Cuomo at the Kosciuszko Bridge in April.

year since 2013, according to a 2016 report from the Government Accountability Office. But state and local funding has more than doubled from about \$5.4 billion in 2006 to \$11.5 billion in 2012.

The steady decline in the number of troubled bridges is at odds with frequent references by officials to worsening bridges dotting the landscape, and the broader narrative of America in decline.

"Our bridges are unsafe," said President Donald Trump in February. That same month, Oregon Rep. Peter DeFazio, a Democrat, called for action in Congress, saying: "We need to fix the 140,000 bridges that are falling down."

The story of American infrastructure is in fact more complex than often portrayed. Interstate highway conditions have also steadily improved

over the past few years. Only about 2% of rural interstates and freeways and 6% of urban highways are in poor condition, according to Transportation Department data. That's an improvement from 1994, when 6.5% of rural interstates and 15% of urban interstates were in poor condition.

On the other hand, smaller roads, pocked with potholes, have seen their conditions worsen.

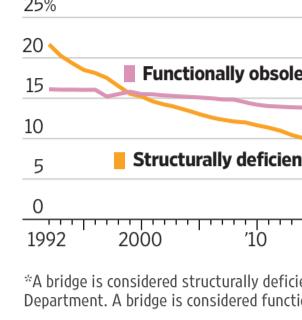
Missouri is a case study among states where the outlook is improving. It recently completed a \$685 million project repairing or replacing 802 bridges. The share of the state's bridges that were deficient dropped from 27.5% in 2000 to 13% in 2016. In Pennsylvania, where officials are replacing 558 bridges statewide through a public-private partnership, the share of deficient bridges fell from around 25% in 2000 to 20% last year.

Transportation experts

## Not Falling Down

The state of U.S. bridges has been improving for decades.

### Status of bridge conditions\*



\*A bridge is considered structurally deficient if it has reached a certain level of deterioration under standards set by the Transportation Department. A bridge is considered functionally obsolete if it was built under older design standards.

Source: Transportation Department

### Top states by percentage of structurally deficient bridges

Utah	3.1%
Arizona	2.6%
Florida	2.1%
Texas	1.7%
Nevada	1.6%

### Bottom states by percentage of structurally deficient bridges

West Virginia	17.3%
South Dakota	19.6%
Pennsylvania	19.8%
Iowa	20.5%
Rhode Island	24.9%

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than about 50 years. Today, four out of 10 bridges are at least 50 years old and more than half are over 40 years old.

That will force officials to struggle to keep up, and it could mean unpleasant trade-offs. In some cases, bridge improvements come at a cost of more potholes on other roads, officials say.

The Transportation Department estimates that as of 2012, the backlog for bridge rehabilitation stood at \$123.1 billion, roughly 10% more than its 2010 estimates.

"The work never really ends," said Bryan Kendro, a vice president at Star America Infrastructure Partners who helped design Pennsylvania's bridge replacement project while working as a top official in the state's transportation department. "Folks within the [state transportation departments] and the industry understand

we've been able to make some progress but that progress will be pretty short-lived if the funding doesn't come about."

In Pennsylvania, state officials estimate between 200 and 250 bridges become structurally deficient every year. Last year, the state repaired more than 500 bridges, thanks in part to its rapid replacement program.

That's made a difference in places like Meadville, a town of about 13,000 not far from Erie. Last year, the town cut the ribbon on a new bridge over French Creek that had been closed for nine years. Nearby businesses had suffered from a decline in traffic, said Patricia Mattocks, who helps manage four family-run garden-supply stores, including one that sits a few hundred feet from the bridge.

"We've got bridge work going on all over here," Ms. Mattocks said. "It's good to see them being fixed."

## Baidu

Continued from Page One  
self was the target of lawsuits by both the music industry and Hollywood film studios for using their content without permission.

"Baidu almost single-handedly eroded the value of music [in China]," said Neil Turkelwitz, former vice president of international at the Recording Industry Association of America.

For nearly a decade, Mr. Turkelwitz said, Baidu's search engine allowed users to find and play unlicensed songs directly from its web portal free.

The internet giant was sued in 2008 by major record labels Warner Music Group, Universal Music and Sony BMG Music Entertainment for violating music copyrights. At the time, the International Federation of Phonographic Industry estimated that re-

cord companies were receiving less than 5% of the estimated \$700 million in potential annual revenues from China's mobile music space.

Baidu in 2011 announced it had struck a licensing deal with all three, effectively ending the lawsuit. That year, Baidu recorded its first line item for content costs: \$9 million.

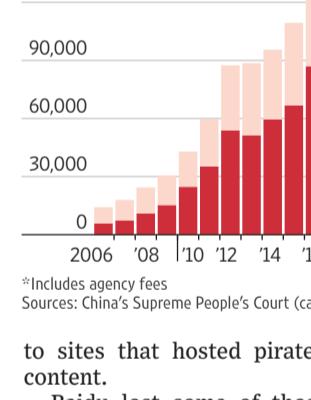
In 2013, Baidu was sued for violating video copyrights, this time by a group of Chinese entertainment companies supported by the Motion Picture Association and major Hollywood studios, which sought \$43 million in damages.

The group accused Baidu of running four services on desktop computers and smartphones that they said allow users access to Western and Chinese TV shows and movies licensed to other companies. The plaintiffs added that in some instances, Baidu linked

## China Gets Copyright Religion

China has seen an uptick in copyright cases in recent years, as Chinese firms defend the content and intellectual property they buy from others or creates on their own.

### Intellectual property cases received by Chinese courts



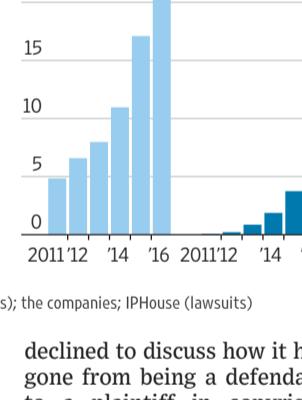
\*Includes agency fees  
Sources: China's Supreme People's Court (cases); the companies; IPhouse (lawsuits)

to sites that hosted pirated content.

Baidu lost some of those lawsuits, but ended up paying modest penalties.

A spokeswoman for Baidu

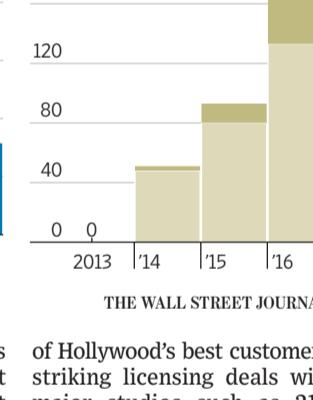
### Spending in content, in billions of yuan



declined to discuss how it has gone from being a defendant to a plaintiff in copyright cases.

Through its iQiyi streaming service, Baidu has become one

### Number of lawsuits by Baidu's streaming service iQiyi



tent last year, according to company statements.

21st Century Fox and Wall Street Journal-parent News Corp share common ownership.

For Hollywood studios, striking deals with Chinese partners is much easier than trying to defend their copyrighted content on their own, said Eric Priest, a University of Oregon School of Law professor who researches copyrights and the Chinese entertainment industry.

"If you're a content producer with an office in Hollywood, you aren't going to be familiar with where Chinese netizens are getting unlicensed content," Mr. Priest said.

"You won't be familiar with the shadowy set-top manufacturers who are installing apps that people buy that allow direct access to unlicensed content. You're going to be much better off with a partner in China that can do that."

## FED

Continued from Page One  
from all that?"

Investors are already assessing how stocks and bonds might react when the central bank begins the latest stage of its yearslong retreat from stimulus—likely later this year—by ending the practice of reinvesting the proceeds of maturing bonds into new bonds. The Fed is scheduled to publish Wednesday the minutes of its latest policy meeting, at which officials may have continued their debate over the mix of policy tools they plan to use in the future.

Some Fed officials say they are attracted to maintaining parts of their current approach. Minutes of their November meeting also showed officials discussing the advantages of keeping something similar to the existing system in place, in part because it is simpler to operate than the precrisis one.

The Fed hasn't decided the issue, but its choices will be closely watched because its leadership is in transition. President Donald Trump is preparing to fill three vacancies on the Fed's seven-member board. The White House hasn't named its choices, but they could set Fed policy in new directions, including by limiting its role in markets. Republican lawmakers have also revived legislation to subject its decisions to greater

public scrutiny, and some want monetary policy conducted by preset rules.

"It's not your father's Fed," said Adam Gilbert, partner at PricewaterhouseCoopers LLP and a former New York Fed official. Changes could herald "incoming policy makers who are by nature skeptical of a Fed that continues unorthodox approaches to both monetary and regulatory policy."

New York Fed President William Dudley told an audience this month the portfolio isn't likely to return to its pre-crisis size. Federal Reserve Bank of San Francisco President John Williams said this month the portfolio would be "significantly smaller" than it is today, but likely above \$2 trillion in assets.

Initially, the central bank said it would reduce the ca-

pacity of this so-called reverse repo facility "fairly soon after" it had begun raising short-term rates in 2015. Today, the Fed has no current plans to do so. Mr. Dudley suggested in April the Fed likely wouldn't phase out the facility.

Without the Fed repos, short-term rates could slip too low, and demand for Treasurys in the open market would surge, causing problems for money-market funds seeking alternative places to park cash overnight. Removing the program would "cause huge dislocations from a bond-market standpoint," said Debbie Cunningham, chief investment officer for global money markets at Federated Investors.

A balance sheet that is smaller than today's, yet still substantial, would enable the Fed to keep the reverse repos. It would also support the Fed's foreign repos for overseas accounts, where weekly balances have averaged \$250 billion, up from \$30 billion before the crisis, as well as the \$1.5 trillion in currency outstanding and changing cash-management policies at the Treasury Department.

If the Fed reduces its bond portfolio, the burden will be on private market participants to step in. In 2018, Morgan Stanley calculates investors may have to absorb \$400 billion in mortgage bonds alone, a level not seen since 2008. In the past, such transitions were smoothed by the banks authorized to trade opposite the Fed, called primary dealers.

Now those firms are grappling with new leverage rules, and some have less capacity.

Communicating a strategy for unwinding risks some unintended signals. In 2013, when the Fed surprised investors with talk of slowing bond purchases, financial markets convulsed, thinking the Fed meant earlier rate rises than were expected.

The Fed is wary of destabilizing the Treasury market, in particular, because of increasing lurches driven by algorithmic trading.

To avoid market disruptions, former Fed Chairman Ben Bernanke wrote in a recent blog post for the Brookings Institution, "There's no need to rush."

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# WORLD NEWS

## North Korea Fires Missile Into Japan Sea

Pyongyang's test launch was the 11th this year and drew Tokyo's condemnation

By JONATHAN CHENG

SEOUL—North Korea successfully launched its second ballistic missile in a little more than a week, increasing the pace of its testing as it seeks to develop the ability to strike the continental U.S. with a nuclear-tipped weapon.

North Korea fired the missile from the Pukchang airfield, about 40 miles north of the capital, Pyongyang, at about 4:30 p.m. Sunday local time, according to the U.S. Pacific Command and South Korea's Ministry of Defense. The missile flew about 310 miles, a spokesman for Seoul's Defense Ministry said, adding that authorities were analyzing the details of the test launch.

A spokesman for the U.S. Pacific Command said it tracked the missile until it splashed down in the waters between Korea and Japan.

A White House official said the U.S. was aware that North Korea had launched what it described as a medium-range ballistic missile. The official said Sunday's missile had a shorter range than the missiles fired in North Korea's three most recent launches.

In Tokyo, Japanese Prime Minister Shinzo Abe called the launch a "challenge to the



KYODO/REUTERS

Japanese Defense Minister Tomomi Inada spoke to reporters in Tokyo on Sunday after North Korea fired a medium-range missile.

world." Mr. Abe said he wanted to make North Korea a principal issue at the Group of Seven summit in Italy later this week. "I would like to send a clear message," he said.

The launch was the 11th missile Pyongyang has fired this year. North Korea last test-launched a missile from the Pukchang airfield late last month. In that case, the missile blew up minutes after launch in an apparent failed test. U.S. authorities said at

the time that the missile didn't leave North Korean territory.

In contrast, Sunday's successful test launch is further evidence of added momentum for North Korea's missile program, coming on the heels of the testing of an advanced missile a week earlier that took many North Korea missile watchers by surprise.

Taken together, the two launches underscore the rapid progress the country is mak-

ing as part of a drive to be able to threaten the continental U.S. In last week's test, North Korea launched a new intermediate-range ballistic missile that it claimed was capable of carrying a large nuclear warhead. It called the missile the Hwasong-12.

Independent analysts have said that, based on their calculations, the Hwasong-12 could reach the U.S. military base in Guam, more than 2,000 miles from Pyongyang.

Victor Cha, Korea chair at the Center for Strategic and International Studies in Washington, said after the Hwasong-12 test that the successful launch "demonstrates that we have once again underestimated North Korea's nuclear and missile capabilities."

In a new-year speech in January, North Korean leader Kim Jong Un said the country was completing preparations for a test launch of an intercontinental ballistic missile.

U.S. President Donald Trump answered a day later on Twitter, noting Pyongyang's attempts to develop a nuclear weapon capable of reaching parts of the U.S. "It won't happen!" Mr. Trump tweeted at the time.

Mr. Trump is in Saudi Arabia on the first stop of his first overseas trip as leader.

Just hours before Sunday's launch, North Korea had warned through its state media that it would follow up the Hwasong-12 launch with more missile tests. "Many more 'Juche weapons' capable of striking the U.S. will be launched from this land," North Korea's Minju Joson newspaper said in a commentary Sunday, according to Pyongyang's Korean Central News Agency. Juche, or self-reliance, is a reference to North Korea's state ideology.

The commentary also appeared to directly rebuke Mr. Trump's attempts to prevent the North from further developing its nuclear and missile capabilities.

"This is the DPRK's answer to the Trump administration," the Minju Joson commentary added, using the abbreviation for North Korea's formal name, the Democratic People's Republic of Korea. "The U.S. has no force to check the vigorous advance of Juche Korea."

—Peter Landers in Tokyo and Carol E. Lee in Riyadh, Saudi Arabia, contributed to this article.

## Re-elected Iran Moderate Faces Entrenched Interests

By ASA FITCH  
AND ARESU EQBALI

TEHRAN, Iran—A decisive re-election win for Iranian President Hassan Rouhani is likely to fuel his push for foreign investment and better relations

with the West, but it will also likely mobilize conservative forces that have resisted rapprochement and advocate domestic development.

Mr. Rouhani has called for more foreign investment and trade as part of his plans to ease unemployment and raise living standards. And he has pledged to continue efforts to get sanctions on Iran lifted, as some were under the 2015 deal with six world powers to curb Tehran's nuclear ambitions.

Yet going down that path could lead Mr. Rouhani, who captured 57% of the vote in Friday's election, into confrontation with some of Iran's most powerful interests, concentrated around Supreme Leader Ayatollah Ali Khamenei, who has the final say in most matters of state.

"The next four years will challenge Rouhani considerably," said Behnam Ben Taleblu, a senior Iran analyst at the Foundation for Defense of Democracies in Washington.

Despite Mr. Rouhani's sound

defeat of his main hard-line rival, Ebrahim Raisi, he is likely to face considerable resistance from conservative institutions such as the Islamic Revolutionary Guard Corps, or IRGC, an elite arm of the military charged with defending the country's Islamic revolution.

The revolutionary guards oversee the country's ballistic-missile program, which recently drew new U.S. sanctions. The IRGC also operates a business empire with interests ranging from infrastructure and energy to telecommunications and real estate.

For any Iranian president, the revolutionary guards are a power center to be reckoned with. For Mr. Rouhani, who has advocated a more open marketplace with plenty of foreign competition, a clash with the guards could be even more pronounced.

Speaking at a rally in the holy city of Mashhad two days before the election, Mr. Rouhani said the IRGC's businesses were welcome as long as they didn't elbow others out.

"We have no problem with you having news agencies, cultural entities, businesses and companies," he said. "Just leave some room for other people too."

For its part, the guards have taken swipes at Mr. Rouhani's signature accomplishment, the



Iran's President Hassan Rouhani captured 57% of Friday's vote.

it came time to rebuild the country after the Iran-Iraq war in the 1980s.

"The guards were not seeking such a role," he said, adding that it abided by the law in carrying out its activities. "They were assigned to it."

Some Iranian business owners complain that entities close to Mr. Khamenei, the supreme leader, still enjoy special treatment.

"Here some people escape from paying taxes and tariffs, but some others like us, we have to," said Davoud, who owns three clothing stores in Tehran and imports his goods from Turkey and China. "That's not fair."

The revolutionary guards' political and economic influence is deeply rooted. It has won billions of dollars' worth of government contracts without having to bid for them. Its deep coffers allow it to fund Iranian military interests abroad and lead the country's participation in the Syrian and Iraqi conflicts.

In the past, resistance to the guards' aims has led to tension between presidents and the clerical establishment. The IRGC clashed with Mohammad Khatami, the reformist who was president between 1997 and 2005, over what it saw as the president's weak response to student protests in 1999.

It isn't impossible for Mr.

Rouhani to work with the IRGC.

The IRGC could even benefit from Mr. Rouhani's push to win the removal of all sanctions that remain on Iran after the nuclear deal—including many that target the IRGC. But the IRGC's commanding position in the Iranian economy is unlikely to change quickly.

"Incremental progress is possible, but it requires the president to build consensus around his policies," said Ali Vaez, a senior Iran analyst at the Brussels-based International Crisis Group.

If Mr. Rouhani finds himself increasingly at odds with the IRGC, the climate for foreign investment could dim. Yet so far, the IRGC has managed to maintain its economic edge and even profit through ownership of large businesses benefiting from increased trade after the nuclear deal, Mr. Ben Taleblu said.

While it is unclear whether there will be a flood of post-election investment, a renewed influx would help Mr. Rouhani deliver on his argument that openness is good for Iran.

It also remains to be seen what role, if any, a newly staunch alliance between the U.S. and Saudi Arabia that aims to contain Iran's regional activities could play in steering foreign companies away during Mr. Rouhani's second term.

## WORLD WATCH

### PHILIPPINES

#### Duterte Reports Xi Threatened War

President Rodrigo Duterte said his Chinese counterpart had threatened him that Beijing would "go to war" if Manila begins drilling for oil in the South China Sea.

The alleged inflammatory comments—mentioned offhand by the firebrand president during a speech Friday—come as the two countries have sought to reset ties after years of contention over conflicting claims in the South China Sea.

Mr. Duterte said he had told Chinese President Xi Jinping that the South China Sea "is ours and we intend to drill oil there. If it's yours, well, that is your view but my view is I can drill the oil."

The Philippine leader said Mr. Xi had told him the two countries are friends. "We do not want to quarrel with you. We want to maintain a warm relationship but if you force the issue we will go to war," Mr. Xi reportedly said.

China's Foreign Ministry didn't respond to a request for comment. —Jake Maxwell Watts

### BRAZIL

#### President Intervenes In Corruption Probe

President Michel Temer said he would ask the Supreme Court to suspend its investigation into allegations he was involved in a giant corruption scheme, vowing to remain in power.

Speaking during a televised address Saturday, Brazil's deeply unpopular president alleged a recording that implicated him in the scandal was doctored and said he would file a petition with the Supreme Court to suspend the investigation until it could be verified.

"Our country will not go off the rails. I will continue at the front of the government," Mr. Temer said in his latest defiant speech about the allegations.

The Supreme Court declined to comment.

Mr. Temer's statement comes the day after it emerged that executives at Brazil's meatpacking giant JBS SA told prosecutors they had paid millions of dollars in bribes to the president and his predecessors, Dilma Rousseff and Luiz Inácio Lula da Silva.

In the recording cited by Mr.

Temer on Saturday, the president can be heard chatting with Joesley Batista, chairman and heir of the family-run JBS beef-and-chicken empire, apparently giving him his approval to pay a jailed congressman to buy his silence. A spokesman for Mr. Batista said the recording of Mr. Temer wasn't edited. Mr. Batista made the recording and gave it to prosecutors.

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In the recording cited by Mr.

Mr. Temer accused JBS executives of "damaging Brazil." He mentioned media reports that JBS profited from the scandal by buying dollars before the news broke. The Brazilian real plunged in value against the dollar on Thursday, the first day of trading after a report about the recording was published.

—Samantha Pearson and Luciana Magalhães

### PACIFIC TRADE

#### TPP Rump Proposes To Go On With Pact

The 11 countries left in the Trans-Pacific Partnership trade agreement backed a proposal to continue with the pact, despite U.S. President Donald Trump pulling out of it in January, New Zealand's trade minister said.

It isn't impossible for Mr.

Todd McClay, who chaired the meeting on the sidelines of an Asia-Pacific Economic Cooperation forum meeting in Hanoi, Vietnam, on Sunday suggested the path was open for the U.S. to rejoin if it changed its mind.

"It's clear that each country is having to consider both economic values and the strategic importance of this agreement, but in the end there is a lot of unity among all of the countries and a great desire to work together to come up with an agreement among 11 that...delivers for all of our economies [and is] open to others countries in the world to join if they can meet the high standards in the TPP agreement," the Associated Press quoted Mr. McClay as saying.

He and other trade ministers issued a statement saying they had resolved to "launch a process to assess options to bring the comprehensive, high-quality agreement into force." They said they would work on ways to allow the U.S. to rejoin the group.

Mr. McClay said high-level talks would resume when leaders of the Asia-Pacific Economic Cooperation forum again meet in November.

—James Hookway



Mr. Temer said he would ask the Supreme Court to suspend its probe into allegations against him.

BRAZILIAN PRESIDENCY/XINHUA/ZUMA PRESS

## WORLD NEWS

# NATO to Act on U.S. Call to Spend More

BY JULIAN E. BARNES

BRUSSELS—The North Atlantic Treaty Organization, under pressure from the administration of U.S. President Donald Trump, is planning a new spending initiative that will use additional money to fill armament gaps, according to a draft of the proposal reviewed by The Wall Street Journal.

Officials said they expect the program to be approved at a gathering of allied leaders here on Thursday that is to be attended by Mr. Trump—a move that would mark progress on an important foreign-policy goal for the president as he contends with political controversies in Washington.

Under the plan, NATO's members would be required to submit national blueprints detailing how they will meet alliance targets, which say each country should devote

2% of economic output to military spending.

In addition, they are to specify how money will be used to fill existing gaps in weaponry identified by the alliance, such as shortages of warships, air-defense systems and advanced tanks. The plans will also track commitments of troops to NATO missions.

During Mr. Trump's election campaign, he criticized allies for not paying their fair share for defense. His administration has made increasing European military spending a central part of its agenda. Earlier this year, Defense Secretary Jim Mattis called on allies to adopt spending plans or risk unspecified changes in the American defense commitment to Europe.

The new NATO plan includes compromises. Some U.S. officials have said they wanted to toughen up cur-

rent spending guidelines, which call for allies to hit the 2% target within a decade, and make them explicit requirements rather than goals.

But that isn't part of the new proposal, and European diplomats said the U.S. wasn't pushing for those changes in the run-up to Thursday's meeting.

Some European politicians have argued that the 2% goal is neither realistic nor wise. "Money is a contentious issue," said Bruno Léte, an expert on NATO at the German Marshall Fund in Brussels. "There is a trans-Atlantic gap," he said.

Only five countries now contribute 2% of gross domestic product to military spending: the U.S., U.K., Greece, Poland and Estonia. Romania, Latvia and Lithuania are due to hit 2% by next year. Other alliance members are below the target.

Alliance diplomats have



PETER MAROVICH/EUROPEAN PRESSPHOTO AGENCY

U.S. Defense Secretary Jim Mattis and his German counterpart Ursula von der Leyen at the Pentagon in Washington in February.

been trying to inject some muscle into NATO's defense-planning process, which establishes requirements for each country's contributions.

The current plans, due to be approved in June, have set some ambitious additional

requirements for some countries, notably Germany, which was prodded to strengthen its heavy tank brigades.

While German military spending is well below the 2% target, it is increasing it by 8% annually, contributing

billions of additional euros to its military each year.

NATO officials say one of the alliance's primary goals is eventually to reduce Europe's dependency on the U.S.—also a demand of the Trump administration.

"We rely on the U.S. at the moment to provide a large percentage of some key capabilities," said a NATO official. "As part of our planning into the future we're looking to reduce the dependency on the U.S. for some of those key capabilities."

At Thursday's NATO meeting, Mr. Trump will meet for the first time with newly elected French President Emmanuel Macron.

Mr. Macron has criticized Mr. Trump for his "aggressive" questioning, but acknowledged he is right to prod Europe to take more responsibility for its own defense.

—William Horobin in Paris contributed to this article.

## Saudis, U.S. Net Billions In Deals

BY MARGHERITA STANCATI

RIYADH, Saudi Arabia—Saudi Arabia and the U.S. are expected to agree to business deals and potential investments valued at \$300 billion during U.S. President Donald Trump's visit, solidifying the U.S.-Saudi commercial relationship as the kingdom's economy opens.

The deals, ranging from defense to health care, coincided with the arrival Saturday of Mr. Trump in the capital, Riyadh. Mr. Trump, a real-estate developer turned politician, has sought to make business deals and job creation a central feature of his presidency and U.S.-Saudi ties.

"Tremendous investments in the United States," said Mr. Trump, commenting on the business deals as he met with Saudi officials on Saturday. "Hundreds of billions of dollars of investments into the United States and jobs, jobs, jobs," he said.

On Saturday, General Electric Co. announced agreements in Saudi Arabia, including a partnership with the country's ministry of energy and a government program to develop industries for joint ventures, valued at an estimated \$12 billion in sectors such as power generation, aviation, digitization technologies, mining, oil and gas.

Saudi Arabia has a \$6 billion deal with Lockheed Martin Corp. to assemble 150 Black Hawk helicopters in the kingdom. Saudi Arabia is one of the world's biggest defense buyers and wants half of the money it allocates to military equipment to be spent locally by 2030.

The agreement was reached at a business forum in Riyadh, which released details of the new deals on behalf of the Saudi government.

Overall, during Mr. Trump's visit the U.S. and Saudi Arabia have signed new arms deals valued at \$109 billion and the two governments agreed to commit to a further \$350 billion over a decade.

Saudi Arabia wants to broaden its commercial partnership with the U.S. as it seeks to diversify its economy beyond oil. For that to succeed, the kingdom needs to attract private investment in new industries.

But Saturday's deals also underscore how much the kingdom remains dependent on the oil industry to attract outside investment.

On Saturday, U.S. energy companies announced potential deals with the Saudi Arabian Oil Company, known as Aramco, valued at around \$22 billion. Those include a \$3.6 billion agreement between the Saudi energy giant and Honeywell International Inc., and a separate \$2.8 billion deal with McDermott International Inc., both intended for unspecified goods and services.

—Bradley Olson in Houston and Carol E. Lee in Riyadh contributed to this article.



MANDEL NGAN/AGENCE FRANCE PRESSE/GETTY IMAGES

## TRUMP

Continued from Page One

Arab leaders agreed to take steps to target terrorism financing and the U.S. and Saudi Arabia opened a center in Riyadh focused on that effort. The U.S. also agreed to some \$400 billion in economic investments with Saudi Arabia including \$110 billion in new arms sales to Riyadh.

"This agreement will help the Saudi military to take a far greater role in security and operations having to do with security," Mr. Trump said. "Muslim-majority countries

must take the lead in combatting radicalization."

Saudi King Salman issued his own condemnation of terrorism as contrary to the teachings of Islam.

He also pledged that Muslim leaders will "not hesitate to prosecute anyone who supports or finances terrorism in any shape or form."

Both the U.S. and Saudi leaders delivered harsh rebukes of Iran. King Salman said the Iranian regime is among those who exploit Islam to achieve their political goals.

Mr. Trump said the Middle East could undergo "a new renaissance" if terrorism was

scrubbed out. The first test for Muslim-majority nations, he said, is "to deny all territory to the foot soldiers of evil," ensuring "terrorists find no sanctuary on their soil."

"This is a battle between barbaric criminals who seek to obliterate human life, and decent people all in the name of religion," Mr. Trump said.

His speech before Arab leaders marks a significant shift for Mr. Trump and caps two days in Saudi Arabia where he has attempted to reset relations with America's Arab allies.

His softer stance on Islam as a tolerant religion could play well among some in the

Gulf States, but risks alienating some of the president's supporters back home.

Roger Stone, a Republican operative who was closely involved with Mr. Trump's campaign, responded to a photograph of King Salman placing a medal around the president's neck by writing on Twitter:

"Candidly, this makes me want to puke."

As a candidate, Mr. Trump called for a ban on Muslims entering the U.S. and said "Islam hates us."

He also repeatedly criticized his predecessor, President Barack Obama, for refusing to use the phrase "radical Islamic terrorism."

While many Saudis have been delighted by Mr. Trump's visit, and he received a warm welcome from the royal family, the reaction from Arabs across the region has been more critical.

From Islamists to pro-democracy advocates, many have responded harshly to a U.S. president who has spoken of a ban on Muslims.

Others simply saw Mr. Trump's elaborate reception from the Saudi monarchy as another sign that the administration wouldn't push the region's autocrats toward democratic reform any time soon.

—Tamer El-Ghobashy in Erbil, Iraq, contributed to this article.

## Trip Tests President's Ambition for Mideast Peace

President Donald Trump faces a set of early challenges to his aspirations for a regional solution to the Israeli-Palestinian conflict as he undertakes his first trip abroad as commander in chief.

By Rory Jones  
in Tel Aviv and  
Carol E. Lee  
in Washington

Mr. Trump, encouraged by a thaw in relations between Israel and Gulf Arab states led by Saudi Arabia, plans to explore a solution that is based on cooperation between Israel and Arab countries.

The process is so sensitive that few senior Israeli, Palestinian and U.S. officials would discuss it ahead of Mr. Trump's departure. He was in Saudi Arabia before flying to Israel to meet with Prime Minister Benjamin Netanyahu and Palestinian leaders.

But Mr. Trump's efforts to advance his agenda for the Middle East have been overshadowed by a raft of revelations and missteps in Washington, where a furor erupted over his sharing of Israeli intelligence with Russian officials during a meeting last week. In that same meeting, the president discussed his decision to dismiss Federal Bureau of Investigation Director James Comey, a White House statement acknowledged.

edged on Friday.

The U.S. and Israel also appear at odds over the White House decision to hold off on any move of the U.S. embassy from Tel Aviv to Jerusalem.

Mr. Trump has recalibrated his position on the embassy move as part of his wider effort to advance a regional peace agreement—a decision that has frustrated Israeli officials.

Despite those frictions, Israeli officials have expressed a willingness to engage on a peace push. They have been exploring a regional initiative with

the Trump team since before the president's inauguration, according to an Israeli official.

"By getting a regional umbrella to this, you actually create a different dynamic regarding the peace process," said the official.

Both Israel and the oil-rich Sunni Gulf monarchies fear the region's leading Shi'ite power, Iran, and its proxies in Syria, Yemen, Lebanon and Iraq. Israel and the Gulf states want to combat the disruptive impact of Islamist extremists such as Islamic State and the

Palestinian group Hamas, which governs the Gaza Strip.

They have also deepened intelligence-sharing in recent years, according to U.S., Israeli and Arab officials.

Gulf states, including Saudi Arabia and the United Arab Emirates, have said they are considering establishing direct telecommunications links with Israel and allowing overflight rights to Israeli aircraft as part of the White House peace initiative.

In the eyes of many Israelis, normalization of relations

with Arab states holds out a bigger incentive to compromise with Palestinians than anything the Palestinians themselves can offer.

"The Israelis are skeptical about peace with the Palestinians and their ability to deliver," said Israeli politician Tzipi Livni, a former chief peace negotiator. "What the Palestinians cannot deliver, the Arabs can."

The president has appointed his longtime lawyer, Jason Greenblatt, as the point man for Arab-Israeli peace-making while Mr. Trump's son-in-law and senior White House adviser, Jared Kushner, is overseeing the effort.

Mr. Greenblatt avoids using the phrase "Palestinian state," White House officials said. Many right-wing lawmakers in the Israeli government now oppose Palestinian statehood. The White House also declines to set a deadline for a peace agreement or even for specific steps toward reaching one.

The regional approach to peace isn't new. A Saudi-led peace initiative in 2002 sought to establish relations between Israel and Arab countries under the umbrella of the peace process. It promised relations after a final peace deal with the Palestinians. But Israel rejected it, arguing the region was dictating peace rather than establishing relations in parallel to a process.



AMIR COHEN/REUTERS

A soldier performs at a Sunday dress rehearsal of the ceremony to welcome Mr. Trump to Israel.

# U.S. NEWS

## Trump Aides Prepare New Approach

Staff braces for changed environment after appointment of special counsel

WASHINGTON—Former FBI Director James Comey's agreement to testify publicly in Congress capped a week that may shape President Donald Trump's administration for months, or even years, and prompted White House aides to rethink how they operate in this new political and legal environment.

By Eli Stokols,  
Rebecca Ballhaus  
and Louise Radnofsky

Mr. Comey was leading an investigation into Russia's alleged interference in the 2016 presidential election and whether associates of Mr. Trump colluded with Moscow until he was fired by the president this month.

The former FBI director is expected to testify after Memorial Day, according to the leaders of the Senate Intelligence Committee, and will almost certainly face questions surrounding the circumstances of his dismissal, which has created a crisis for the White House in recent days. They are expected to be his first public remarks since his firing May 9.

On Wednesday, Robert Mueller, Mr. Comey's predecessor at the FBI, was tapped by the Justice Department's No. 2 official to take over the Russia investigation.

On Capitol Hill, Mr. Trump's fellow Republicans have expressed their concerns about the impact of recent events on

the nascent administration. "Controversy after controversy, cut after cut, is not good for any administration," said Sen. Richard Shelby (R., Ala.).

Sen. Lindsey Graham (R., S.C.) said the president is "probably glad to be leaving town," referring to Mr. Trump's nine-day overseas trip that began Friday afternoon. "And a lot of us are glad he is leaving for a few days."

To address the new political environment, some of the president's senior advisers have recently begun a study of the Democratic administration of former President Bill Clinton, examining how it managed to push through major bipartisan budgets and reform bills, despite being the subject of an independent counsel's probe for five of its eight years.

Mr. Trump's aides have also been pressing for more restraint by the president on Twitter, and some weeks ago they organized what one official called an "intervention." Aides have been concerned about the president's use of Twitter to push inflammatory claims, notably his unsubstantiated allegation from March that his Democratic predecessor, Barack Obama, had wiretapped his offices.

In that meeting, aides warned Mr. Trump that certain kinds of comments made on Twitter would "paint him into a corner," both in terms of political messaging and legally, one official said.

The damage to Mr. Trump's White House could be seen throughout the operation this week—in the front cabin of Air Force One on Wednesday, where senior aides sat before a televised newscast carrying on-



Former FBI Director James Comey, shown in early May, agreed last week to testify before a Senate panel after Memorial Day.

screen graphics with words and phrases such as 'obstruction of justice,' and inside the West Wing where fatigued aides said they were worrying about their own futures.

Mr. Trump has denied that his campaign colluded with Moscow. Officials in Russia have denied meddling in the 2016 election.

In recent weeks, the president has weighed making major changes to his communications office. A coterie of former campaign associates, including Jason Miller and Corey Lewandowski, were spotted around the West Wing or were in touch with the administration in recent weeks, unsettling an already anxious staff.

Still, Mr. Trump may not act on a staff revamp soon, according to people familiar with his thinking.

"The president goes through moods where sometimes he wants to blow everything up," said one person close to the White House. The person said the administration hasn't lined

up successors for the people Mr. Trump has considered firing and added: "I don't think there will be any wholesale changes" in the near future.

For White House aides and the president's allies, the setbacks are particularly cutting because many are self-inflicted. Rod Rosenstein, the deputy attorney general, told lawmakers Friday that he and Attorney General Jeff Sessions discussed Mr. Trump's desire to replace Mr. Comey last winter during the presidential transition period and agreed it was the correct course of action once Mr. Rosenstein was approved by the Senate, according to talking points released by the Justice Department on Friday.

In the ensuing months, Mr. Trump engaged Mr. Comey, later claiming the FBI director had told him he wasn't under investigation—which associates of Mr. Comey deny—and allegedly asking Mr. Comey to back off a probe of former national security adviser Mike Flynn. The White House has

denied that.

Mr. Flynn was forced to resign after he provided false information to Vice President Mike Pence and others about a conversation Mr. Flynn had with a Russian official in December.

Mr. Rosenstein received Senate approval for his new job in late April, and on May 8 he produced the three-page memo outlining his criticisms of Mr. Comey's performance, which he said on Friday he stands behind.

Mr. Trump fired the FBI director the next day, citing the memo. But over the next two days, the White House shifted its story until Mr. Trump in a television interview said he fired him because he was a "showboat." He acknowledged, though, that the Russia probe weighed in on his decision.

After Mr. Rosenstein announced Wednesday that he had appointed Mr. Mueller to oversee the Russia probe, Mr. Trump summoned to the Oval Office top aides including Hope

Hicks, chief strategist Steve Bannon, chief of staff Reince Priebus, adviser Jared Kushner, communications director Mike Dubke and press secretary Sean Spicer, according to officials.

There, his aides said the appointment of a special counsel could make the administration's job easier in some ways, allowing the president and his staff to avoid answering questions about the probe by pointing to the existence of an independent investigation.

Ken Duberstein, a former chief of staff to former President Ronald Reagan, said he used to urge the GOP president not to respond to questions that reporters might throw his way involving the Iran-Contra scandal that dogged the final years of his presidency.

"You can't go off on a tangent. You can't answer the sound bite gotcha questions," Mr. Duberstein said.

—Peter Nicholas,  
Byron Tau and Janet Hook  
contributed to this article.

## Budget Would Convert Many Grants

BY FELICIA SCHWARTZ

WASHINGTON—President Donald Trump's budget proposal this week will include provisions to end many foreign military grants administered by the State Department and replace them with loans, a move that could affect up to \$1 billion in aid to dozens of countries if Congress approves, U.S. officials said.

An internal State Department memo reviewed by The Wall Street Journal names Pakistan, Tunisia, Lebanon, Ukraine, Colombia, Philippines and Vietnam as among countries that could be affected.

Typically, the State Department's Office of Security Assistance receives about \$6 billion to dispense as military aid grants. That sum includes \$3.1 billion for Israel, about \$350 million for Jordan and about \$1.3 billion for Egypt. Those grants will be preserved in the 2018 budget, officials said.

Pakistan, which usually receives about \$265 million in grant assistance, will see that number go down to about \$100 million under the new budget, officials said.

Most other countries will see their assistance converted from grants to loans.

The grants have allowed countries to buy U.S. equipment such as ammunition, vehicles, protective equipment and naval vessels.

Mr. Trump's administration is set to release his full budget proposal on Tuesday. The administration is considering cuts of up to 31% to the State Department and the U.S. Agency for International Development, The Journal has reported.

Congressional officials, along with current and former U.S. officials, said a key concern is that eliminating the military-grant program would cause countries to look to U.S. rivals, such as Russia and China. The internal State Department memo outlines what officials see as the likely effects of cuts.

"Without such assistance, partners will likely either not develop/sustain those capabilities, or may turn to other countries (e.g., Russia, China) to as-

FAVEZ NUVELINE/AGENCE FRANCE PRESSE/GETTY IMAGES



Secretary of State Rex Tillerson is seen speaking in Riyadh, Saudi Arabia on Saturday.

sist them in developing them," the memo says.

The internal memo says most countries offered loans are unlikely to take them.

"Converting FMF grants to a loan support mechanism will not assist the vast majority of countries that receive this support, since they would not desire to take out, or would not qualify for an international loan," the memo says.

Officials with the White House's Office of Management and Budget didn't respond to questions about the cuts, and have deferred comment until the full budget is released. Officials from most potentially affected countries didn't address the comments.

Pakistan's Ambassador to the U.S., Aizaz Chaudhry, said: "Pakistan believes that our relations with the U.S. are a high priority. The two countries need to further strengthen mutually beneficial economic, trade and investment relationships."

Mr. Trump has spoken frequently about what he sees as the need for U.S. partners abroad to pay for more of their own defense needs and for Washington to focus on U.S. priorities. But a congressional aide said the shift from grants

to loans was unlikely to "play very well" among lawmakers.

"There's real concerns among authorizers over this," he said. "If you care about U.S. influence with these countries for counterterrorism and national security purposes, this will go a long way to kill it."

The memo cites Lebanon, which it said "may lack the ammunition and vehicles necessary to maintain operations against ISIS" without the U.S. grant program.

**Lawmakers worry the plan could strain some critical relationships.**

Cameroon, Chad and Niger, "may be unable to maintain their airlift, intelligence, surveillance and reconnaissance and protected mobility capabilities necessary to defeat Boko Haram," the memo says.

For Pakistan, its "maritime forces may have a reduced ability to patrol the maritime border," the memo says. "Pakistan's ability to continue participating in USNAVCENT-

led maritime coalitions will come into doubt, as the Pakistan Navy is in the process of decommissioning its British-class frigates and needs additional surface vessels."

The cuts could affect Ukraine's ability to deploy countermortar radars, an important issue in its struggle with pro-Russia separatists backed by Moscow, the memo says.

In Colombia, where the U.S. is supporting efforts to move beyond a 50-year civil war, the cuts could affect the country's ability to maintain its helicopter fleet, needed to fight organized crime in remote areas, the memo says.

Andrew Shapiro, a former Obama administration official who headed the State Department's bureau of Political Military Affairs, said the grant program benefits U.S. diplomats and U.S. companies.

"The program helped ambassadors, defense attachés and visiting officials develop relationships," he said. "This could also hurt U.S. companies who could sell these products. Countries will now look elsewhere because our stuff is more expensive than anyone else's. It's the best but you pay for the best."

## Americans' Cheer On Finances Grows

BY HARRIET TORRY

WASHINGTON—Americans' sense of their overall financial health improved modestly last year, but adults without any college education lost ground for the first time since 2013, according to a new Federal Reserve survey.

Some 70% of respondents polled in October said they were either "living comfortably" or "doing okay," up from 69% the year before, and 62% when the question was first posed in 2013, the Fed found in its latest Survey of Household Economics and Decision-making, released Friday.

Yet the share of respondents with no more than a high-school diploma who said they were "living comfortably" or "doing okay" declined last year to 60% from 61% in 2015.

"Many American households are struggling financially," Fed governor Lael Brainard said in a statement.

Education levels played a large role in determining respondents' self-reported financial well-being. The survey found 82% of adults with a bachelor's degree or more in education said last year they were "living comfortably" or "doing okay," up from 80% the year before, as well as 69% of those with some college or an associate degree, up from 66%.

Americans' sense of economic health also varied among racial and ethnic groups. Of the respondents with no more than a high-school diploma, 20.5% of non-Hispanic whites reported being worse off than a year before, more than non-Hispanic blacks, at 18.6%, or Hispanics, at 20.2%.

Overall, most of the changes reported in the survey were relatively modest, reflecting a slowly improving economy and an unemployment level at or below 5% throughout 2016.

Day-to-day finances are still precarious for many Americans. The survey found 44% of respondents said they wouldn't be able to cover an

unexpected \$400 expense like a car repair or medical bill, or would have to borrow money or sell something to meet it.

In another sign of the educational divide, 79% of those with at least a bachelor's degree said they would still be able to pay all of their other bills in full if hit with a \$400 charge. Just 52% of those with no more than a high-school diploma said the same.

"Everybody on the low end feels like they're in a different situation, almost like they're in a different America than those with a bachelor's or more," said Jonathan Morduch, a New York University professor of public policy and an economist. "The combination of instability and illiquidity are really hurting at the low end."

Still, the overall share of adults who would struggle to come up with \$400 in a pinch has declined by 6 percentage points since 2013, indicating Americans' financial situation is slowing getting better. While 25% of respondents reported skipping medical treatments due to cost in 2016, that was down 7 percentage points since 2013.

Out-of-pocket medical expenses are one of households' biggest financial headaches. Of those who reported a major unexpected medical expense over the past year, the median out-of-pocket cost was \$1,000. According to the report, some 24 million adults are in debt from medical expenses incurred over the previous year.

Many respondents also reported that they lack retirement savings, with 28% of adults who haven't retired yet indicating they had no retirement savings or pension whatsoever. That is down from 31% in 2015.

The survey, conducted in October, drew 6,643 respondents. It was started in 2013 as part of the Fed's effort to monitor America's recovery from the 2007-09 recession and identify risks to households' financial stability.

## IN DEPTH

# MOON

*Continued from Page One*  
back. So last December she sued the agency and won. Now, she's planning to resell it for at least \$2 million in Sotheby's first space-exploration sale in New York on July 20.

Sotheby's senior specialist Cassandra Hatton said she thinks the object could sell for millions more because NASA doesn't allow individuals to own any bits of the moon, apart from this court-ordered exception. "This is my Mona Lisa moment," Ms. Hatton said.

William Jeffs, a NASA spokesman, said the agency is "obviously disappointed" by the latest court ruling but has decided not to appeal. He added NASA thinks the bag should be on public display because it "represents the culmination of a massive national effort involving a generation of Americans, including the astronauts who risked their lives in an effort to accomplish the most significant act humankind has ever achieved."

Tracing the bag's odyssey on Earth is close to rocket science. Ms. Carlson found the listing on an online sale in March 2015 run by Texas auctioneer Gaston & Sheehan. The description didn't give away much: "One flown zippered lunar sample return bag with lunar dust ("Lunar Bag"), 11.5 inches; tear at center. Flown Mission Unknown." After receiving her winnings, she unzipped the bag and saw a tiny tag with a part number: V36-788034.

A lawyer and former city manager in Hancock, Mich., Ms. Carlson said she knew items with serial or part numbers often have paper trails, so she took her search online and combed NASA's digital records.

She also called her local rock club to see if she could get the dust tested. Its president told her to call NASA, so in September 2015, she said she shipped the bag to Johnson Space Center in Houston. Months of emails followed, as Ms. Carlson's research uncovered a matching part number among the inventory on Apollo 11: "V36-788-034 Decontamination bag, contingency lunar SRC."

Ms. Carlson waited. No an-



swer. Last May, she said she got a call from the U.S. attorney's office in Kansas informing her NASA tested the bag and it indeed contained lunar dust that could be traced to samples collected during Apollo 11.

She learned the bag had been auctioned to make restitution in a Kansas case involving Max Ary, a former director of a museum called the Kansas Cosmophere. He had been imprisoned for two years for stealing artifacts and selling them in space auctions. Mr. Ary's private collection—including this bag—had been forfeited to the U.S. Marshals Service.

NASA, claiming it was the dust's rightful owner, asked the court to rescind the auction, according to court papers. Last June, Ms. Carlson sued NASA for wrongful seizure of property in U.S. District Court in Chicago.

Allan Needell, a curator at the Smithsonian Air & Space Museum, said the disconnect likely happened early on. Although the bag was labeled "Lunar Sample Return," he said it wasn't among the 350-plus Apollo 11-related objects Johnson Space Center sent to the Smithsonian.

After the last mission to the moon, Apollo 17, landed in 1972, NASA's engineers and scientists were told to make room for the incoming space-shuttle program. Storage was tight, so Mr. Needell said, employees boxed up seemingly minor souvenirs and took them home, tossed

them out or gave them to space aficionados.

One of those fans was Mr. Ary, then planetarium director at a science museum in Texas.

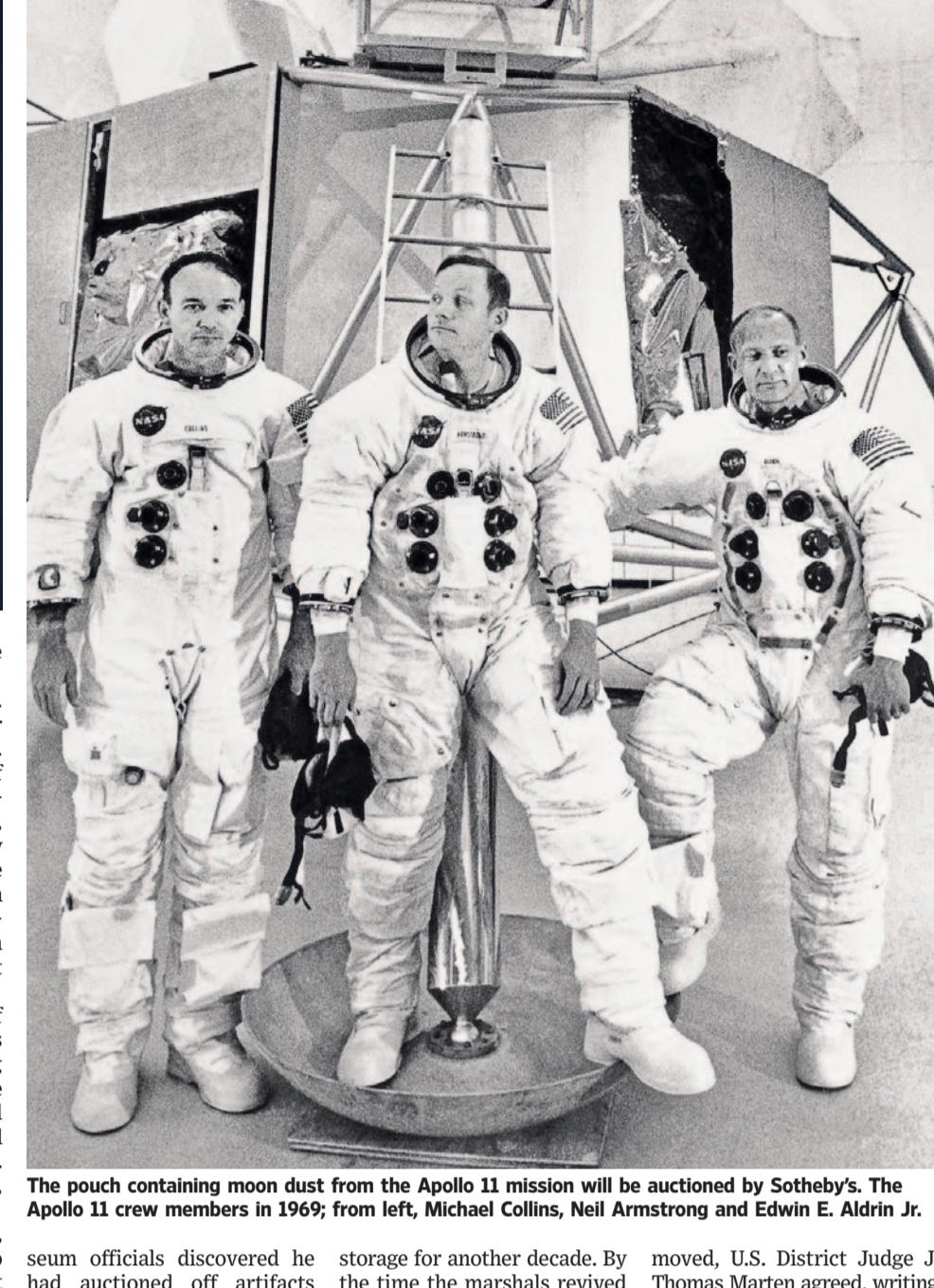
Mr. Ary, now the director of the Stafford Air & Space Museum in Weatherford, Okla., said, "I can't tell you how many times I was talking with one engineer or another at Johnson and they'd hand me a cardboard box of stuff and say, 'Can you help me take this stuff out to the trash?'"

He said he started asking if he could keep some mementos and "faintly remembers" the bag being in one of those boxes he carried to the museum. "I had no idea it was Apollo 11," he said of the bag. During most of Mr. Ary's 27-year tenure in Kansas, he said the bag was in storage.

According to court papers,

NASA claims it lent the bag to the Kansas museum in 1981, but NASA's court records didn't include any loan agreement to confirm the deal. The bag entered the museum's records in the early 1980s as a "Lunar Sample Return Bag, Flown Mission Unknown" with an estimated value of \$15, according to an inventory sheet the museum gave NASA to submit to the court. As years passed, Mr. Ary said his personal collection and the museum's got increasingly tangled and this disorganization "came back to bite me big time."

After he left in 2002, mu-



The pouch containing moon dust from the Apollo 11 mission will be auctioned by Sotheby's. The Apollo 11 crew members in 1969; from left, Michael Collins, Neil Armstrong and Edwin E. Aldrin Jr.

seum officials discovered he had auctioned off artifacts NASA had lent to the museum or that Mr. Ary had already donated. FBI agents raided his home in 2003 and confiscated any space memorabilia they found, including the white, zippered pouch in his garage. Mr. Ary was indicted and later convicted of theft of government property and money laundering, among other things.

Within weeks, the FBI got authorization to turn over Mr. Ary's seized collection to the U.S. Marshals Service to prepare for sale. A backlog of forfeited goods left them sitting in

storage for another decade. By the time the marshals revived the plan to auction them, NASA told the court it no longer remembered to take another look at Mr. Ary's pieces, according to court documents. The U.S. Marshals declined to comment.

"It's an incredible piece of history, and losing it was a colossal mistake for NASA," said Joseph Gutheinz, a former special agent at NASA's Office of the Inspector General, the agency's law-enforcement arm.

Mr. Gutheinz sided with Ms. Carlson in the case. "Nancy Lee bought it fair and square."

In Kansas, where the case

moved, U.S. District Judge J. Thomas Marten agreed, writing in his Dec. 14 ruling that "Ms. Carlson's standing as a bona fide purchaser gives her priority over NASA's asserted claim."

On Feb. 27, Ms. Carlson pulled up to Johnson Space Center to collect her moon dust. A worker handed her a cardboard box with the bag inside. She turned it over to security guards she had hired to protect it. Now, she said she hopes to use some proceeds to fund scientific and medical research. "That's why we started the space program," she said. "We wanted to go beyond."

when they extended the \$118.7 million loan to Mr. Icahn. "We're not as smart as we thought we were," he said when told the charity could have earned more.

New York law requires charities to seek approval of a state court or the state attorney general's office before selling a substantial share of their assets, which the railcar-company shares were; they amounted to 85% of the charity's assets when sold back to Mr. Icahn in 2006.

Court documents show a state judge approved the sale—on credit granted to Mr. Icahn—and the attorney general's office said it had no objection, despite a state law broadly prohibiting charities from lending to officers and directors or their affiliated companies.

"The loan was erroneously approved in 2006," said a spokeswoman for the New York attorney general's office, Amy Spitalnick, when asked about the transaction. She added that the office "has implemented changes to help prevent these sorts of issues."

The state judge, Phyllis Gan-Jacob, said she didn't recall the case. A representative for the attorney general at the time, Eliot Spitzer, said he didn't remember details of the matter and had no comment. In 2011, a different state judge approved the debt's five-year extension, with the attorney general's office again having no objection.

The Foundation for a Greater Opportunity has made grants of more than \$30 million since its inception, tax documents show, though most of that didn't go to the charities it originally pledged to support. In 2013, it gave \$19 million to a fund at the National Philanthropic Trust dedicated to eradicating polio. The charity has also supported charter schools named after Mr. Icahn.

Mr. Fliegel, the charity board member, said Mr. Icahn was devoted to ensuring that low-income students have access to a quality education. "I know there are a lot of critics of Carl Icahn," Mr. Fliegel said, "but I must admit in this regard, he's been most generous."

—Asiylyn Loder and Jason Zweig contributed to this article.

# LOANS

*Continued from Page One*  
with complete data. The charities typically lent less than \$28,000.

In many cases, under federal law, public charities—as opposed to private foundations—are allowed to lend money to officers. In 2006, however, Congress enacted a law labeling loans similar to Mr. Icahn's "excess benefit transactions" and made the borrowers subject to taxes. The federal restriction, which would have applied to Mr. Icahn's specific type of public charity, didn't exist when he arranged the loan.

New York state, where both Mr. Icahn's business and the charity operate, didn't permit a charity to extend credit to a director, such as Mr. Icahn. State courts and other officials nonetheless cleared his transactions, a move the state attorney general's office now says was a mistake.

The general counsel of Mr. Icahn's holding company, Icahn Enterprises LP, Andrew Langham, said the charity's extension of credit to Mr. Icahn was low-risk and provided it with stable investment returns at a time of significant market volatility. He said the transaction was approved at the time by a court.

Mr. Icahn paid off the debt in December, according to public records.

A board member for the charity, Seymour Fliegel, said, "It was a very good deal for the foundation. Although it was a debt, we never felt the debt." Mr. Fliegel runs a nonprofit that aims to improve public schools.

Mr. Icahn, who gained fame as a corporate raider in the 1980s and now is a corporate shareholder activist, is a special adviser to President Donald Trump on regulatory matters.

With a fortune pegged at \$15.8 billion by Forbes, Mr. Icahn has given hundreds of millions of dollars to causes such as health-care education and charter schools. He has signed up to the Giving Pledge, a concept created by Bill Gates and Warren Buffett in which participants commit that a majority of their estates will go to philanthropy.

## Rising Railcar Stock

Carl Icahn's charity sold him shares in American Railcar Industries at the time of the company's IPO. The share price more than doubled in the next decade.



Source: WSJ Market Data Group

## Foundation's origins

Mr. Icahn set up the Foundation for a Greater Opportunity in 1997 as a type of public charity called a supporting organization, which confers better tax benefits for donors than a regular family foundation. If contributors give closely held stock to a private foundation, their tax deduction is limited to what they initially paid. Donors of stock to supporting organizations can deduct the shares' fair market value.

Supporting organization boards can include donors, although they are controlled by the nonprofits the organizations support. Both Mr. Icahn and his wife, Gail, are on the board of his charity, along with representatives of its designated beneficiaries such as the Choate Rosemary Hall boarding school in Connecticut and Princeton University, Mr. Icahn's alma mater.

Mr. Icahn seeded the charity in 1997 with \$100 million worth of stock in his closely held American Railcar Industries Inc., equal to about a 38% interest. His lawyer, Mr. Langham, declined to say how the value for private stock was set or what tax deduction Mr. Icahn may have taken.

With no public market for the shares, the charity couldn't readily sell them in return for cash to make grants. They sat on its books.

In late 2005, as American Railcar explored an initial public offering, the charity's board

agreed to sell the shares back to Mr. Icahn, who owned the rest of the railcar company at the time.

The price would be \$100 million—the value of his original donation—or the IPO price, whichever was greater.

With the company expecting the IPO price to be lower, Mr. Icahn gave the charity \$10 million in cash and a promissory note agreeing to pay \$90 million more after five years.

The note specified monthly interest at the prime rate, a benchmark rate for commercial-bank lending to top clients. The prime rate was 7.25% at the start of the debt in January 2006 and fell to 3.75% by the time the debt was all repaid near the end of last year.

"The longer he can defer actually paying them the cash, the

better deal it is for him," said Mark Watson, a partner at Weaver, a Texas-based tax-advice firm, when asked about the advantages of such a deal, given the difference between the interest paid and the higher returns he might earn by investing that sum.

Mr. Icahn ended up with about 56% of the public company following its Jan. 20, 2006, initial public offering. The stock surged by more than 50% in the first month. Mr. Icahn compensated the charity following this pop, promising it an additional \$28.7 million in March 2006, in a second promissory note.

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Mr. Fliegel, the charity board member, said the board went along with how Mr. Icahn structured the deal. "No one was going to fight him on it," he said.

Mr. Fliegel said the charity board members thought they were "very smart investors"

VICTOR J. BLUE/BLOOMBERG NEWS



Activist investor Carl Icahn, pictured in May 2015

"There wasn't, like, 'Well, I don't know if it's enough money,'" he added. The remaining board members either declined to comment or didn't return calls.

This second note raised Mr. Icahn's combined loan from his charity to \$118.7 million. Both notes were for five years. They were reported as loans on the charity's 2014 IRS filing.

When due in 2011, they were extended for five more years. The charity described the extension in legal filings as being its financial interest, because it preferred to receive steady interest income amid market turmoil.

Loans paid off

Mr. Icahn paid off the larger, \$90 million note in January 2016, according to public records. He paid the second note in December 2016, a few weeks after the Journal inquired about the loans.

Over roughly a decade, the charity received around \$53 million in interest on the \$118.7 million, Mr. Langham said. That was about a 45% return.

The sum the charity lent would have returned almost 120% over the 10 years if it had received cash from Mr. Icahn in 2006 and invested in a fund tracking the S&P 500 stock index.

It is unlikely a charity would put all of its money in stocks. A more balanced mix of 60% stocks and 40% bonds would also have beaten the interest return, roughly doubling the charity's principal over the decade.

And a low-risk alternative, such as the Bloomberg Barclays U.S. Treasury Index, a widely accepted metric for tracking the U.S. Treasury market, returned about 52% for the 10 years. The indexes include compounding of interest and dividends, unlike the charity's interest from Mr. Icahn.

Mr. Langham, the lawyer for Mr. Icahn, said the secured notes were a more stable investment for the charity than the market. "By investing in the S&P, the Foundation would have been exposed to significant risk and volatility, including the 2008 financial crisis," he said.

Mr. Fliegel said the charity board members thought they were "very smart investors"

when they extended the \$118.7 million loan to Mr. Icahn. "We're not as smart as we thought we were," he said when told the charity could have earned more.

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—Asiylyn Loder and Jason Zweig contributed to this article.

## U.S. NEWS



Since the election of President Donald Trump, California has emerged as an important state for supporters of Bernie Sanders, top, and a battleground where Kimberly Ellis, bottom left, narrowly lost out to Eric Bauman, bottom right, for chairman of the state's Democratic Party.

### U.S. WATCH

#### CONNECTICUT

#### Wealthiest State Expects Tax Shortfall

Connecticut is having trouble collecting enough money to pay its bills, and the Democratic governor doesn't think taxing the rich is the answer anymore.

After two decades of robust growth, the wealthiest state in the U.S. forecasts it will fall \$400 million short in income-tax collections this fiscal year, worsening a budget crisis that prompted all three major ratings firms recently to downgrade the state's credit rating.

Connecticut's budget office estimates income-tax collections will fall in fiscal 2017 for the first time since the recession.

About \$200 million of the drop in receipts came from the state's closely watched top 100 earners, who are the source of an outsize proportion of the state's revenue. Many of the state's richest residents work for hedge funds, which have been hurt by an industry downturn.

Gov. Dannel Malloy has twice before bet that taxing the wealthy would help solve the state's fiscal problems. But neither increase resulted in sustained revenue growth, according to his administration, which says it would be a mistake to do it a third time.

"You can't go back to that well again," said Kevin Sullivan, commissioner of the Department of Revenue Services.

The tax question in Connecticut, where several thousand tax filers with adjusted gross incomes of more than \$1 million a year account for about a third of all income tax receipts, comes amid a shift in tax policy nationally.

President Donald Trump, who campaigned on promises to lower taxes, has proposed lowering business and individual rates. But he is also seeking to repeal a deduction on state taxes that will especially hit high-income earners, making it tougher for states to raise taxes among the richest.

Connecticut's fiscal troubles come as a majority of states face budget holes this cycle, according to a recent report issued by Standard & Poor's. At least nine states are considering some form of tax increase, such as raising corporation taxes and sales taxes, according to the report.

—Joseph De Avila

#### WASHINGTON

#### Trump Adviser Cites Limits on Russia Ties

President Donald Trump is limited in his ability to cooperate with Moscow because of investigations related to possible connections between Russia and his

election campaign, a top adviser said.

Mr. Trump wants to confront Russia over its actions in Ukraine and Syria and cooperate with Moscow to fight against Islamic State, White House National Security Adviser H.R. McMaster said on ABC's "This Week."

Mr. Trump met with Russian diplomats in the White House not long after dismissing James Comey as FBI director, who was investigating Russian interactions with his campaign officials. The New York Times on Friday reported Mr. Trump had told Russian officials during the meeting that his firing of Mr. Comey had relieved pressure on him related to Russia.

Mr. McMaster on Sunday said the Oval Office meeting was an opportunity for the leaders to discuss challenges in the two countries' working relationship.

"The gist of the conversation was that the president feels as if he is hamstrung in his ability to work with Russia to find areas of cooperation because this has been obviously so much in the news," Mr. McMaster said. "The intent of that conversation was to say what I'd like to do is move beyond all of the Russia news so that we can find areas of cooperation."

Democrats and other political critics have attacked Mr. Trump for continuing to seek close engagement in Moscow at a time when officials are investigating Russian interference in the 2016 campaign.

"We need to be clear that we don't have aligned interests with Russia," Sen. Ben Sasse (R., Neb.) said on ABC.

Mr. Trump has denied any campaign collaboration with Moscow and dismissed reports as "fake news."

"What the president was trying to convey to the Russians is, look, I'm not going to be distracted by this, all these issues that are here at home," Secretary of State Rex Tillerson said on Fox News.

Sen. Marco Rubio, a Republican senator who ran against Mr. Trump in the 2016 Republican primary, said he would wait for conclusions of the intelligence committee he serves on before weighing in on reports about the Russian diplomatic conversations and Mr. Comey. "I do not want to undermine the credibility of this effort in one direction or another," Mr. Rubio told CNN's State of the Nation.

Still, if the president were attempting to interfere with FBI and impede the investigation then it would be "potential obstruction of justice that people have to make a decision on," Mr. Rubio said.

—William Mauldin

## Texas Bill Targets Improper Teachers

BY TAWNELL D. HOBBS

A former Texas teacher is in prison after being sentenced in January for having sexual relations with a 13-year-old student that resulted in her becoming pregnant. Another teacher in the state this year is facing a sex-assault charge, and has yet to enter plea, for allegedly paying a student nearly \$28,000 to keep quiet about their sexual relationship.

As similar alleged incidents rise in the state, Texas legislators have passed one of the toughest bills nationally to penalize administrators who ignore such misconduct. Some teachers suspected of such acts have been able to resign and join other school districts in a move that some legislators call "passing the trash."

Texas Gov. Greg Abbott is expected to sign the bill into law in coming days to make it a criminal offense for school superintendents and principals to not report inappropriate teacher-student relationships.

The bill, which passed with bipartisan support in the Texas Senate and House, comes with tougher administrative penalties for teachers who commit inappropriate acts, which include sexual contact and sexual intercourse with students.

"I want legislation that puts real consequences for those teachers, and we must also penalize the administrators who turn a blind eye to such abuse

## Sanders Supporters Lose California Vote

BY ALEJANDRO LAZO

The California Democratic Party elected Eric Bauman to its top leadership post Saturday, narrowly defeating an insurgent candidate whom supporters of Vermont Sen. Bernie Sanders had rallied around.

Delegates to the state Democratic Party convention in Sacramento chose Mr. Bauman as a successor to departing Chairman John Burton, who has been credited with helping solidify the party's control of the state, even at a time when much of the rest of country has been awash in a sea of red.

Supporters of Mr. Sanders had backed Kimberly Ellis, who had promised to reorder the party establishment and redefine what it means to be a Democrat in this deeply blue state. Mr. Bauman received 1,493 votes while Ms. Ellis got 1,431. A third candidate, Lenore Alberto-Sheridan, received seven.

Considered more of a traditional candidate, Mr. Bauman has said that he hopes to build on the party's success, which includes holding every statewide elected position, a two-thirds control of both houses of the state legislature and a sizable congressional delegation.

"California must remain the bastion of resistance against Donald Trump, and the shining beacon of hope, leading the way, pushing the envelope on progressive policy for the rest of the nation to follow," Mr. Bauman said. "My fellow officers and I are committed to working with you to make our party rep-

resentative of our grass-roots base and ensure we stand up for those most in need."

Ms. Ellis told supporters, who chanted "Eric lies" and "recount" that she would potentially contest the election results and not concede.

"In the spirit of not being afraid to facilitate difficult conversations, and tell hard truths, I want you to know that we have some serious concerns about the vote count," Ms. Ellis told supporters late Saturday

*Ellis, a grass-roots candidate, may challenge her loss to a Democratic insider.*

night, according to video posted on Facebook. "So I want you all to know that we have been in communication with counsel, legal counsel, and I want you to know that this race is not over."

In a statement Sunday morning, Ms. Ellis said that the election "will come down to a handful of votes at the end of the day" and she would be meeting Sunday with state party chair Mr. Burton about "concerns about the way some of those votes were cast." Mr. Bauman said Sunday that the race was indeed "over," and said "we are all united together to move the California party forward."

Since the election of President Donald Trump, California has emerged as an important

state for Sanders supporters and a battleground that could point to the future of the Democratic Party.

A win for Ms. Ellis could have proved a significant victory for their movement after Mr. Sanders's choice to head the national party, Rep. Keith Ellison (D., Minn.), was defeated in February by former Labor Secretary Tom Perez, who is also viewed as a more establishment figure.

The California race itself proved to be less about ideology. The candidates—Ms. Ellis, an African-American woman from the San Francisco area, and Mr. Bauman, the current vice chairman of the state's Democratic Party—agree on most issues and the state's platform is already progressive compared with other states.

But the election broke down along some of the same lines that have divided the party since Mr. Sanders mounted his challenge for the Democratic presidential nomination, with Mr. Bauman openly admitting he was a party insider, though he supported Mr. Ellison during the race for Democratic National Committee chair.

Ms. Ellis, meanwhile, had promised to give grass-roots activists more power in party leadership, and push a more liberal agenda. In April, she won the endorsement of progressive organization Our Revolution, a movement inspired by the Sanders campaign that has organized in California since the presidential election and made the race for state party chair an important goal.

### Troubling Trend

Cases opened in Texas involving inappropriate relationships by educators

250 cases

and pass these teachers along to other schools," Mr. Abbott said during his State of the State Address in January.

"That kind of thing should not be tolerated and should be reported," said Linda Isaacks, executive director of the Dallas School Administrators Association. "The best interests of the students come first, always."

Monty Exter, a lobbyist with the Association of Texas Professional Educators, a professional group of about 100,000 members, said his group supports the bill. "Anytime we can strengthen protections for students, that's a good thing," he said. "It's a broadly held belief that even one instance of misconduct

with a student is one too many."

Reported cases in Texas involving alleged inappropriate relationships by educators have increased over the past seven years—from 141 in 2009 to 222 in the fiscal year ended August 2016, according to the Texas Education Agency. For this fiscal year beginning Sept. 1, the number of cases was 191 as of April 30—on track to meet or exceed last year's count.

Laws that address improper relationships between teachers and students vary by state, as do penalties for administrators who fail to report the conduct.

There isn't an official nationwide system to track im-

proper teacher-student relationships, so it is unclear if there is a national uptick. Reporting requirements for educator misconduct can also differ by state.

Research by a group that focuses on teacher misconduct, called Stop Educator Sexual Abuse, Misconduct and Exploitation (S.E.S.A.M.E.), indicates a national increase in teachers arrested for sex offenses based on news reports—from 459 in 2014 to 540 in 2016.

The Las Vegas-based group—which conducts research using grants from a variety of donors who advocate for sexual-abuse survivors—has contributed to federal studies on teacher sexual abuse.

The bill in Texas puts the state at the forefront of criminalizing school leaders who conceal inappropriate conduct by educators, said Terri Miller, a leading advocate for sexually abused schoolchildren and volunteer president of S.E.S.A.M.E.

"This is an extraordinary effort," Ms. Miller said.

Under current law, Texas superintendents must report an educator's criminal record or misconduct that results in termination or resignation to the state within seven business days. Those who don't comply risk sanction, such as reprimand, suspension or revocation of certification.

Under the bill, superintendents—and principals—who conceal educator sexual misconduct would face a felony charge, punishable upon conviction by up to two years in jail. And those who help such offenders get a job at a school, despite knowing their background of misconduct, risk having their state certificate revoked.

Teachers convicted of a felony for sexual misconduct or having an improper relationship with a minor would have their pension revoked; a court could release all or part of the pension to a spouse.

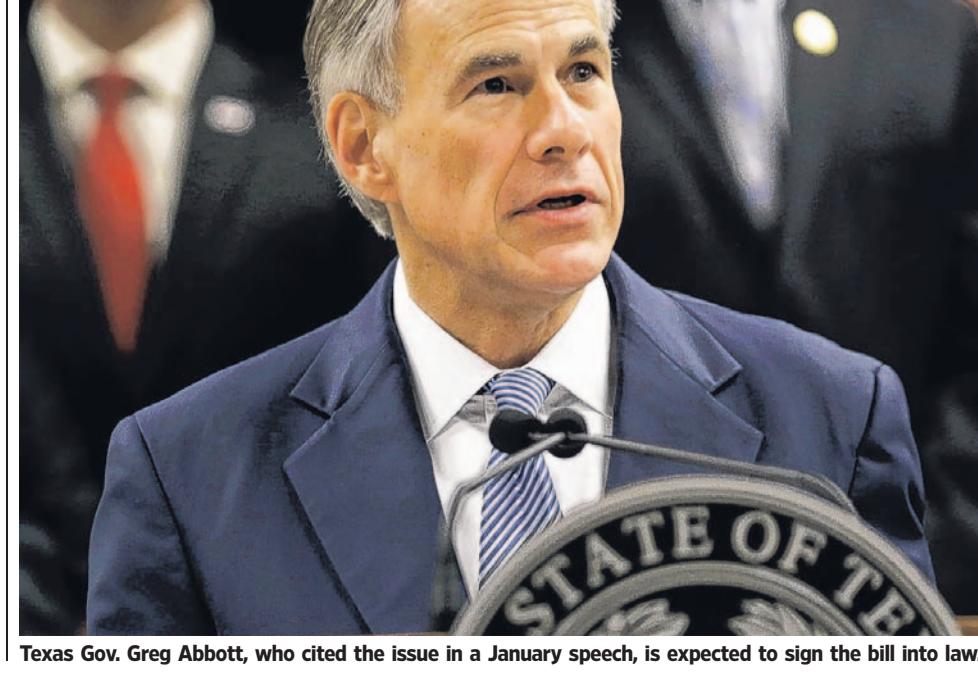
The bill also requires school systems to adopt policies for electronic communications between school employees and students as sexual predators have used social media and cellphones to connect with children. Schools would have to notify the parents of alleged victims of educator misconduct.

Gov. Abbott has until June 18 to sign the bill, and he has indicated support of its premise. There is no known organized opposition.

Note: Fiscal year ends Aug. 31; FY2017 figure is through April 30.

Source: Texas Education Agency

THE WALL STREET JOURNAL.



Texas Gov. Greg Abbott, who cited the issue in a January speech, is expected to sign the bill into law.

MARIE D. DE JESUS/ASSOCIATED PRESS

# LIFE & ARTS

FILM REVIEW | By Joe Morgenstern

## 'Alien': Nothing New Under the Chest

**BEFORE CHEWING** over the more predictable parts of Ridley Scott's "Alien: Covenant," let's salute a really smart thing that Mr. Scott and his writers, John Logan and Dante Harper, have done with the latest edition of the "Alien" saga.

Seizing on the only source of sustained vitality in the director's 2012 film "Prometheus," they've made the most of it this time around. "Prometheus," a sci-fi adventure set in the "Alien" universe, was concerned with such cosmic questions as the origin of life. But the answers it came up with were awfully lame, and all but one of its characters were cut from space-age cardboard. The exception was an intricately appealing android. His name was David, he was played by Michael Fassbender, and he stole the show with supra-human aplomb. The good news is that David is back, in a way that doubles down, or more properly up, on his potential and gives Mr. Fassbender lots to do. (The cast includes Danny McBride, Billy Crudup, Demián Bichir and Carmen Ejogo.) And the bad news? This new "Alien" prequel is mostly a gore fest, which may be great news for gluttons of the genre.

The Covenant of the title is a spaceship carrying 2,000 colonists,



Katherine Waterston as Daniels, the ship's second-in-command, in Ridley Scott's 'Alien: Covenant'

along with unspecified numbers of frozen embryos, from Earth to a supposedly habitable planet on the far side of the galaxy. The colonists are sleeping deeply, since the trip is scheduled to take seven years, but the crew is rudely awakened by incipient calamity in the form of a neutrino burst. Extensive damage is sustained, followed by extensive repairs that are at least as interesting as watching the road being paved in "Cars."

Still, the repairs have their own logic, which is more than can be said of a detour to a nearby planet on the strength of a rogue transmission that features John Denver singing "Take Me Home, Country Roads." The stop is opposed by Daniels (Katherine Waterston), the ship's second-in-command, who is clearly not a John Denver fan. (Ms. Waterston gives a strong performance, even if Daniels can't touch Sigourney Weaver's powerful pres-

ence as Ripley in the four chapters of the main series.) Yet the detour is taken all the same, an impulsive exploration of an uncharted planet that looks like paradise, though any fan of horror stories—or anyone who's read Ray Bradbury—will know instantly that it's anything but.

A case could be made that "Alien: Covenant," being very much a horror story, has shrewdly forgone logic and plausibility in favor of letting the audience get ahead of, and savor in advance, the plot's most lurid developments. (Not those involving Mr. Fassbender, I hasten to say.) Thus the explorers dispense with sensible precautions. They don't bother to wear space helmets. They stray heedlessly from their ship, leaving its cargo door wide open. Venturing deep into caves, they touch gloopy stuff that shouldn't be touched, especially because it moves. Once the worst happens—and this is a franchise in which the worst happens over and over again—basic quarantine procedures are thrown to the solar winds. The results can be funny, as well as scary, but not "Spaceballs" funny, not "The Bad

News Bears" funny. The cumulative impact of this silly stuff is a sense of laziness or fatigue, a breaking of faith with those in the audience who may have come expecting something new.

By the same token, many "Alien" fans will come looking for something old, and that's in bloodily abundant supply. It may well be sufficient, considering the excitement that an "Alien" logo can still elicit, almost four decades after the original hit the screen. The key word, of course, is "original." No one knew what was coming the first time around, any more than they knew, nearly two decades before that, what would happen to Janet Leigh when she stepped into the shower. In today's movie business originality is often seen as a risk, and carbon copies can be perfectly acceptable, despite the disappearance of carbon paper. In that context, the action sequences of "Alien: Covenant" give satisfaction, while the android element—to use a bland, spoiler-free term—provides ample food for thought and cause for worry, machine-learning being what it is and soon will be.

### TELEVISION REVIEW

## CAPTAIN CHAOS GOES TO WASHINGTON

BY DOROTHY RABINOWITZ

**THE SUBJECT** of this documentary has never yielded in his regard for the infliction of shock and chaos as a political tactic, according to the commentators, mainly journalists, assembled for "Bannon's War," a "Frontline" film on the life and career of Steve Bannon. It's a perception regularly echoed in this telling portrait of the adviser primarily responsible for shaping Donald Trump's message for most of the presidential campaign—and the one delivered in President Trump's memorably dark inaugural address.

"This American carnage stops right here, and stops right now," the nation heard on the celebratory day meant to symbolize the blessings of democracy, the peaceful transition of power.

An old friend of Mr. Bannon, interviewed for this film, reflects affectionately on the ease with which she recognizes his lines and his views in Mr. Trump's public pronouncements. Prime among those views, the film makes clear, is an enduring belief in the value of chaos and disorder to undermine the establishment, usurp its power.

To be sure, it's hard to know just how sturdy Mr. Bannon's faith is now, given the continuing riot of embarrassments, disclosures, wildly conflicting official pronouncements—each more astounding than that of the day before—currently emanating from the Trump White House. This

was, perhaps, not the valuable chaos Mr. Bannon had in mind.

Those beliefs—"bring on the apocalypse," one commentator describes it—had taken root early. As a junior at Virginia Tech, he ran for student body president and won a surprise victory by running on a platform in which he attacked his rivals as tools of the adminis-

tration—of the establishment—and by claiming for himself the mantle of "an outsider." It was, one of the film's Bannon historians observes, "very Trumplike."

Michael Kirk and his "Frontline" team, as they characteristically do, have imbued this political biography with human dimension. Here are the details of an Irish working-class childhood in Richmond, Va.—of the influence of a father, a telephone lineman, who taught his son the value of hard work, and who knocked on doors to help elect John F. Kennedy.

During his college days, we learn, Mr. Bannon worked in a junkyard—his mother hosed him clean before he entered the house. The young Bannon who emerges from this background is an omnivorous

reader—a devourer, especially, of philosophy and history that yielded clues to the future. Future calamities, in particular. No danger preoccupied him more than the one posed by the Islamic world, which would in his view forever be a mortal threat to the West.

Serving in the Navy when the Iranians seized the American Embassy in Tehran, he had become embittered over President Jimmy Carter's failure to rescue the hostages—but nothing would have

remained unconvinced.

The Bannon who arrived in Washington as Donald Trump's chief strategist—and was, to universal astonishment, awarded a seat on the National Security Council despite his lack of credentials or anything resembling foreign-policy experience—had lost none of his ingrained belief in the value of disruption. In the film's most riveting section there's a description of the Bannon-directed effort to ensure the rollout, immediately after Mr. Trump assumed office, of one controversial executive order after another, not least the order aimed at restricting Muslims from entering the U.S.

Mr. Bannon and President Trump, the film notes, wanted the ensuing outrage, the protests, the shock and, not least, the media's cameras. They were sending a message: Change had come; Trump was making good on his promises.

Since that golden time, the president's chief strategist has seen a sharp reduction in his status. He's been removed from his seat at the National Security Council, mainly, it is said—in this film as everywhere else—as a result of Mr. Trump's inability to tolerate the publicity showered on Mr. Bannon as a mastermind. In this hard-eyed and absorbing hour, the man Donald Trump now describes as someone who had, after all, only joined the campaign at a late stage, comes vividly to life.

**Bannon's War**

Tuesday, 10 p.m., PBS



Steve Bannon

WIN MCNAMEE/REUTERS

## LIFE & ARTS

### ART

# A New Record at Auction Week

An untitled Basquiat sells for \$110.5 million as collectors bid up blue-chip art at Christie's, Sotheby's and Phillips

BY KELLY CROW

**SOTHEBY'S NEW YORK** salesroom erupted into applause Thursday after a Japanese billionaire paid \$110.5 million for a work by Jean-Michel Basquiat, the highest price ever paid at auction for a work by a U.S. artist.

The sale, to 41-year-old e-commerce king Yusaku Maezawa, provided a crackling cap to New York's spring auctions, where sales exceeded expectations in many, but not all, categories.

The price for the Basquiat, an untitled 1982 image of a menacing, black skull painted in graffiti-style slashes, bested Andy Warhol's \$105 million auction record. It ranks the Brooklyn street artist in a rarefied, nine-figure canon alongside Pablo Picasso, Edvard Munch and Francis Bacon. The previous record for a Basquiat was \$57 million, set a year ago by Mr. Maezawa, who is building a museum in Chiba, east of Tokyo.

"When I first encountered this painting, I was struck with so much excitement and gratitude for my love of art," Mr. Maezawa said in an Instagram post shortly after he placed his winning phone bid.

Results of the auctions, which conclude Friday, suggest art shoppers are just getting started. Sotheby's, Christie's and Phillips reported more than \$1.4 billion in art sales throughout a week that swung from stable to exuberant—a sign that once-wary collectors seem increasingly eager to splurge on blue-chip impressionist, modern and contemporary art.

Other notables include a Cy Twombly abstract, "Leda and the Swan," which Christie's sold for \$53 million, and a Francis Bacon triple portrait of his lover, "Three Studies for a Self-Portrait of George Dyer," which the same house sold for \$51.8 million.

Sotheby's \$319.2 million contemporary art sale Thursday surpassed its high expectations; two days earlier, it also sold Kazimir Malevich's \$21.2 million abstract, "Suprematist Composition with Plane in Projection," for more than its \$18 million high estimate. Phillips's \$110.3 million sale Thursday was led by Peter Doig's \$28.8 million "Rosedale," a 1991 view of a manor house.

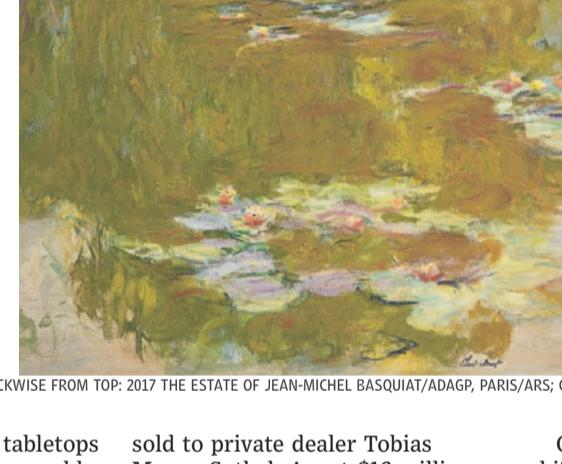
Ahead of these sales, the houses made financial deals to ensure that dozens of their priciest pieces sold no matter what—an unsettling move that suggests sellers didn't want to shoulder their own risk. Yet plenty of artists still underwent major market tests. Here's a look at a few of the strongest and weakest performers.

#### WINNERS

**Sculptures:** After papering their walls with paintings in recent years, collectors must have real-



This untitled 1982 Jean-Michel Basquiat painting of a colorful skull, above, was the highlight at Sotheby's on Thursday. Below from left: Phillips sold Roy Lichtenstein's two-sided view of a woman in a ponytail from 1996; Claude Monet's 'Waterlily Pond' from 1917-20 only drew a few limp bids, and sold for \$16 million; Jeff Koons' sculpture of vacuum cleaners drew just one bid.



CLOCKWISE FROM TOP: 2017 THE ESTATE OF JEAN-MICHEL BASQUIAT/ADAGP, PARIS/ARS; CHRISTIE'S IMAGES LTD. 2017; SOTHEBY'S; PHILLIPS

ized they still had empty tabletops or patios because sculptures sold well at all sizes this week. Hits included Christie's \$57.3 million melon-size Constantin Brancusi bronze, "Sleeping Muse," which

sold to private dealer Tobias Meyer. Sotheby's got \$16 million for a Max Ernst figure of a chess player, "The King Playing with the Queen," that once belonged to painter Robert Motherwell.

Collectors pushed Isamu Noguchi's garden totems to three times their asking prices at Christie's. Phillips sold Roy Lichtenstein's two-sided view of a woman in a ponytail from 1996, "Woman: Sun-

light, Moonlight," for \$10.3 million on Thursday.

**Scholarly Moderns:** Collectors of impressionist and modern art appeared ready to pay premiums for cerebral works with more historical significance than wall-power punch this week. A dogged bidding war ensued Monday over Wassily Kandinsky's 1925 "Top and Left," an abstract intended to illustrate the artist's Bauhaus color theories, with Christie's chief executive Guillaume Cerutti fielding the winning telephone bid for \$8.3 million. The Kandinsky was only expected to sell for up to \$7 million.

**Rich Hues:** Why be content with a few colors when you can buy the entire box of Crayolas? That logic seemed to spur contemporary art collectors this week, benefiting artists like Mark Grotjahn and Njideka Akunyili Crosby. Both easily weathered their auction tests, thanks to works that contained dense kaleidoscopes of colors rather than spare, muted hues. Christie's sold Grotjahn's feathery abstract, "Untitled (S III Released to France Face 43.14)," for \$16.8 million, just over its \$16 million high estimate. Crosby's patterned, night-club scene from 2010, "I Refuse to be Invisible," sold at Christie's for \$2.6 million, over its \$2 million high estimate.

#### LOSERS

**Bad Impressions:** With so many A-list impressionist works already tucked away in museums, collectors sniffed or paid bargain prices for the classic leftovers that wound up at auction this week. Claude Monet is typically a powerhouse, but his "Waterlily Pond" from 1917-20 only drew a few limp bids, and it sold for \$16 million edging over its \$14 million low estimate thanks in part to Sotheby's added fees. Monet's wintry "Road to Vetheuil, Snowy Effect" also saw thin bidding, selling for its \$10 million low estimate, or \$11.4 million after Christie's added fees.

**Jeff Koons:** Even as this New York artist's 45-foot-tall "Seated Ballerina" was installed in Rockefeller Center, it was clear his art was almost nowhere to be found in the spring sales. This was a marked turnaround from recent seasons when collectors reaped tidy profits packing catalogs with examples of his painstakingly perfect figures of lobsters, monkeys and balloon animals. On Wednesday, Christie's tried to stir competition for his 1981-86 sculpture of vacuum cleaners, "New Shelton Wet/Dry 10 Gallon, New Shelton Wet/Dry 5 Gallon Doublecker." In the end, it only took one bid from a collector on the telephone to win it for \$7.9 million, just over its \$7 million low estimate.

### FILM REVIEW | By Joe Morgenstern

## DOMESTIC DISTURBANCE

**THE FIRST THING**, even the main thing, to be said about "The Commune" is that it's alive. This Danish-language film about a Copenhagen commune in the mid-1970s pulses with screwy energy and antic confusion. And a snake in the communal garden heightens the drama.

Like so many urban stories of our own time, this one starts with real estate—not buying or flipping a house, but inheriting one. Following the death of his father, Erik (Ulrich Thomsen), who teaches architecture at a university, must decide what to do with his childhood home. A huge old barn of a place, it's too big for him, his wife and their teenage daughter to live in. The house is also too expensive to heat and maintain, but Erik's wife, Anna (Trine Dyrholm), finds a solution to both problems impulsively, almost whimsically. Bored and frustrated by Erik's midlife funk, Anna proposes setting up a commune that will open the place to friends, acquaintances and maybe qualifying strangers. Erik agrees, grudgingly, though his testy temperament would clearly disqualify him if he weren't a founding member.

The filmmaker, Thomas Vinterberg—who wrote the screenplay with Tobias Lindholm—lived in a commune from the age of 7 to 19. What's more, and surely not coincidentally, he was a founding member of Dogme 95, an influen-

tial filmmaking collective that promulgated a radical doctrine of technical austerity and aesthetic simplicity. The best parts of the film feel authentically and joyously anarchic, whether they are literally or loosely autobiographical. New applicants undergo interviews that amount to auditions; the group grows like a band without instruments. Communal activities include winter skinny-dipping. House meetings keep tabs on the commonweal's wealth and health. Beer consumption soars, requiring a beer amnesty. A little boy with a heart condition keeps announcing brightly that he's going to die when he's 9. I'm not sure why, but we laugh at his every announcement, and a whole lot more.

Although the period is one of political upheaval in Europe and abroad, politics figure far less in "The Commune" than they do in a similar, and superior, feature set at the same time in Sweden—Lukas Moodysson's wonderful "Together." What concerns Mr. Vinterberg is how the group is affected by sexual politics when Erik, increasingly quarrelsome, takes a lover and brings her into the house. This element of the story, which may or may not have autobiographical roots, is disappointingly conventional, even though it makes sense emotionally, and though Emma, the young woman in question—yes, she's a worship-



In Thomas Vinterberg's 'The Commune,' a husband and wife in Copenhagen discover the joys and perils of group living.

ful student—is played appealingly by Helene Reingaard Neumann.

But then the acting is superb throughout. Ms. Dyrholm's Anna morphs from a happy member of a cheerfully extended family into a shattered woman whose grief is

worthy of an Ingmar Bergman heroine. Mr. Thomsen, who has worked with the filmmaker before—in 1998 he was the moral center of Mr. Vinterberg's spectacular second feature, "The Celebration"—makes Erik a figure of cool restiveness, chronic

neediness, icy brutality and finally rage. Erik may be a product of the house he and his family grew up in. Surveying its vast spaces at the beginning of the picture, an old friend tells him, astutely, "No wonder you were all so aloof."

## OPINION

### REVIEW & OUTLOOK

## A Republican Survival Strategy

**R**epublicans in Congress can't control President Trump's rolling controversies, but they are getting plenty of bad advice on how to handle them. Democrats and Never Trumpers agree that the GOP should denounce Mr. Trump, try to remove him from office, and if that fails wait for the Pelosi Democratic Congress to arrive in 2018. This is supposed to be requisite punishment for trying to work with a duly elected if deeply flawed President.

We trust Republicans will reject this counsel of suicide, because there is a better way: Get on with passing the agenda they campaigned on. The Trump investigations will proceed at the same time, and Republicans can respond to new facts as they develop. Whatever happens on the other end of Pennsylvania Avenue, Republicans have an obligation to fulfill their reform mandate while they still have the political power to do so.

\* \* \*

This has the added advantage of being good for the country. The U.S. has struggled with subpar economic growth for more than a decade, and Republicans won in part because they said they'd do better.

Tax reform and deregulation are prime opportunities to unlock the growth and business investment that increase middle-class incomes. On ObamaCare, the GOP can provide relief from surging insurance premiums and diminished choices by replacing the failing entitlement with a more market-based system.

Confirming conservative judges would correct for President Obama's progressive tilt on the federal bench and perhaps restrain the runaway administrative state. And rebuilding the military is crucial to U.S. security in a world of increasing threats.

Going on policy offense is also the best defensive politics. Democrats want to talk about Mr. Trump all the time because they know this gives the public the impression that nothing else is happening in Washington. Paralysis is their strategy.

If Republicans start to move on policy, they automatically change at least some of the political conversation away from Mr. Trump. Debating tax cuts sure beats discussing Mike Flynn. Democrats would have no choice but to respond on the issues, and even the media would have to cover the tax and health debates. OK, maybe

not the media, but that would also mean less relentless opposition on policy.

Speed is also increasingly vital as Mr. Trump's difficulties mount. Perhaps he'll recover if the Russia charges are overblown, but the news could also get worse and the media will play up every detail as potential impeachment fodder. Republicans can't wait for Mr. Trump's approval rating to rise.

Health care and tax reform would ideally both pass this year so their impact would be visible in 2018. The tax cut should be effective immediately so it doesn't delay investment decisions as businesses wait for lower rates to kick in later; no phase-ins as with the 2001 George W. Bush tax cut.

Republicans also have to assume they'll contest next year's midterms with an unpopular President and a Democratic base eager to repudiate him by retaking Congress. Republicans are bound to suffer some collateral damage if the Trump scandals are still florid, but that's all the more reason to have something else to talk about. The best defense against scandal by association with Mr. Trump is to point to accomplishments that Republicans and independents will support. That's also the only way to get enough GOP voters to the polls.

Democrats and the Never Trumpers will continue to berate Republicans for not being sufficiently anti-Trump, but Republicans shouldn't apologize for trying to work with a GOP President on shared goals. His character flaws aren't theirs. Republicans in Congress ran on their own agenda, and House Republicans won millions of more votes than Mr. Trump did. They have every right to follow through on that agenda.

It would certainly help if Mr. Trump behaved better and controlled himself, but Republicans can't count on that. Their best option is to plow ahead anyway and present Mr. Trump with legislation to sign. That's what Democrats did when they controlled Congress while they investigated Richard Nixon, and they piled up significant policy wins.

No one knows how the various Trump investigations will play out, but Republicans can adapt and criticize or defend as new facts arise. Whatever happens, they'll be in a stronger position if they don't squander their current majorities as Democrats hope they will.

## A Victory Over Fake News

**D**efamation laws are often abused, but last week came a rare victory for the First Amendment and legal recourse against slander. On Wednesday Alex Jones, a right-wing gadfly who occupies one of the darker corners of the internet, settled a lawsuit filed by Chobani yogurt over odious falsehoods on Mr. Jones's website Infowars.

"During the week of April 10, 2017," Mr. Jones said in a video on his website, "certain statements were made on the Infowars Twitter feed and YouTube channel regarding Chobani, LLC that I now understand to be wrong. The tweets and video have now been retracted and will not be reposted. On behalf of Infowars, I regret that we mischaracterized Chobani, its employees and the people of Twin Falls, Idaho, the way we did."

As humiliating apologies go, this is one for the ages. The contrition is warranted: An April Infowars tweet and video carried the title "Idaho Yogurt Maker Caught Importing Migrant Rapists." Chobani's founder is a Turkish immi-

grant who has hired hundreds of refugees to work in his plants. Mr. Jones's outfit suggested that Chobani workers in Idaho were connected to a gruesome sexual assault perpetrated by minors. For added class, Infowars said that maybe refugees had spread tuberculosis.

The allegations are false, though the video spread across the internet thanks to thousands of tweets and shares on social media. Drudge published the headline "REPORT: Syrian 'Refugees' Rape Little Girl at Knifepoint in Idaho." Chobani sued Mr. Jones for what the suit described as a "classic" case of defamation, which includes acting with malice.

Mr. Jones first insisted he would fight the Chobani suit, but his lawyers must have helped him realize that he was barreling toward an expensive defeat. Chobani has declined to disclose settlement details, but perhaps this encounter will dissuade Mr. Jones and his allies from peddling untruths this outrageous. Congratulations to Chobani for fighting back against a real example of fake news.

Alex Jones apologizes to Chobani and its employees for his slurs.

## Trump Wavers on Jerusalem

**D**onald Trump made many campaign promises in his run to the Presidency, but none sounded more sincere than his commitment to recognize Jerusalem as the capital of Israel. The week of his inauguration he repeated the pledge to an Israeli news outlet, adding, "I'm not a person who breaks promises."

This promise will go unfulfilled when Mr. Trump visits Israel on his current trip to the Middle East. Administration officials have conveyed in the past week that, once again, the time isn't appropriate for the move. Mr. Trump hasn't explained his reversal, so we are left to assume that the reason for renegeing is the same one U.S. Presidents of both parties have given back to the Clinton Presidency: The move might imperil the Israeli-Palestinian peace process.

Israelis no doubt will welcome Mr. Trump enthusiastically when he arrives, because he follows after the explicit hostility that Barack Obama displayed toward this important Middle East ally and its prime minister, Benjamin Netanyahu. Still, breaking this important public promise is difficult to understand.

Mr. Trump deepened the promise when he named New York lawyer David Friedman as his ambassador to Israel. Mr. Friedman said he would work to renew the bond between the two countries, "and I look forward to doing this from the U.S. Embassy in Israel's eternal capital, Jerusalem."

It is now evident that even a commitment of this much presidential prestige has been overturned by the U.S. State Department's fa-

mous determination to continue the peace process with the Palestinians to the end of days. The history of this greatest of all diplomatic mirages extends back decades, but let us give the short version of why it won't happen: The Palestinians claim Jerusalem as the capital of any future state, and the Israelis will never con-

cide that claim.

Given this intractable stand-off, we would argue that Mr. Trump is more likely to break the peace-process gridlock if he makes good on his promise. It might make clear to the Palestinians that the wheels of history are not moving in their favor, and the time has arrived to enter into a credible negotiation with Israel.

The Administration officials who pushed Mr. Trump off his campaign promise no doubt argued that it risks alienating America's Arab allies in the region. But allies such as Saudi Arabia and Jordan already have recognized that their priority has shifted away from Israel and Palestine and toward the existential threat of Iran's nuclear program, its push for Shiite-led regional hegemony, and the rise of Islamic State. They are engaging Israel in ways that seemed impossible not long ago.

It has been 22 years since Congress passed the Jerusalem Embassy Act, requiring State to relocate the embassy. Every six months since, a U.S. President has signed a waiver to delay the move. It's unfortunate to see that President Trump, too, has wavered on this commitment. The least he can do for those who believed his campaign promise is to explain why he now believes he can't keep it.

## The Mueller Caveat



POTOMAC WATCH  
By Kimberly A. Strassel

Professional medical organizations have a simple guideline: It's a bad idea for doctors to treat their friends or relatives. No matter how skilled, no matter how upright, a doctor who does risks losing his objectivity. The big question is whether this applies to Washington's new scandal doctor, Robert Mueller.

In tapping Mr. Mueller as special counsel to look into Russia's interference in the 2016 election, Deputy Attorney General Rod Rosenstein has certainly doused the political flames. Democrats were forced to tone down their chant for instant impeachment. Republicans were able to step back from the escalating headlines.

That's because the new guy is as skilled and upright as they come. A Robert Mueller word-association game would go something like this: integrity, honor, respect, order, discipline, honesty, fairness. He is a decorated Marine, a Princeton grad, a respected federal prosecutor and a former FBI director. Mr. Mueller has tackled strongmen and terrorists, working under Republicans and Democrats. He has little use for the press or the limelight, which—in the current hysterical environment—is a singular qualification.

In short, nobody doubts Mr. Mueller will lead as professional an investigation as he is capable of conducting. It's the "capable" bit that provides the one note of concern.

Mr. Mueller is no doctor. But he is part of the brotherhood of prosecutors. Justice Department attorneys have their squabbles and differences, but they count themselves as a legal elite, charged with a noble purpose. They largely keep their own counsel and aren't much for outside criticism.

The FBI's culture is even more famous and pronounced. Tens of thousands of special agents and staff from different backgrounds come together to protect the country from criminals and terrorists. Outside the military, no other Washington body rivals the FBI's esprit de corps.

Mr. Mueller spent nearly his entire career within these insular worlds. What's more, he's a longtime colleague of none other than James Comey. Garrett M. Graff, a Mueller biographer, wrote in Politico last week that Mr. Comey "treated Mueller as a close friend and almost mentor."

The two men have worked together, socialized together, and once even threatened to resign together. It was Mr. Mueller as FBI head who was with Mr. Comey, then deputy attorney general, during the infamous 2004 showdown with the Bush administration over NSA spying.

All this matters because Mr. Comey is now a central figure in the Russia

drama—no matter what Democrats say. Mr. Rosenstein has charged Mr. Mueller with investigating not merely Russian interference in the election, but "any matters that arose or may arise directly from the investigation." This presumably includes the recent firing of Mr. Comey. Democrats claim Mr. Trump dismissed the FBI director to halt further probing into his alleged Russia ties. The White House claims Mr. Comey was canned for his multiple breaches of protocol. Someone must discover the truth.

But how objective can even the upright Mr. Mueller be about the conduct of an old colleague, part of the same FBI club? How likely is Mr. Mueller to evaluate objectively the president who unceremoniously fired that associate and friend?

His integrity is without question. But can he be objective toward Comey?

The same question applies to the actions of current and former FBI and Justice Department officials—which need to be investigated. At this point, the only crime shown in the entire Russia investigation is the leaking of classified information, particularly Mike Flynn's name from surveillance transcripts. Given the FBI's ability to unmask such names, along with its outsize role in the Russia investigation, there is a good chance some of the unauthorized (and potentially felonious) leaks came from inside the bureau Mr. Mueller used to lead, possibly from people he worked with.

Consider last week's New York Times story revealing Mr. Comey's memo detailing his dinner with Mr. Trump. The story says Mr. Comey shared "the existence of the memo with senior F.B.I. officials and close associates." Portions of the document were read to a Times reporter by "one of Mr. Comey's associates." How long have these associates been calling the press? Did Mr. Comey know?

Mr. Mueller's past employment and his association with Mr. Comey are not disqualifying. But they do put a significant burden on the special counsel to prove that he will look as closely at his old shops as he does at the new administration. That includes investigating whether Team Obama or the FBI used Russia as an excuse to monitor political opponents inappropriately. It includes tracking down those who endanger national security with leaks.

As a longtime lawman, Mr. Mueller should want the answers to those questions. Public trust in the FBI and Justice Department is plummeting, and Mr. Mueller could crown decades of public service by helping to restore it. But that will take a great deal of objectivity.

Write to [kim@wsj.com](mailto:kim@wsj.com).

## LETTERS TO THE EDITOR

### Loose Lips, Trump, the Russians and Secrets

Regarding your editorial "Loose Lips Sink Presidencies" (May 18): Islamic State's "laptop bomb threat to airlines" (via Israeli intelligence) has been common knowledge for a few weeks. One could assume Rex Tillerson covered this at his Moscow meeting with Vladimir Putin. There's no way a hand like Mr. Tillerson would fail to insist on secrecy and a quid pro quo. The blunt assault of the Washington Post is the more fertile ground for investigation.

LEONARD TOBOROFF

New York

Is it not possible that the U.S. president used good judgment in alerting a nation with which America has difficulties about an area in which the two countries can work

together? Is it possible that President Trump might be finding a way to develop a useful relationship with this adversary?

Must every accusation by the president's sworn enemies (the press, Democrats, progressives to the left of Democrats) be taken as truth as soon as it is uttered? Perhaps the press is missing the larger story: Too many forces are arrayed against the best solutions to our many problems.

DAN PISENTI

Mill Valley, Calif.

Who is trafficking in sensitive information? Looks to me like it's the press. I guess anything goes when the cause is just.

BILL BROCKMAN

Atlanta

### Skilled Trades Are Well Paid, There Are Jobs

Rep. Tom Suozzi's "When the Welders Came to Capitol Hill" (op-ed, May 16) further confirms what Americans have seen for years in the trades—a mismatch of skills and changing demographics. The apprenticeship model is only one

piece of the puzzle. Vocational schools must recruit in middle and high schools, as their university counterparts do, with an emphasis on personal success stories. If students see a poster of welders who sat in their same classroom three or four years earlier, who now make an upper-middle-class wage, they will become interested. Technical schools also must invest in high-school partnerships and classroom equipment donations.

Unions have an important role to play, but they must modernize their marketing practices and recruiting techniques—de-emphasize politics that divide and focus on the incredible projects that union labor builds and maintains. It would also help if more credit was given to technical education toward a multiyear apprenticeship.

National certification standards are fine, but a single publisher cannot provide all the answers for a curriculum.

Will America rise to the challenge and start producing the talent

needed for a 21st-century labor market? It may well be the difference between growth and stagnation.

RYAN BLYTHE

Georgia Trade School

New jobs are created in the private sector by employers, not politicians. The welders would have enjoyed more success in their quest had they spoken with employers.

ROBERT ALLAN SCHWARTZ

Lexington, Mass.

I reflect on the hundreds and perhaps thousands of welding jobs created in Pennsylvania by fracking for natural gas and the pipelines required for its transportation. It's a shame New York doesn't tap into this middle-class job creator. Then maybe the state could stop its multiyear national-television ad campaign about how business is booming.

RAE BURTON

Upper St. Clair, Pa.

Letters intended for publication should be addressed to: The Editor, 1211 Avenue of the Americas, New York, NY 10036, or emailed to [wsj.ltrs@wsj.com](mailto:wsj.ltrs@wsj.com). Please include your city and state. All letters are subject to editing, and unpublished letters can be neither acknowledged nor returned.

## OPINION

# Democracy Is Not Your Plaything



**DECLARATIONS**  
By Peggy Noonan

**T**his will be unpleasantly earnest, but having witnessed the atmospherics the past two weeks it's what I think needs saying:

Everyone, get serious.

*Democracy is not your plaything.*

This is not a game.

The president of the United States has produced a building crisis that is unprecedented in our history. The question, at bottom, is whether Donald Trump has demonstrated, in his first four months, that he is unfit for the presidency—wholly unsuited in terms of judgment, knowledge, mental capacity, personal stability. That epic question is then broken down into discrete and specific questions: Did he improperly attempt to interfere with an FBI criminal investigation, did his presidential campaign collude with a foreign government, etc.

**When the circus comes to Washington, it consumes everything, absorbs all energy.**

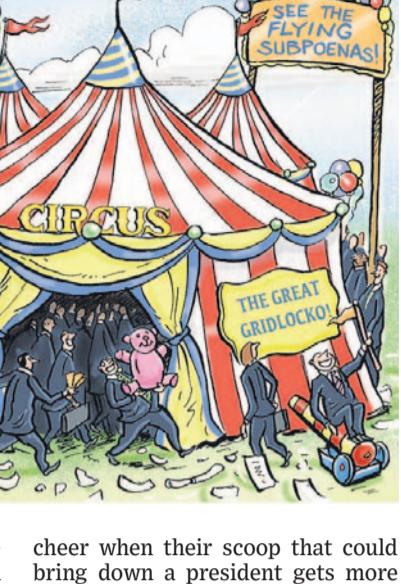
But the epic question underlies all. It couldn't be more consequential and will take time to resolve. The sheer gravity of the drama will demand the best from all of us. Is America up to it?

Mr. Trump's longtime foes, especially Democrats and progressives, are in the throes of a kind of obsessive delight. Every new blunder, every suggestion of an illegality, gives them pleasure. "He'll be gone by autumn."

But he was duly and legally elected by tens of millions of Americans who had legitimate reasons to support him, who knew they were throwing the long ball and who, polls suggest, continue to support him. They believe the press is trying to kill him. "He's new, not a politician, give him a chance." What would it do to them, what would it say to them, to have him brutally removed by his enemies after so little time? Would it tell them democracy is a con, the swamp always wins, you nobodies can make

The president's staffers seem to spend most of their time on the phone, leaking and seeking advantage, trying not to be named in the next White House Shake-Up story. A reliable anonymous source who gives good quote will be protected—for a while. The president spends his time tweeting his inane, bizarre messages—he's the victim of a "witch hunt"—from his bed, with his iPad. And giving speeches, as he did last week at the Coast Guard Academy: "No politician in history, and I say this with great surety, has been treated worse or more unfairly." Actually Lincoln got secession, civil war and a daily pounding from an abolitionist press that thought he didn't go far enough and moderates who slammed his brutalist pursuit of victory. Then someone shot him in the head. So he had his challenges.

Journalists on fire with the great story of their lives—the most bizarre presidency in U.S. history and the breaking news of its daily missteps—



your little choices but we're in control? What will that do to their faith in America's institutions, in democracy itself?

These are wrenching questions.

But if Mr. Trump is truly unfit—if he has demonstrated already, so quickly, that he cannot competently perform the role, and that his drama will only get more dangerous and chaotic, how much time should pass to let him prove it? And how dangerous will the proving get?

Again, wrenching questions. So this is no time for blood lust and delight. Because democracy is not your plaything.

The president's staffers seem to spend most of their time on the phone, leaking and seeking advantage, trying not to be named in the next White House Shake-Up story. A reliable anonymous source who gives good quote will be protected—for a while. The president spends his time tweeting his inane, bizarre messages—he's the victim of a "witch hunt"—from his bed, with his iPad. And giving speeches, as he did last week at the Coast Guard Academy: "No politician in history, and I say this with great surety, has been treated worse or more unfairly." Actually Lincoln got secession, civil war and a daily pounding from an abolitionist press that thought he didn't go far enough and moderates who slammed his brutalist pursuit of victory. Then someone shot him in the head. So he had his challenges.

Journalists on fire with the great story of their lives—the most bizarre presidency in U.S. history and the breaking news of its daily missteps—

cheer when their scoop that could bring down a president gets more hits than the previous record holder, the scoop that could bring down the president.

Stop leaking, tweeting, cheering. Democracy is not your plaything.

There's a sense nobody's in charge, that there's no power center that's holding, that in Washington they're all randomly slamming into each other.

Which is not good in a crisis.

For Capitol Hill Democrats the crisis appears to be primarily a chance to showboat. Republicans are evolving, some starting to use the word "unfit" and some, as a congressman told me, "talking like they're in a shelter for abused women. 'He didn't mean to throw me down the stairs.' He promised not to punch me again."

We're chasing so many rabbits, we can't keep track—Comey, FBI, memorandum; Russia, Flynn, the Trump campaign; Lavrov, indiscretions with intelligence. It's become a blur.

But there's an emerging sense of tragedy, isn't there? Crucially needed reforms in taxing, regulation and infrastructure—changes the country needs—are thwarted, all momentum killed. Markets are nervous.

The world sees the U.S. political system once again as a circus. Once the circus comes to town, it consumes everything, absorbs all energy.

I asked the ambassador to the U.S. from one of our greatest allies: "What does Europe say now when America leaves the room?" You're still great, he said, but "we think you're having a nervous breakdown."

It is absurd to think the president can solve his problems by firing his

staff. They are not the problem. He is the problem. They're not the A-Team, they're not the counselors you'd want, experienced and wise. They're the island of misfit toys. But they could function adequately if he could lead adequately.

For months he's told friends he's about to make big changes, and doesn't. Why? Maybe because talented people on the outside don't want to enter a poisonous staff environment just for the joy of committing career suicide. So he's stuck, surrounded by people who increasingly resent him, who fear his unpredictability and pique and will surely one day begin to speak on the record.

A mystery: Why is the president never careful? He doesn't act as if he's picking his way through a minefield every day, which he is. He acts like he's gambling through safe terrain. Thus he indulges himself with strange claims, statements, tweets. He transports himself as if he has a buffer of deep support. He doesn't. Nationally his approval numbers are in the mid to high 30s.

His position is not secure. And yet he gambols on, both paranoid and oblivious.

History is going to judge Americans by how we comported ourselves in this murky time. It will see who cared first for the country and who didn't, who kept his head and didn't, who remained true and calm and played it straight.

Now there will be a special prosecutor. In the short term this buys the White House time.

Here's an idea.

It would be good if top Hill Republicans went en masse to the president and said: "Stop it. Clean up your act. Shut your mouth. Do your job. Stop tweeting. Stop seething. Stop wasting time. You lost the thread and don't even know what you were elected to do anymore. Get a grip. Grow up and look at the terrain, see it for what it is. We have limited time. Every day you undercut yourself, you undercut us. More important, you keep from happening the good policy things we could have done together. If you don't grow up fast, you'll wind up abandoned and alone. Act like a president or leave the presidency."

Could it help? For a minute. But it would be constructive—not just carp, leaking, posing, cheering and tweeting but actually trying to lead. The president needs to be told: Democracy is not your plaything.

## There's No Easy Way To Remove Trump

By Brian C. Kalt

Interest in Section 4 of the 25<sup>th</sup> Amendment to the U.S. Constitution is peaking. Multiple amateur constitutional scholars have advocated its use to remove President Trump from office, as an alternative to impeachment. But Section 4 is a tool for a different job. Its use under today's circumstances has the potential to tear the country apart.

Section 4 is not a suitable substitute for impeachment. To be sure, impeachment sets a high bar: a majority in the House, then two-thirds in the Senate to convict and remove an official. Section 4 sounds easier: If the vice president and a majority of the cabinet declare the president "unable to discharge the powers and duties of his office," the vice president becomes acting president.

## Impeachment would be a picnic by comparison with Trump opponents' latest brainstorm.

Section 4 is a great solution if the president is missing or comatose, but a terrible one when he is conscious and in full control of his Twitter account. The first difficulty is that the president can contest the cabinet's action. If he does, Congress assembles, debates and votes. Unless two-thirds of both House and Senate vote within 21 days to back the cabinet, the president retakes power. Because impeachment requires only a simple House majority, it is easier for the president to defeat a Section 4 action than to avoid impeachment.

Further, if the president loses a Section 4 vote, he is displaced only temporarily; nothing stops him from trying again. All he needs is the support, one time, of more than a third of either the House or Senate.

Some argue that impeachment is limited to high crimes and misdemeanors, making it inappropriate for the case of someone who is (as Mr. Trump's calmer critics describe him) simply in over his head. But anyone who wields as much power as the president and who is grossly incompetent surely will have done something that rises to the level of an impeachable offense.

Section 4 is also horribly hazardous. The fatal flaw emerges from this passage: "When the President transmits . . . his written declaration that no inability exists, he shall resume the powers and duties of his office unless the Vice President and a majority of [the cabinet] transmit within four days . . . their written declaration that the President is unable to discharge the powers and duties of his office."

After reading that, who do you think holds presidential power during the four-day waiting period between the president's declaration and the cabinet's counterdeclaration? The answer is the vice president. The best reading of the text and the only reading of the crystal-clear legislative history is that the president does not immediately retake power.

Several intelligent but poorly informed commentators have gotten that wrong and said that the president would retake power immediately. A besieged president would have a tremendous incentive to look at the text, interpret it favorably to himself, and rally his supporters around that interpretation. He would assert that he had retaken power immediately and—showing his ability to discharge the powers and duties of his office—he would fire his disloyal cabinet and name more-agreeable allies as acting secretaries.

The old cabinet could fight back in Congress and in court. The best reading of the law would be on their side. But how confident are you that the winner would be determined by a careful consideration of legislative history?

Any president who could speak on his own behalf would be in a position to prolong the struggle. And what a struggle it would be, with two men claiming to be president and two rival cabinets. Even if Congress or the courts resolved the issue, and even if everyone involved respected their authority, being in such a situation for even an hour could wreak serious harm to the country. Because impeachment works better than Section 4 here, this terrible risk is also a needless one. Please, keep the 25<sup>th</sup> Amendment in reserve for the kind of emergency it was meant to address.

Mr. Kalt is a law professor at Michigan State University and author of *"Constitutional Cliffhangers: A Legal Guide for Presidents and Their Enemies"* (2012).

# Japan Can't Devalue Its Way to Recovery

By Sayuri Shirai

**C**hanges in Japan's monetary policy have caused several sharp swings in the value of the yen in recent years, and this volatility directly affected trade and economic growth. But Japanese policy makers should avoid the temptation to rely on a devaluing currency to create inflation and stimulate the economy. Such effects are not sustainable.

The yen appreciated sharply following the global financial crisis thanks to its status as a safe-haven currency. This put Japan's exporters at a disadvantage. To contain export prices, large manufacturers exerted pressure on parts suppliers and subcontractors to lower prices.

The interventions in the foreign-exchange markets in 2010-11, led by the Ministry of Finance, were unsuccessful in reversing the yen's overvaluation. Persistent deflation, together with an undervaluation of Japanese stocks, led the public and media to blame the Bank of Japan.

Prime Minister Shinzo Abe responded in late 2012 with his Abenomics program. The market reacted immediately, anticipating the BOJ's 2% price-stability target and massive monetary easing by shifting to a short position in the yen and a long position in stocks.

The BOJ under Governor Haruhiko Kuroda launched the quantitative and qualitative monetary easing (QQE) program in April 2013, which was expected to raise demand, close the output gap and raise inflation. The BOJ

later expanded QQE, followed by a negative interest rate and bond yields held at zero.

As a result, over the past 3½ years the yen has no longer been overvalued. Its exchange rate vis-à-vis the dollar is in the 100 to 110 range, which is roughly in line with fundamentals. Some market participants expect a further depreciation of the yen in anticipation of changes in U.S. monetary and economic policy.

The yen's depreciation increased the domestic value of foreign proceeds and assets, and it helped raise the profits of Japanese multinationals to historically high levels. Together with high stock prices, it improved overall corporate sentiment. But how beneficial is the yen's depreciation for an economy like Japan's, where trade contributes less than 40% of the country's gross domestic product?

Two issues need to be examined. First, there is a growing gap between export volumes and real exports. Between 2012, before the adoption of QQE, and the most recent quarter, real exports rose by 10%. While this isn't an impressive pace, at least it is positive development. But export volumes barely changed over the same period.

This difference is attributable to a shift toward exports of higher-quality, higher-priced goods such as luxury vehicles. It's a welcome trend, but the shift hasn't been accompanied by a sufficient rise in export volumes. It isn't immediately clear, therefore, to what extent the yen's depreciation has contributed to improving export performance.

Meanwhile manufacturing firms have steadily increased their overseas production, sales and profits ratios since 2012. For car makers, these ratios are approaching 50%. Regardless of the exchange rate, Japanese firms have continued to strengthen their overseas presence by producing goods suitable to local economic conditions.

The yen's volatility likely contributed to this trend. If firms view the currency's undervaluation as unsustainable, more profits will likely be reinvested abroad or held as retained earnings rather than used to raise domestic production capacity or regular wages.

The second issue is whether currency depreciation is an effective way to achieve the inflation target. The yen's depreciation was a main contributor to generating inflation in 2013-15 through higher import prices. But the impact of the exchange rate on infla-

tion is unsustainable since the exchange rate cannot continue to depreciate indefinitely.

If the exchange-rate trend turns to appreciation, as it did last year in the run-up to the U.S. presidential election, deflation or no inflation could return. In the meantime, higher import prices reduce consumption as households' real income declines.

Deflation will only be vanquished for good when Japan achieves inflation through economic growth and higher-than-expected wage increases. To complement monetary easing, Japan urgently needs policies to encourage growth and raise productivity.

*Ms. Shirai is a professor at Keio University, a former policy board member of the Bank of Japan and author of "Mission Incomplete: Reflating Japan's Economy" (Asian Development Bank, 2017).*

## The True Trade Deficit

By Martin Neil Baily  
And Adam Looney

**P**rotectionists like to cite the U.S. trade deficit—last year imports of goods and services exceeded exports by \$501 billion—as evidence that unfair trade agreements have hurt American competitiveness. But a new working paper from the Bureau of Economic Analysis, published in March, challenges this narrative: Turns out, America's trade deficit isn't nearly as large as the official figures suggest.

To illustrate this finding, the economists Fatih Guvenen, Raymond Matalloni, Dylan Rassier and Kim Ruhl examine the iPhone. The device is said to be "Designed by Apple in California. Assembled in China." Yet to lower its tax bill, Apple reports that its iPhone profits were earned in neither place, but were instead accrued in some other country.

Assume an iPhone is assembled in China for \$250 and sells in Europe and the U.S. for \$750. Apple's profit is \$500. Often that economic value gets attributed to an Apple subsidiary set up in a low-tax nation like Ireland or Luxembourg.

If most iPhone development is actually done in California, most of the \$500 represents American production and should be included in U.S. gross domestic product. Then, when an iPhone is sold in Europe, that value should count as an export from

the U.S. When a phone is instead sold in the U.S., the net amount of the import should only be the \$250 cost of manufacturing in Asia, since the rest is produced by Californians.

With this in mind, the study's authors estimate how much American trade is mismeasured. Although the official trade deficit in 2012 was \$537 billion, they conclude that U.S. exports were undercounted and imports overstated by a combined \$280 billion. With this adjustment, the real trade deficit that year shrinks to \$257 billion—or about 1.6% of GDP.

Trade still isn't balanced, but the deficit appears to be less than half the size everyone thought.

In other words, more than half the goods and services that were counted in the U.S. trade deficit were produced in America. This makes it harder to argue that an outsize trade deficit is responsible for American manufacturing's woes. It's true that traditional blue-collar workers have had trouble competing globally. But high-skilled American workers and the companies that employ them have been competing just fine.

The redistribution of income away from high school grads is certainly one of the most difficult challenges that the U.S. economy faces. But as this new evidence makes clear, the source of the problem isn't the trade deficit.

*Messrs. Baily and Looney are senior fellows at the Brookings Institution.*

## THE WALL STREET JOURNAL.

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FROM LEFT: AMANDA ENMES FOR THE WALL STREET JOURNAL (2); PIERRE BOURAS



Jesse Richman gets some air time at Maui's Baby Beach, left and tackles the wave known as Jaws, above. His training focuses on balance, right.



**WHAT'S YOUR WORKOUT?** | By Jen Murphy

# When He Flies His Kite, He Soars, Too

Growing up in Maui, **Jesse Richman** learned to fly a kite in the ocean. At age 9 he was harnessing the wind to pull him across waves while strapped to a board. He won his first world kiteboarding title at 16. Now 24, Mr. Richman is pushing the boundaries of the sport. "My focus is bigger waves and bigger air," he says.

Mr. Richman performs wakeboard-like tricks 50 feet in the air and uses his kite to ride a surfboard on Pe'ahi, or Jaws, a wave on Maui renowned for its 30-plus-foot faces. His daring stunts earned him first place at the Red Bull King of the Air competition in

Cape Town in 2013. The next year at the same contest, he broke a leg and tore some knee ligaments, which took eight months to heal. A concussion sustained while tow surfing—a sport when the surfer is pulled by a watercraft—sidelined Mr. Richman from the most recent King of the Air contest, in January.

Injuries, however, may be what keep Mr. Richman at the top of his game. "I never went to the gym until I had to do physical therapy," he says. "I liked that I could track my improvement and realized getting hurt comes with the territory, so I might as well do preventive training."

In 2015, Mr. Richman started training full time with his physical therapist Samantha Campbell. "I'm training to figure out how to ride better, not just stay fit," he says. "You start by thinking how radical can I get and reach a consequence level where you need to also be thinking, how do I survive in a situation. I'm toying with paragliding and skydiving scenarios with my kite and you can't be scared of injury."

### The Workout

In Maui, Mr. Richman works out six days a week for 60 to 90 minutes, either at the beach or at

Deep Relief Peak Performance Athletic Training Center. He starts with muscle activation and stretching, then does a one-hour workout, stretches, and has a protein shake and an ice bath.

The body absorbs a lot of force through the back, hips and ankles when landing big air maneuvers. Mr. Richman does lateral box jumps to prepare his body for the impact. "I go out in strong winds and the kite pulls you one way and your body is going another, so you need to be able to land awkwardly."

He does drills to improve his sense of his body's position in space. This might include catching balls of different colors and sizes while balancing on one leg on an unstable surface, like a Dyna Disc or SurfBall, a surfboard-like base that balances atop a BOSU ball.

Ms. Campbell puts Mr. Richman through a circuit to tire him out, then makes him complete mental tasks. For example, he might do an intense 500-meter row, then climb a rope only using his upper body, then balance on a stability ball while Ms. Campbell calls out math problems for him to solve. "If he makes a mistake, he learns to let go and completely focus on the next task," she says.

### The Diet

Mr. Richman embraces a high-protein, low-carb diet and eats five small meals a day. He starts the morning with eggs and coffee. Two

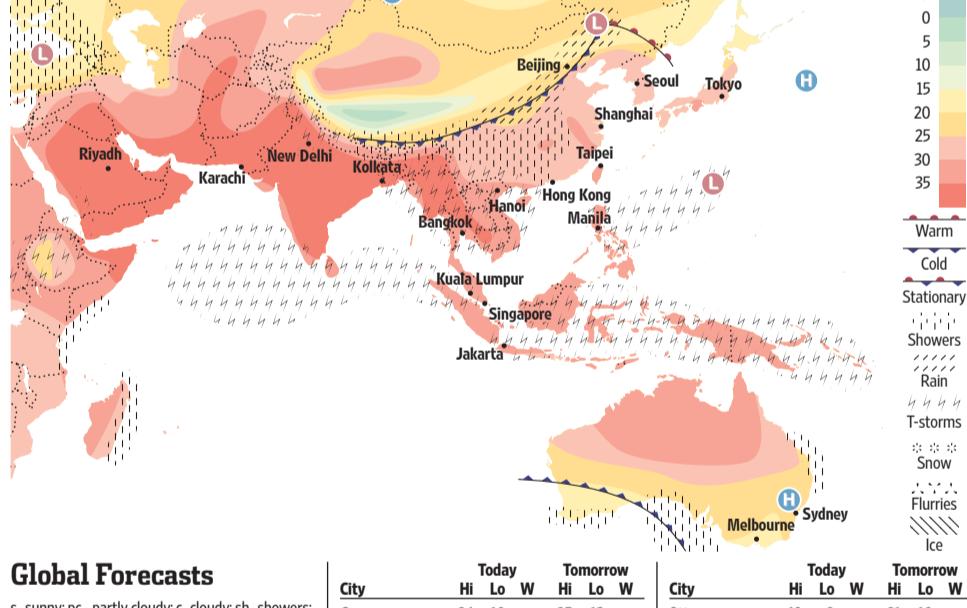
hours later he eats granola and yogurt. Lunch is often a wrap or a burrito followed by a late-afternoon smoothie. Dinner is lean protein and vegetables.

His New Year's resolution was to stop eating processed meats. When he travels, he adjusts his diet to the local culture. "I don't want to impose my routine on people," he says. "In Argentina, they eat dinner at 11 p.m., so I'll have a snack at 9 p.m."

### The Cost & Gear

Mr. Richman estimates that he owns 70 boards and 50 kites. "I form relationships with my gear," he says. "Different kites have different attitudes. I have a board for every condition." Mr. Richman is sponsored by Naish and Ride Engine and tests new gear for the board-sports companies. He uses his TriggerPoint Grid X foam roller, which retails for \$50, twice a day for 15 minutes.

## Weather

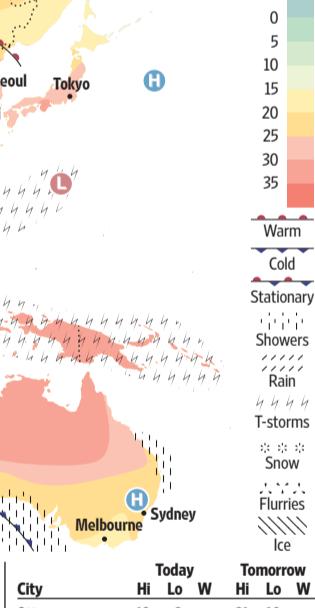


## Global Forecasts

s...sunny; pc...partly cloudy; c...cloudy; sh...showers; t...storms; r...rain; sf...snow flurries; sn...snow; l...ice

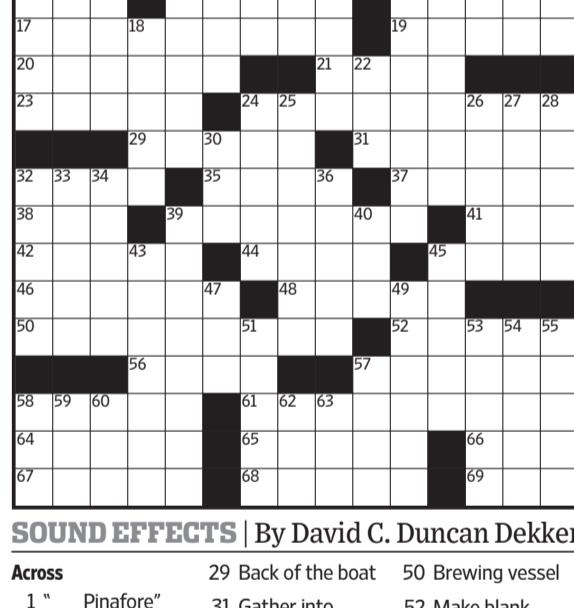
City	Today			Tomorrow		
	Hi	Lo	W	Hi	Lo	W
Amsterdam	23	12	pc	21	11	pc
Anchorage	13	6	sh	14	7	c
Athens	25	16	pc	25	16	t
Atlanta	27	19	t	24	18	t
Bahrain	35	20	s	39	22	pc
Baltimore	23	15	r	19	14	r
Bangkok	34	27	t	35	27	t
Beijing	22	12	r	29	14	s
Berlin	21	10	pc	23	13	pc
Bogota	20	10	c	19	10	r
Boise	27	12	s	29	15	s
Boston	13	11	r	20	13	pc
Brussels	24	12	pc	24	10	pc
Buenos Aires	20	12	pc	19	10	c
Cairo	34	19	pc	30	18	s
Calgary	23	9	pc	26	10	s
Caracas	32	26	pc	31	27	t
Charlotte	27	19	t	23	17	r
Chicago	22	13	pc	19	9	t
Dallas	25	17	t	26	13	sh
Denver	18	3	pc	16	5	pc
Detroit	22	13	pc	23	13	t
Dubai	39	28	s	36	27	s
Dublin	19	10	pc	21	12	c
Edinburgh	18	8	c	17	13	sh
Frankfurt	22	10	pc	26	13	pc

## AccuWeather.com



City	Today			Tomorrow		
	Hi	Lo	W	Hi	Lo	W
Ottawa	19	8	r	21	10	pc
Paris	25	13	pc	26	12	s
Philadelphia	22	16	r	22	16	r
Phoenix	40	25	s	41	25	s
Pittsburgh	22	10	pc	23	13	pc
Port-au-Prince	33	24	sh	34	24	pc
Portland, Ore.	33	15	s	27	10	s
Rio de Janeiro	25	20	r	26	20	pc
Riyadh	38	24	s	40	29	s
Rome	25	14	pc	25	15	pc
Salt Lake City	23	12	s	25	14	s
San Diego	24	16	pc	23	16	pc
San Francisco	26	12	s	23	10	s
San Juan	32	26	pc	32	26	pc
Santiago	15	6	c	14	5	c
Santo Domingo	31	24	sh	32	24	pc
Sao Paulo	20	13	sh	21	16	pc
Seattle	28	13	s	24	9	s
Seoul	28	16	s	25	16	c
Shanghai	28	21	pc	29	20	c
Singapore	32	28	c	32	28	t
Stockholm	20	7	pc	18	7	pc
Sydney	21	14	s	22	13	s
Taipei	29	25	c	31	24	sh
Tehran	30	18	s	32	21	s
Tel Aviv	30	19	pc	25	18	s
Tokyo	27	19	pc	25	19	pc
Toronto	19	9	pc	22	11	c
Vancouver	21	11	pc	19	9	s
Washington, D.C.	25	17	r	20	16	r
Zurich	23	10	pc	25	11	t

## The WSJ Daily Crossword | Edited by Mike Shenk



SOUND EFFECTS   By David C. Duncan Dekker	
Across	Down
1 "Pinafore"	29 Back of the boat
4 Only president born in the 1960s	30 Brewing vessel
9 Jotted down	31 Gather into bundles, as grain stalks
14 Sound of amazement	32 Really small
15 Werewolf friend of Dumbledore	33 Comprehends
16 Pay tribute to	34 Film trophy
17 Holds one's ground	35 Spot for stage diving
19 Express checkout line count	36 Find charming
20 Conical dwellings	37 Film trophy
21 Very small amount	38 Have a late meal
22 To the point	39 Find a job for
23 A lot	40 Game show VIP
24 Gerbil or rat, say	41 Harris and Helms of Hollywood
	42 Cinnabon store come-on
	43 Advice from a broker
	44 Peach or beech
	45 Party leaders
	46 Be plentiful
	47 Bring down
	48 Radner of "SNL"

► Solve this puzzle online and discuss it at [WSJ.com/Puzzles](http://WSJ.com/Puzzles).

3 Rectangle or rhombus	30 Sense of self
4 Firstborn	32 Notable Newton
5 Smooch	33 Engine booster
6 Angry Birds 2, for example	34 Many an "SNL" skit
7 Farrow in films	36 Divide, in a way
8 Playfulness perpetrated by a prankster	39 1982 Hall & Oates hit
9 Extremely enthusiastic	40 Indisposed
10 Takes turns	43 Part of an auto's exhaust system
11 Hydrogen's atomic number	45 Linger
12 Kite on a golf course	

# BUSINESS & FINANCE

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THE WALL STREET JOURNAL.

Monday, May 22, 2017 | B1

**Yen vs. Dollar** 111.4520 ▼ 0.03%

**Hang Seng** 25174.87 ▲ 0.15%

**Gold** 1252.70 ▲ 0.08%

**WTI crude** 50.33 ▲ 1.99%

**10-Year JGB yield** 0.042%

**10-Year Treasury yield** 2.243%

## Arconic Vote Tests Activists' Power

### Swing Voters

Arconic's biggest investors, with a combined 47%, hold the keys to Thursday's board vote in a bitter five-month fight with activist Elliott Management.

HOLDER	STAKE OWNED	EXPECTED VOTE
Elliott Management	11.6%	Elliott
Vanguard Group	9.5%	Unknown
BlackRock	6.6%	Unknown
First Pacific Advisors	4.6%	Elliott
State Street Global Advisors	4.4%	Unknown
Orbis Investment Management	3.5%	Elliott
Oak Hill Capital Partners	2.0%	Unknown
Credit Suisse	1.7%	Unknown
Manning & Napier Advisors	1.5%	Unknown
Invesco	1.3%	Unknown

Source: S&P Global Market Intelligence

BY DAVID BENOIT

**Arconic** Inc.'s bitter board fight with hedge fund **Elliott Management** Corp. comes to a head this week and the result could radically alter the company's course. It also could signal just how much power shareholders are willing to give activist investors.

At a shareholder meeting in Purchase, N.Y., Thursday, Arconic shareholders will vote to fill five seats on the company's 13-member board. They will choose among candidates offered by the company itself and Elliott, an activist hedge fund that wants to overhaul the \$12 billion maker of parts

for airplanes and automobiles.

A board shake-up could have a profound effect on Arconic, formerly part of aluminum giant Alcoa Inc., as the new board will select the company's new chief executive and determine the company's trajectory for years to come. It also could have broader implications for activist investors, who have become ever more aggressive in their pursuit of higher returns.

Elliott launched its Arconic campaign in January, just months after the company's split from Alcoa and a year after it installed three of Elliott's handpicked nominees on the board. The hedge fund im-

mediately called for the ouster of longtime CEO Klaus Kleinfeld, citing the company's lackluster stock performance and missed profit forecasts.

In April, Mr. Kleinfeld resigned from Arconic after sending a vaguely threatening letter to Elliott founder Paul Singer. Yet Elliott pressed ahead with its bid for four board seats, arguing that Arconic's current directors can't be trusted to depart from Mr. Kleinfeld's strategy.

Arconic says it has changed more than nine directors over the past 16 months, including Elliott's three picks in 2016, and argues that the hedge

Please see **VOTE** page B2

## SoftBank, Saudis Launch Tech Fund

Japan's **SoftBank Group** and Saudi Arabia's sovereign-wealth fund on Saturday launched the world's largest technology fund, a nearly \$100 billion vehicle that will steer capital to cutting-edge technologies in U.S. startups and other global firms.

By Margherita Stancati  
in Riyadh,  
Mayumi Negishi in Tokyo  
and Nicolas Parasie  
in Dubai

In a statement, SoftBank said the fund secured \$93 billion of committed capital. The so-called SoftBank Vision Fund is targeting a total of \$100 billion within six months. The fund's creation coincides with U.S. President Donald Trump's two-day visit to Saudi Arabia, where he is attempting to cement ties with a key counter-terrorism ally and drum up business for American firms.

SoftBank Chief Executive Masayoshi Son has previously promised Mr. Trump that he would invest \$50 billion of the fund into U.S. startups and create 50,000 jobs. Mr. Trump cited this as evidence of his presidency bringing jobs back home.

SoftBank said it would invest \$28 billion in the fund, including \$8.2 billion worth of its stake in chip architecture firm ARM Holdings Inc. SoftBank's announcement on Saturday didn't specify the investment of its main partner, Saudi Arabia's **Public Investment Fund**, or PIF. Earlier the PIF said it would invest up to \$45 billion in the fund.

"We can make a lot of new initiatives and make entrepreneurs take off a lot quicker, much bigger," Mr. Son said Saturday on the sidelines of a business forum in Riyadh.

Mr. Son is rushing to invest in key technologies ahead of what he predicts will be a robotic revolution and a rush of investment into areas such as deep learning and robotics. The fund enables SoftBank to invest in emerging technologies as artificial intelligence surpasses human capabilities.

The fund is looking to acquire minority and majority interests in both private and public companies, according to a statement. It would consider not only emerging technology businesses but also more established, multibillion-dollar companies requiring substantial funding, the fund said.

SoftBank has negotiated about a dozen deals for the fund, among them deals to invest \$1.4 billion in Indian mobile-payments startup Paytm and \$1.2 billion in U.S. satellite-internet startup OneWeb Ltd. SoftBank also has led a \$502 million fundraising in U.K. virtual-world startup Improbable and another \$130 million fundraising in Bay Area microbe-designing robot firm Zymagen. All investments of more than \$100 million

Please see **FUND** page B2



LINH LUONG THAI/BLOOMBERG NEWS

Colorful marketing has helped the discount carrier achieve growth and a successful initial public offering since its founding in 2011.

## VietJet Heralds Country's Change

Carrier soars as Communist leaders loosen up on private enterprise; company closes in on rival

BY JAMES HOOKWAY

HO CHI MINH CITY, Vietnam—Budget carrier **VietJet** used to be best known for its rather un-Marxist promotional gimmick of flying bikini-clad models on its airplanes.

"The first time we did it we were fined \$1,000 by the civil aviation authority," said its chief executive and founder, Nguyen Thi Phuong Thao. It was a cheap and fun way of drumming up publicity for new beach destinations, she explained. The company has also sent flash mobs to an airport in Taiwan to perform dance routines to Pharrell Williams's song "Happy" and released music videos featuring ground staff.

In March, Ms. Thao drew attention for a more serious reason: Just a month after the company went public with an initial public offering, her airline passed state-owned behemoth **Vietnam Airlines** in market capitalization, reaching a valuation of over \$1.8 billion. That made her the country's first woman billionaire and turned VietJet into a

bright illustration of Communist-run Vietnam's changing economic DNA.

Vietnam's leaders have moved in recent years to encourage foreign investors and have made it easier for private firms to compete against the state. People with knowledge of the motivation say the idea is to make Vietnam less dependent on China, its giant neighbor to the north.

"Vietnam needs to make itself important to the rest of the world if it wants to avoid being absorbed into China's orbit," said one person familiar with the government's thinking. "And this is how the government is going to do it: through trade and business."

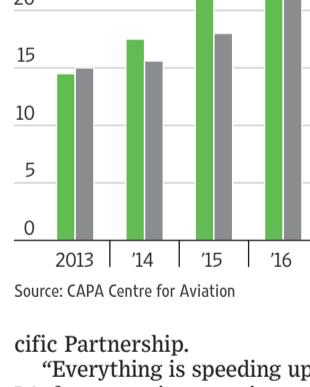
Investment officials have offered a range of tax incentives to lure foreign manufacturers such as Samsung Electronics Co., which makes products in Vietnam and now accounts for a fifth of the country's exports. Vietnam is expanding its network of trading partners—including the European Union—even as the Trump administration has withdrawn from the Trans-Pacific Partnership.

### Taking Off

Air travel has grown steadily in Vietnam, with private-sector upstart VietJet challenging state-owned Vietnam Airlines and its discount-price offshoot, JetStar Pacific.

#### Vietnam's air-passenger traffic

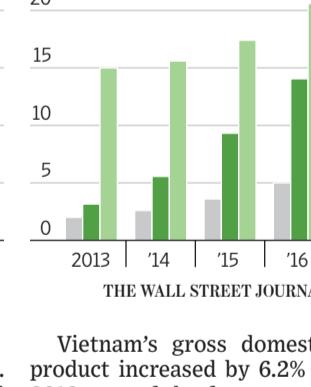
In millions



Source: CAPA Centre for Aviation

#### Air-passenger traffic by airline

In millions



THE WALL STREET JOURNAL.

#### cific Partnership.

"Everything is speeding up. It's faster getting permits and all the other papers we need.

It's becoming like America,"

said Nguyen Trong Nghia, who runs an engineering firm with his two brothers in Ho Chi Minh City.

Vietnam's gross domestic product increased by 6.2% in 2016, one of the fastest rates in the world.

To be sure, progress is slower than some would like. Notably, privatizations of state-run companies have been

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Please see **FUND** page B2

## David Blitzer: the Stock Picker Behind the S&P 500

BY AKANE OTANI



MICHAEL BUCHER/THE WALL STREET JOURNAL

Economist David M. Blitzer

What's behind trillions of dollars of passive funds? A stock picker.

David M. Blitzer leads the committee that determines the makeup of the S&P 500, which aims to include stocks that collectively reflect the U.S. economy. The index is one of the most popular and widely tracked benchmarks in global financial markets.

With more than \$7.8 trillion in funds pegged to the S&P 500, according to **S&P Dow Jones Indices**, any change that shuffles stocks inevitably draws some criticism. Some investors said the committee's

pullback that followed. Last year, S&P and **MSCI** Inc., another index provider S&P works with to decide how sector and index groupings are defined, split off the real-estate sector from financials after the stocks had been popular for a decade.

The silver-haired, bespectacled Mr. Blitzer says decisions aren't arbitrary.

"It's not a bunch of people sitting in a room throwing darts at the wall or flipping coins," said Mr. Blitzer. "When it's a big surprise and one of your colleagues writes, 'I don't know where they got that from,' it doesn't do any good for us," he said. The commit-

tee has published its methodology, which includes considering factors like liquidity, a company's profitability and market capitalization, he adds.

The 68-year-old economist's latest project concerns whether the smallest of the index's 11 sectors, the four-stock telecommunication-services group, should go or stay as a stand-alone sector. Mr. Blitzer,

who is holding discussions with analysts, portfolio managers and fund issuers, says a decision could be made sometime this year. The committee, which includes nine other S&P Dow Jones Indices employees whose identities are kept anonymous, meets monthly to

discuss potential changes.

Telecom has steadily shrunk over the years as companies have merged or spun off businesses, with its share of the S&P 500's market capitalization falling to 2.3% this year, according to S&P Dow Jones Indices, from 8.7% in 1990.

Laszlo Birinyi, founder and president of money-management and research firm Birinyi Associates Inc., says telecom has long been too small to be a useful sector. "During the days of the ticker tapes, we'd sit on the trading floors and know everything going on in the markets. Now you have quants,

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idea didn't get far. "We're a little bit stubborn in the mountains," says General Manager Jan Caddell. "It's kind of like being held up. We thought if we paid, they'd just ask for more."

Security experts believe this particular strain of ransomware has netted criminals at least \$325 million in extorted payments so far, but the real figure could easily be twice that.

The global "WannaCry" ransomware attack that peaked last week, and has affected at least 200,000 computers in 150 countries, as well as the growing threat of Adylkuzz, another new piece of malware, illustrate a basic problem that will only become more pressing as ever more of our systems become connected: The internet wasn't designed with security in mind, and dealing with that reality isn't cheap or easy.

Despite all the money we've spent—Gartner estimates \$81.6 billion on cybersecurity in 2016—things are, on the whole, getting worse, says Chris Bronk, associate director of the Center for In-

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## VOTE

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fund's attempts to nominate four more directors would give too much sway to a single shareholder. The company has told shareholders an Elliott win would embolden activists to go too far, criticizing Elliott's personal attacks on Mr. Kleinfeld.

An Elliott victory, even a partial one, could signal few companies are safe, said Chris Young, a Credit Suisse Group AG banker who advises companies in fights with activists.

Thursday's vote offers a rare chance to gauge the sentiment of big institutional investors, which collectively control enough shares in most big publicly traded U.S. companies to sway the outcome of board fights. Though activists in recent years have targeted ever larger companies, it is rare for such campaigns to go all the way to a vote.

DuPont Co.'s 2015 scuffle with Nelson Peltz's Trian Fund Management LP was the last

major board fight to make it to a vote. The chemical company's shareholders narrowly rejected Mr. Peltz and Trian's other nominees, which was seen as an endorsement of DuPont's strategy for the business. Later that year, Ellen Kullman stepped down as CEO after performance slipped, and the company reached a deal to merge with Dow Chemical Co.

The Arconic vote likely will hinge on Vanguard Group, BlackRock Inc. and State Street Global Advisors, index funds that hold some 20% of the company's stock.

Arconic has insisted that its strategy of working closely with customers to win long-term contracts will lead to greater long-term gains. Elliott, for its part, wants to shake up how the company is run, hoping that will lead to more efficient spending and improve stock gains.

Elliott already has locked up around 20% of the vote.

Arconic, meanwhile, has the support of at least one top-15 shareholder, according to people familiar with the matter.

## FUND

Continued from the prior page  
lion, with the exception of those in ride-hailing firms, will go to the fund, people familiar with the matter have said.

Ahead of the fund's launch on Saturday, Mr. Son said it would focus on investing in sectors including artificial intelligence, smart devices and semiconductors. "We already have lots in the pipeline," he said. "We are investing into genome sequencing. We are investing in virtual-reality simulations, the games, and so on."

The fund marks the entry of a mammoth player in a field of investment traditionally dominated by Western bankers and private equity groups. The sheer scale of the fund could decide winners and losers in capital-intensive areas, such as in autonomous driving or in biotechnology.

It also follows months of negotiation and delay as SoftBank and Saudi Arabia's PIF wrangled over who would control investment decisions. Mr. Son announced the fund in October with a launch as early as December in mind. It took another five months for the fund to come together.

The SoftBank fund is one sign of Saudi Arabia's efforts to diversify its sources of revenue away from oil through investments of its sovereign-wealth fund, the PIF. The

kingdom last year announced its long-term plan for economic change, known as Vision 2030, which is being implemented under the supervision of the king's powerful son, Deputy Crown Prince Mohammed bin Salman.

A central pillar of the Saudi government's vision for economic change is the planned initial public offering of the state-owned energy giant Saudi Arabian Oil Co., or Aramco. The sale of up to 5% of Aramco, expected next year, could raise tens of billions of dollars—possibly more—money the kingdom's revamped sovereign-wealth fund would then use for non-oil investments at home and abroad.

The PIF's managing director Yasir Al Rumayyan said he expects the Vision Fund to help its "role in supporting the Kingdom of Saudi Arabia's Vision 2030 strategy to develop a diversified, knowledge-based economy."

"We are going to help them to achieve that," said Mr. Son, who joined with Prince Mohammed to reach a deal on the technology investment fund. "We are on the same wavelength," he added.

Besides the PIF and SoftBank, the Vision Fund also secured commitments from United Arab Emirates sovereign fund Mubadala Investment Company, Apple Inc., Foxconn Technology Group, Qualcomm Incorporated and Sharp Corporation.

## JET

Continued from the prior page

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investors had hoped. But amid

the changing times, VietJet

has flourished.

Ms. Thao, 46 years old and

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and the government sent her to

study finance and economics in

Moscow. She stayed on after

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commodities between Eastern

Europe and Asia.

She returned to Vietnam in

the early 2000s and began in-

vesting in property develop-

ments on what was then the

sparsely populated south side

of the Saigon River in Ho Chi

Minh City. As the neighbor-

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Ms. Thao generated enough

money to leap into the airline

business. Her initial plan was

to launch a luxury rival to

Vietnam Airlines. "We were

going to be like a JW Marriott

of the skies," she said.

After the global financial cri-

sis struck Vietnam, however,

she began studying low-cost

carriers such as Dallas-based

Southwest Airlines, Ireland's

Ryanair and Malaysia's AirAsia

before launching VietJet in 2011

as a budget airline.

"It was difficult letting go

of everything we had done.

It was like saying goodbye to a

child. But we had to do it if we

wanted to make a profit," Ms.

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At first, VietJet met resis-

## SOFTBANK

Continued from the prior page  
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## INDICES</

## TECHNOLOGY

WSJ.com/Tech

# Uber Threatens to Fire Executive

Anthony Levandowski is at center of legal fight with Google parent Alphabet

BY JACK NICAS

**Uber Technologies** Inc. has threatened to fire Anthony Levandowski, the driverless-car engineer at the center of its legal battle with Google parent **Alphabet Inc.**, if he doesn't comply with a court order to turn over any files he might have.

Uber sent Mr. Levandowski a four-page letter this past Monday saying he must comply with the order issued earlier this month requiring him to return 14,000 allegedly stolen files and provide an extensive accounting of any Uber employees' handling or knowledge of the files.

Mr. Levandowski, a former Alphabet engineer who joined Uber last year to run its driverless-car program, has repeatedly invoked his Fifth Amendment rights in the case, declining to comment and refusing to turn over documents.

U.S. District Judge William Alsup recently ruled that Mr. Levandowski's use of the Fifth Amendment doesn't bar Uber from firing him, and that the company shouldn't "pull any



Anthony Levandowski, in September 2016, is a former Alphabet engineer who joined Uber last year to run its driverless-car program.

punches" in compelling him to present information about the allegedly stolen files.

Waymo, Alphabet's self-driving car unit, sued Uber in February for allegedly conspiring with Mr. Levandowski to steal Waymo files, in an effort to benefit Uber's driverless-car program. A trial for the civil suit is set for October in the U.S. District Court for the Northern District of California in San Francisco.

Earlier this month, Judge

Alsup asked federal prosecutors to investigate Uber and Mr. Levandowski for potential trade-secret theft, which could lead to criminal charges.

Uber's letter to Mr. Levandowski was disclosed in a motion his attorneys filed with the court late Thursday that asks the judge to revise his ruling that Uber could fire Mr. Levandowski for invoking the Fifth Amendment. Mr. Levandowski's attorneys wrote

in Thursday's motion that the judge's ruling earlier this month "can be summarized quite simply: Waive your Fifth Amendment rights...or I will have you fired. The choice is yours, Mr. Levandowski."

The attorneys argued that the judge's order to Uber to force Mr. Levandowski to comply with the ruling or face termination violates decades of court precedent. The attorneys said the judge's order has made Uber believe it

could be held in contempt if it continues to employ Mr. Levandowski while he refuses to cooperate. If the judge agrees with Mr. Levandowski's attorneys and allows him to remain at Uber without cooperating with the judge's order, it could be welcome news for Uber.

Uber and Waymo declined to comment. Attorneys representing Mr. Levandowski didn't respond to a request for comment.

# For WannaCry Victims, a Possible Way Out

BY ROBERT McMILLAN

Victims of the recent global cyberattack might have a sliver of hope in trying to unlock the data lost on their computers.

The "ransomware," called WannaCry, has infected hundreds of thousands of computers since it appeared May 12. On Thursday, French computer-security researcher Adrien Guinet found a way to unscramble the files without

paying the \$300 ransom.

WannaCry scrambles about 30 types of files on infected computers, demanding payment for the secret encryption key that will unlock the files. A fragment of the key gets stored in the computer's memory every time it infects a system. In certain rare conditions, this fragment can be plucked out of the memory and used to retrieve the scrambled files.

By Friday, a second French

computer-security researcher, Benjamin Delpy, built a tool called Wannakiwi that does the heavy lifting of unscrambling the encrypted files. Europol, the European Union's police agency, said Friday its cybercrime center had tested the tool and succeeded in recovering data in some circumstances.

Because the Wannakiwi tool works by grabbing data from the computer's memory, it only will work for a small

number of fortunate users.

If a PC was turned off or rebooted after being infected by WannaCry, the tool won't work since the machine's memory would be wiped, security experts said. Also, if the PC overwrote the key fragment during the normal course of its operations, that would render the tool useless.

In an interview, Mr. Delpy said he had heard of some infected companies "where they were able to decrypt very,

very few computers" using the tool. He suggested, though, victims should consider it an option of last resort.

Vikram Thakur, technical director at computer-security company Symantec Corp., agreed. "People that would be able to successfully use the tool to restore some files from their computers is very low," he said.

—David Gauthier-Villars contributed to this article.

# MIMS

Continued from page B1  
formation Security Research and Education at the University of Houston. "Some individual companies are doing better," adds Dr. Bronk. "But as an entire society, we're not doing better yet."

Ever greater profits from cyberattacks mean cybercriminals have professionalized to the point where they are effectively criminal corporations, says Matthew Gardiner, a cybersecurity strategist for Mimecast, which manages businesses' email in the cloud. Instead of hackers fumbling their way through complicated financial transactions, or money whizzes fumbling their way through malware design, there is true division of labor. As in any other industry, specialization begets efficiency.

Large (legitimate) corporations have the resources to hire talent to protect their digital assets, but for small- and medium-size businesses, it is harder. There is no shortage of good advice on how to perform basic security hygiene, but who's there to implement it? The solution is resource management, with a focus on cybersecurity. Dr. Bronk lays it out like this:

1. Retrain IT staff on security—or replace them. In today's world of ever-multiplying threats and dependence on connected assets, all IT staff must now be cybersecurity staff first. "The good news is that you don't need that dedicated person to run your email server anymore—they can run security," says Dr. Bronk.

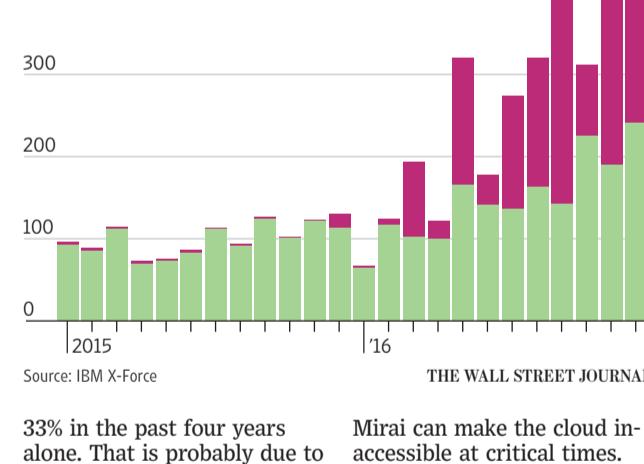
2. Push everything to the cloud. It used to be the job of IT personnel was to build and maintain the tools employees need. Now, pretty much anything can be done better with a cloud-based service. "I mean, even the CIA uses Amazon's web services," says Dr. Bronk. "If there's a best of breed, why not use it? If you want a safe car, go buy a Volvo."

3. New IT investment will need baked-in security. Data from the Bureau of Labor Statistics indicates jobs in IT security are one of the fastest-growing categories in tech, up

## Don't Open That Attachment

The past year has seen a meteoric increase in emails around the globe containing malware, according to a recent IBM Security study.

Change in amount and type of spam email, 1Q 2015 = 100



33% in the past four years alone. That is probably due to companies simply catching up on investing in cybersecurity after years of underinvestment, says Mr. Gardiner.

Diana Kelley, global executive security adviser at IBM Security, a division of International Business Machines Corp., compares the current state of network security to graphical user interfaces in their earliest days, when they weren't particularly intuitive. Collectively designers and engineers learned to prioritize and improve them. "Security can be like that, too," she

**There is no shortage of good advice on how to perform basic security hygiene.**

adds. "We can think about it upfront and weave it into the process in a much more effective way."

The cloud isn't perfect, of course. A hack of electronic-signature company DocuSign, disclosed last week, exposed customer email addresses, allowing attackers to target them with convincing emails that included a malware attachment disguised as a Microsoft Word doc. And then there is the fact that massive denial-of-service attacks like

Mirai can make the cloud inaccessible at critical times.

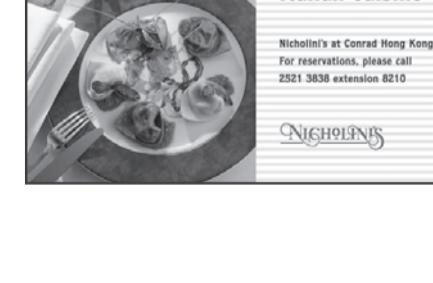
WannaCry is a good example of how increasing cybersecurity can be relatively simple—thwarting it was as simple as keeping Windows up-to-date. On the other hand, it used a sophisticated exploit lifted from a hack of National Security Agency tools that allowed it to spread directly from one computer to another, infecting systems in companies that might have been prepared for other kinds of attacks. These kinds of systemic weaknesses employed by or stolen from governments have led Microsoft to plead for a "Geneva Convention" on cyberweapons.

As for West Jefferson's own WKSK, the station was lucky. Mr. Norris, its IT consultant, had backed up the computers. He was able to wipe the slate clean and get everyone back on the air in a few hours. It is a good illustration of how prioritizing even the most basic cybersecurity practices can be a life-saver.

Since then, he has implemented offline backups of the station's computers, just in case. He's also become a keen student of the kind of attacks, such as WannaCry, that can affect small organizations. As soon as he read that it could hit older systems, he rushed to protect them at his day job—as the IT person for the local school district.

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# LeEco Founder to Exit Post at Video Unit

BY ALYSSA ABKOWITZ

BEIJING—The billionaire founder of Chinese technology and entertainment company LeEco Holdings is stepping down as chief executive of its listed video unit after an investor had called for stronger corporate governance.

Jia Yueting will remain chairman of Leshi Internet Information & Technology Corp., according to a Shenzhen Stock Exchange filing. In addition to video, LeEco has businesses in cloud computing and filmmaking, and it is pushing to build an electric-car business.

Representatives for LeEco didn't immediately respond to requests for comment.

The move comes after investment firm China Bridge Capital, which was Leshi's second-biggest shareholder last year, called for Mr. Jia to slow down LeEco's expansion and allow new management to bring focus back to the firm. China Bridge Capital sold more than 60 million shares in Leshi during the first quarter of this year, according to the company's latest earnings report.

Over the past year, LeEco has been dealing with a cash crunch and a share-trade halt that has forced the company to rethink its business. The company began as a YouTube-like video-streaming site and quickly expanded in multiple directions. LeEco in July last year announced a deal to buy Vizio Inc. of the U.S. for \$2 billion, but it pulled out of the deal in April.

Former Lenovo executive Liang Jun, who is currently president of Leshi, will become chief executive. The filing says Mr. Jia will focus on corporate governance, strategic planning and core production innovation.

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## JOURNAL REPORT | INNOVATIONS IN ENERGY

# Get Ready for Peak Oil Demand



ANDREW RUDAKOV/BLOOMBERG NEWS

There's a growing consensus that the end of ever-rising consumption is in sight. The big question that many oil companies are debating: When? A lot is riding on the answer.

BY LYNN COOK  
AND ELENA CHERNEY

HE WORLD'S LARGEST OIL companies are girding for the biggest shift in energy consumption since the Industrial Revolution: After decades of growth, global demand for oil is poised to peak and fall in the coming years.

New technologies that improve fuel efficiency are starting to push down the amount of gasoline and diesel that's needed for transportation, and a consensus is growing that fuel demand for passenger cars could fall as carbon rules go into effect, electric vehicles gain traction and the internal combustion engine gets re-engineered to be dramatically more efficient. Western countries' growth used to move in lockstep with their energy consumption, but that phenomenon is starting to decouple in advanced economies.

While most big oil companies foresee a day when the world will need less crude, timing when that peak in oil demand will materialize is one of the hottest flashpoints for controversy within the industry. It's tough to predict because changes to oil demand will hinge on future disruptive technologies, such as batteries in electric cars that will allow drivers to travel for hundreds of miles on a single charge.

### Much to consider

Hitting such a plateau would mark the first time that demand has declined even when economies are growing since Col. Edwin Drake jury-rigged a pipe to drill for oil in Pennsylvania in the late 1850s. Yet, for many companies and investors, the question isn't whether this immense turning point will happen—it's when.

Getting that timing right will separate the winners from the losers, and has become a major preoccupation for en-

ergy economists and a flashpoint for controversy within the industry.

Forecasts for peak oil demand diverge by decades. The Paris-based International Energy Agency argues that demand will grow, albeit slowly, past 2040. And the two biggest U.S. oil companies, Exxon Mobil Corp. and Chevron Corp., say peak demand isn't in sight.

But some big European producers predict that a peak could emerge as soon as 2025 or 2030, and they are overhauling their long-term investment plans to diversify away from crude oil. Royal Dutch Shell PLC and Norway's Statoil SA are placing bigger bets on natural gas and renewables, including wind and solar.

"Nobody knows" when demand will peak, says Spencer Dale, group chief economist for BP PLC, which issues a widely watched annual outlook. The company's base case calls for a peak in the mid-2040s—with the caveat that it could come sooner or later. "There are huge bands of uncertainty around that," Mr. Dale says.

The uncertainty stems from a host of variables, including the pace of technological change that will make renewables and electric cars more cost-competitive; the toughness of new regulations to curb greenhouse-gas emissions; and the rate of economic growth in developing countries, which is currently driving the rise in oil demand.

Those factors make it much harder to predict long-term demand than in the past, many energy-industry executives and economists say.

Calling it accurately is high stakes for an industry sitting on trillions of dollars of oil reserves. Whenever it finally does happen, the tipping point from global oil-demand growth to decline will reverberate through the energy world, knocking down oil prices and some companies' shareholders.

The idea that electric cars

### Peak Predictions

When big oil companies and the International Energy Agency expect global oil demand to peak. For more detail on forecasts, go to [WSJ.com/EnergyReport](http://WSJ.com/EnergyReport).

**BP**  
In the 2040s

**Chevron**  
Doesn't foresee a peak

**Exxon Mobil**  
Doesn't foresee a peak

**Royal Dutch Shell**  
2025-30

**Statoil**  
2030

**Total**  
As soon as 2040

**International Energy Agency**  
After 2040

Sources: IEA and the companies

THE WALL STREET JOURNAL.

and alternative forms of energy will increasingly displace oil is one that big-name investors are starting to ask about. "We have lots of clients in the financial sector asking about peak demand," says Linda Giesecke, research director at Wood Mackenzie, an energy consulting firm. "It's because you have this threat of disruptive technology" such as electric vehicles, she says. "If it is disruptive, it will come fast. That's why it's so hard to forecast."

Case in point: Shareholders of Occidental Petroleum Corp. voted this month to ask the company to assess long-term impacts of climate change on its business. It was the first time such a proposal passed at a major U.S. oil-and-gas company. BlackRock Inc., the world's largest asset manager, supported the resolution, marking the first time it went against management to support such a climate resolution.

Historically, producing crude oil has been a growth industry, and alternative forms of energy will increasingly displace oil is one that big-name investors are starting to ask about. "We have lots of clients in the financial sector asking about peak demand," says Linda Giesecke, research director at Wood Mackenzie, an energy consulting firm. "It's because you have this threat of disruptive technology" such as electric vehicles, she says. "If it is disruptive, it will come fast. That's why it's so hard to forecast."

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Heizmann, said his company was launching an "SUV offensive," with several new models being readied for China.

China's newfound taste for big cars that gulp gasoline may mark a temporary reprieve for a domestic petroleum industry that has struggled with the decline in crude-oil prices in recent years. Surging SUV demand will help propel oil consumption in China upward for at least the next decade, according to energy experts and estimates from state-owned China National Petroleum Corp., more than offsetting the impact of the rise of electric vehicles and hybrids.

"We don't think [electric cars] will be any risk to the gasoline demand in the next five to 10 years," says Nelson Wang, a China oil analyst at Hong Kong-based investment firm CLSA.

The popularity of inefficient cars helps account for China's recent growth in oil imports. In March the country imported a record 9.2 million barrels of

if a cyclical one, with energy demand moving in step with economic output. Since 1965, global oil consumption has increased from 30 million barrels a day to nearly 95 million.

During those decades, companies built strategic plans around the assumption that they would always need to find more oil, and analysts obsessed over whether there would be enough crude in the ground to fuel growth. When oil hit its high over \$147 a barrel in the summer of 2008, some of the run-up was fueled by concern about hitting maximum output, or so-called peak oil, the point at which normal declines in output from producing oil fields outpace the industry's ability to develop new supply.

### New perspective

Now, peak-oil theory has been turned on its head, and forecasting peak demand has taken center stage.

Some companies, particularly European energy outfits, see the tipping point coming soon enough that they are talking about it publicly, and overhauling their long-term investment plans to accommodate a greater emphasis on natural gas and renewables. Shell and Statoil say peak oil demand could come as soon as the mid-2020s, though around 2030 is more likely; the chief executive officer of France's Total SA says he wouldn't be surprised if it happens by 2040.

But the American companies are betting on a more bullish future. Exxon Mobil, the largest U.S. oil company, sees no end to the world's need for more crude. In its forecast through 2040, Exxon predicts that oil will remain the dominant fuel source, as demand for both plastics and transportation grows, mostly because of increasing incomes across Asia. It does expect to see huge strides made in fuel efficiency, with the vehicle fleet improving to 50 miles a

gallon from the current 30 MPG, but thinks the growth in other areas will have a bigger influence on oil use.

Chevron's outlook is similar: It expects roughly half the world's energy needs will be met by oil and natural gas combined by 2040. Saudi Arabia's national oil company, Saudi Arabian Oil Co., says demand is unlikely to peak before 2050.

"The peak-demand discussion is only at most a couple of years old," says energy scholar Daniel Yergin, vice chairman of energy research at IHS Markit Ltd. But as peak demand has started to gain acceptance, "there has been a backlash against the idea," especially by American companies.

For the industry and many analysts, the concept of peak demand turns all their long-held assumptions about the energy world on their ear, Mr. Yergin says. Until recently, many were betting on strong demand growth from emerging markets as more people joined the middle class, he says. "There was just this assumption that all those people were going to keep buying cars and driving more miles."

Peak oil demand was one of the most hotly debated topics at the recent CERAWeek energy conference sponsored by IHS Markit in Houston. The CEOs of Shell and Statoil shared their predictions of a peak within 15 years. Weeks later, at an event at Columbia University, the president and chief executive of Saudi Aramco, Amin Nasser, disputed that view. "Our belief is peak demand isn't in sight," he told the audience.

### The electric question

To predict how demand is likely to grow—or, eventually, shrink—companies are paying close attention to what most view as the momentum around the world behind regulations to limit greenhouse-gas emissions and combat rising temperatures.

Those measures include the adoption of higher prices on carbon in more-developed and developing countries. Experts see changes coming even in the U.S., where the Trump administration has already rolled back many Obama-era climate initiatives and hasn't come out in support of the global climate-change accord struck in Paris in 2015. Efficiency gains and technological advances are seen as likely to further limit growth in cars' demand for gasoline.

Inside energy companies, strategists are building scenarios to consider questions they can't yet answer: Will cars drive themselves? Will governments tax carbon emissions at high enough rates to discourage fossil-fuel use? What kind of transit will a middle-class resident of Mumbai favor in the year 2035? And what kind of battery-technology breakthroughs could affect that choice between now and then?

Outside of efficiency gains, which even peak-demand naysayers acknowledge are coming, the biggest "X" factor is how widespread electric-vehicle adoption will be. Transport fuel accounts for about 50% of the demand for crude oil, with cars accounting for half of

that; that means 25% of total oil demand hinges on autos.

For decades, Americans' love of the open road, which made the country the largest oil user in the world, helped to drive global oil demand. But U.S. cars have gotten more efficient, due in part to government policies that mandate better mileage for every gallon of gasoline and diesel burned. That has slowed demand growth, and played into the oil-price rout of the past couple of years.

Electric vehicles, self-driving cars and ride-sharing stand to further erode gasoline demand. The question is, how fast? That depends on batteries, many say. Battery technology is still too rudimentary, and too expensive, for electric vehicles to take hold en masse. If engineers can't crack the lighter, cheaper, denser battery challenge, then the peak-demand scenario slows.

But if a breakthrough in battery technology puts electric vehicles suddenly on a par with the cost of internal-combustion vehicles, or if carbon taxes in more countries are high enough to weigh on drivers, adoption rates could rise more quickly. That could shave millions more barrels a day off global oil demand.

Varying predictions for electric-vehicle adoption drive a lot of the differences in forecasts. The IEA's main scenario shows oil demand from cars in 2040 remaining close to the 24 million barrels a day that is now consumed. That estimate, says executive director Fatih Birol, is a big reason for the agency's prediction that crude-oil demand is likely to keep growing at least past 2040.

Mr. Birol says that even if EVs gain more traction—and he's doubtful they will until batteries can last for several hundred miles—there's still a lot of transportation with no electric alternative. Half of oil demand for transportation is driven not by passenger cars, but by jets and heavy-duty trucks.

"Asian trucks alone, today, are responsible for one-third of global demand growth," Mr. Birol says. "There's barely any substitute. So even though the automotive sector may go through a transformation, we will still see oil demand grow."

Mr. Birol also says that as oil-demand growth from transportation wanes, the demand for oil in the petrochemical sector—to be used as a feedstock to generate more plastic items, from diapers to lightweight, fuel-efficient car parts—is still expected to increase.

BP, meanwhile, expects the number of electric cars to jump to 100 million by 2035 from one million today—but thinks even that rise will likely shave only one million to 1.5 million barrels a day off oil demand.

"EVs aren't a game changer," says Mr. Dale, the BP group chief economist. (The company's CEO, Bob Dudley, also says the company is gearing its investments toward a lower-carbon future, in part by shifting toward natural gas.)

Wood Mackenzie expects roughly 2% of global oil demand—or two million barrels a day—to be lost to electric vehicles by 2035. Wood Mackenzie doesn't expect oil demand

Please see OIL page B5

## Gas Guzzlers Rule in China

The government's efforts to replace gas-powered cars with electric vehicles are running up against consumers' desire for SUVs

BY TREFOR MOSS  
AND BRIAN SPEGELE

THE CHINESE government's plan to replace gasoline-powered cars with a new generation of electric vehicles has hit an unexpected bump: Chinese consumers' love affair with gas-guzzling sport-utility vehicles.

In a country where 700 people are killed in road accidents every day, according to the World Health Organization, and where most drivers are inexperienced, hefty SUVs have grown wildly popular because they provide a sense of security, says Yale Zhang, managing director of research company Automotive Foresight. A shortage of charging stations also is helping to persuade many buyers to choose SUVs over electric alternatives.

Official targets call for 40% of cars bought in China in 2030 to be pure electric vehicles, or plug-in hybrids. The country already is the world's largest electric-vehicle market.

Roughly half the 700,000 electric cars sold worldwide last year were sold in China.

In all, China will have 30 million electric cars on the road, 9% of the country's total passenger-car fleet, by 2025, Bernstein Research forecasts. While that's likely to eclipse the number of electric cars operating in any other country, China's appetite for electric cars still looks modest alongside the craze for SUVs.

From four million SUVs in 2010, China will have 150 million—45% of its entire passenger-car fleet—by 2025. Bernstein estimates. The sedan has long been king in China, but SUVs will start outselling sedans next year, says Bernstein auto analyst Robin Zhu, and by 2025 SUVs will outnumber sedans nationwide.

SUVs are so popular that one of China's biggest auto firms, Great Wall Motors Co., makes nothing else. Foreign car makers are also joining the frenzy. In April, Volkswagen's China chief executive, Jochem

Heizmann, said his company was launching an "SUV offensive," with several new models being readied for China.

China's newfound taste for big cars that gulp gasoline may mark a temporary reprieve for a domestic petroleum industry that has struggled with the decline in crude-oil prices in recent years. Surging SUV demand will help propel oil consumption in China upward for at least the next decade, according to energy experts and estimates from state-owned China National Petroleum Corp., more than offsetting the impact of the rise of electric vehicles and hybrids.

"We don't think [electric cars] will be any risk to the gasoline demand in the next five to 10 years," says Nelson Wang, a China oil analyst at Hong Kong-based investment firm CLSA.

The popularity of inefficient cars helps account for China's recent growth in oil imports. In March the country imported a record 9.2 million barrels of



Sport-utility vehicles outside a Great Wall Motors plant in Baoding, China. The company makes nothing but SUVs.

ANDY WONG/ASSOCIATED PRESS

drivers like Shanghai resident Wang Yong for breathing room. The 45-year-old, who runs a company trading in consumer goods, says he didn't think much about fuel costs or emissions when he went shopping for a new car at the end of 2016.

Mr. Wang says he considered an electric car from Tesla Inc.—the only electric-car brand he says he would ever consider buying—but worried about the availability of charging stations in Shanghai. In the end, he chose a BMW X5 SUV.

"It's tall, big, spacious and comfortable," says Mr. Wang. The SUV goes about half as far on a gallon of gas as the Volkswagen Jetta, one of the best-selling sedans in China last year. But fuel efficiency doesn't make his list of features he wants in a car. "In terms of design, power, connectivity and high technology, most electric cars can't satisfy my needs," he says.

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# Can OPEC's Grand Coalition Hold?

An agreement with countries outside the cartel is about to be put to the test

BY BENOIT FAUCON

A FEW MINUTES after OPEC declared last November that it would cut production to jolt petroleum prices higher, the oil cartel's president, Mohammed al-Sada of Qatar, faced reporters in Vienna and made a startling admission.

"We wouldn't have an agreement," he said, without the help of 11 countries from outside the cartel that said they, too, would cut their output.

Such is the predicament of the Organization of the Petroleum Exporting Countries in the age of the oil glut. Once able to bring the industrialized world to its knees by turning off its oil flows, the cartel now is less able to affect global oil markets on its own. OPEC officials openly acknowledge they must enlist help from oil-producing countries outside of OPEC to have an impact on global supply and prices.

The grand coalition that OPEC brought together late last year is the cartel's future in a world in which oil traders are more focused on the power of U.S. shale producers and enormous stockpiles of crude.

"What we did is history," says Mohammad Barkindo, OPEC's secretary-general, in an interview. "It's a complete turnaround, a new chapter. Bringing a broad coalition of global producers to agree on supply adjustments...that's the way forward," he says.

Mr. Barkindo launched this new strategy almost immediately after taking office last summer. He and other top OPEC leaders, such as Saudi energy minister Khalid al-Falih, engaged in an unusual level of shuttle diplomacy with heads of state to make the November agreement happen. The six-month deal signed in Vienna, which expires this month, successfully tightened global oil supplies and led to a 20% rise in oil global oil prices.

Still, oil analysts say the strategy is riddled with potential pitfalls and points to an uncertain future for the 57-year-old cartel.

OPEC's ability to sway the market is largely based on its credibility. The group's Arab members made the world take notice in 1973 when its embargo against the West over

support for Israel sent oil prices soaring and resulted in gasoline rationing in the U.S. But over time, the group's reputation as a potent force has suffered as members repeatedly failed to comply with agreements to hold back production. The rise of powerful new oil producers that aren't in OPEC, such as Russia, also has weakened the cartel's credibility as a central authority.

Non-OPEC producers "don't have a history or habit of even pretending to cooperate," says Robert McNally, president of energy consultancy Rapidan Group in Washington, D.C.

Such fissures may become newly apparent at a May 25 meeting in Vienna at which OPEC and non-OPEC producers are expected to discuss a possible extension of the November agreement. Whether an extension can be achieved, and for how long, could depend in part on the degree to which each nation has lived up to the production cuts pledged in the original deal. OPEC members were producing 33 million barrels of oil a day before the cuts; non-OPEC nations party to the deal were pumping about 18 million barrels a day.

Despite its members' shared interest in a stable, healthy oil market, OPEC isn't a group that can make decisions quickly. Its members span three continents and have strong differences in culture and economies. It took almost a year to reach the November accord. When more countries are added to negotiations, it can slow things down, analysts say.

Meanwhile, there are concerns that the non-OPEC participants aren't living up to their pledges. According to the International Energy Agency, about 95% of the total cut agreed to by all participants in the six-month deal had been achieved in March, but the non-OPEC producers have hit only 64% of their target. (Some OPEC members had committed to larger proportional cuts than the nonmembers, and some members cut more than they promised to.)

Representatives of both groups, OPEC and non-OPEC, have met each month since November to assess how each country has performed. But while OPEC members use a

unified set of independent experts to measure their outputs, making it easier to compare reductions, non-OPEC producers tend to measure output using a mix of their own numbers and external data, making it harder for outsiders to assess their efforts. Estimates of Russian output for March, for example, vary by as much as 300,000 barrels a day—an amount equal to the daily cuts that Russia agreed to in November.

OPEC officials say they have little choice but to try to persuade the non-OPEC countries to continue with their agree-



AKOS STILLER/BLOOMBERG NEWS

OPEC's president, Mohammed al-Sada, is navigating the oil glut.

ments. And despite broad skepticism from analysts, OPEC's Mr. Barkindo says there is widespread compliance with the current accord.

Meanwhile, if the world's oversupply of oil doesn't fall back into balance with demand by next year, Mr. Mc-

Nally, the Washington consultant, says he expects OPEC's grand alliance with non-OPEC countries "will fall apart."

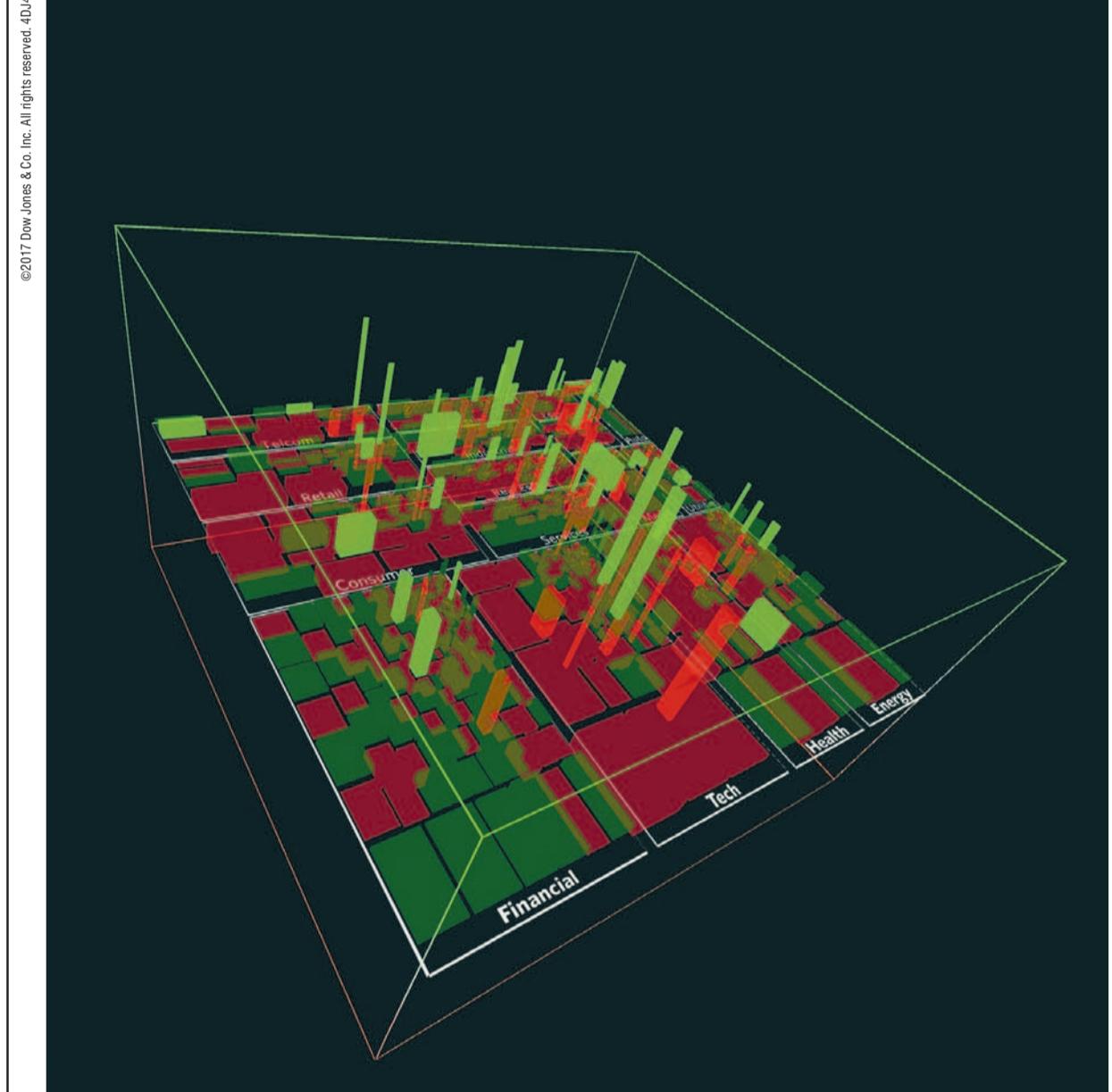
Back in 1960, when the cartel was founded by Iraq, Saudi Arabia, Venezuela, Iran and Kuwait, those members alone controlled more than half of

the world's crude-oil production. Now, even with 13 members, the group controls only about a third of global oil production, including crude and natural-gas liquids, and "has made it clear it would not be able to restore stability on its own," Mr. Barkindo says.

The key cause in this slippage: technological advances that have given energy companies the ability to extract more oil from the ground and get it to market faster.

"OPEC's attempt to regain power via a super-OPEC may be a smart strategic move," says Jamie Webster, an energy analyst fellow at the Center for Global Energy Policy at New York's Columbia University. But, he adds, "it's hardly the recipe for a strong organization that can effectively exert itself through market downs and ups."

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world's population—especially in India, which will emerge to lead global energy-demand growth in the 2020s, taking the mantle from China.

"I'm not talking about people in New York and San Francisco but kids of the current poor people in Calcutta, Chennai and Mumbai," Mr. Wærness says. "They will become global middle-class consumers by 2040."

Consider this jet-fuel math: Seven times as many Chinese are flying now as in 2000, and six times as many Indians, he says. "When they get rich, they'll want to travel to exciting places."

Why, then, does Statoil expect an early peak? The company sees increased demand balanced out by efforts in some developing countries to reduce greenhouse-gas emissions and limit climate change. In China, for instance, the government is subsidizing electric vehicles, and in cities, only EVs are allowed on the road on days when air quality is bad.

Such policies around the world stand to have a major impact on the fuel mix. Globally, carbon intensity and energy intensity have already peaked and will trend down through 2035, according to a Wood Mackenzie analysis. But many analysts say the Paris Agreement to limit global warming is just the beginning. And some companies are starting to plan accordingly.

"To us, it's real," says Statoil's Mr. Sætre. "The future has to be low carbon."

Ms. Cook is deputy chief of The Wall Street Journal's energy bureau, and Ms. Cherney is global editor of the bureau. Email them at [lynn.cook@wsj.com](mailto:lynn.cook@wsj.com) and [elen cherney@wsj.com](mailto:elen cherney@wsj.com).

## Oil

Continued from the prior page to peak by 2035, but the firm does expect the world's fuel mix to significantly change by 2050, with greater reliance on natural gas and renewables.

But others see electric vehicles making significant inroads into oil demand. Statoil Chief Economist Eirik Wærness says expectations of higher electric-vehicle adoption are the main reason that his company's peak-demand forecast of 2030 is earlier than BP's. Statoil has shifted its long-term investment portfolio to reflect its forecast of demand peaking around 2030. The company plans to increase investment in renewables to between 15% and 20% of total investments, CEO Eldar Sætre said recently.

Another crucial variable to consider is the developing world. Any leveling of driver demand for gasoline in rich countries could be offset by growing demand among new middle-class drivers in developing nations.

Part of BP's forecast of a mid-2040s peak rides on continued growth in developing nations. As China, India and other nations get wealthier over the next two decades, another two billion people—about a quarter of the world's population—will move from low to middle incomes. "When that happens, your demand for oil increases," says BP's Mr. Dale. "You stop riding on overcrowded buses and trains, and you buy your first motorbike. And then you buy a car."

To come up with Statoil's 2030 peak-demand forecast, Mr. Wærness, the company's chief economist, says he thinks a lot about what life will be like 20 years from now for much of the

## MARKETS DIGEST

Data as of Friday, May 19, 2017

### Nikkei 225 Index

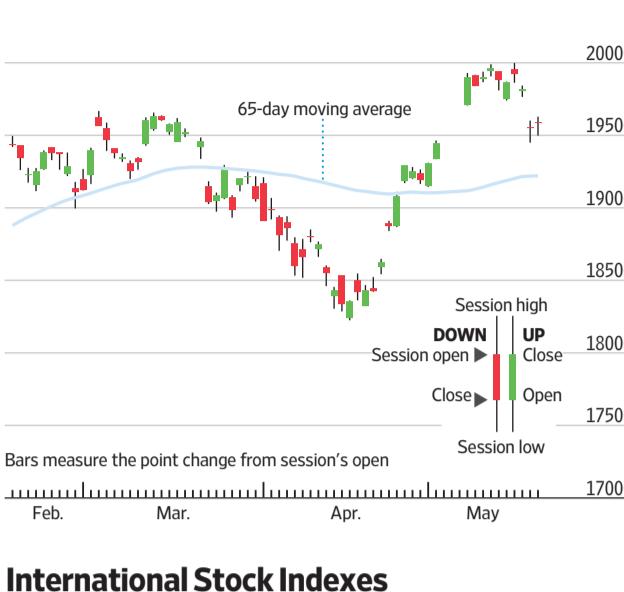
**19590.76** ▲ 36.90, or 0.19%

High, low, open and close for each trading day of the past three months.

Year-to-date  
52-wk high/low  
All-time high

▲ 2.49%

19961.55 14952.02  
38915.87 12/29/89



Bars measure the point change from session's open

Feb. Mar. Apr. May

### STOXX 600 Index

**391.51** ▲ 2.32, or 0.60%

High, low, open and close for each trading day of the past three months.

Year-to-date  
52-wk high/low  
All-time high

▲ 8.33%

396.45 308.75  
414.06 4/15/15



Feb. Mar. Apr. May

### S&P 500 Index

4 p.m. New York time

Last 23.44 23.49

P/E estimate \* 18.41 17.51

Dividend yield 1.98 2.20

All-time high: 2402.32, 05/15/17

**2381.73** ▲ 16.01, or 0.68%

High, low, open and close for each trading day of the past three months.

Trailing P/E ratio

23.44 23.49

P/E estimate \*

18.41 17.51

Dividend yield

1.98 2.20

All-time high: 2402.32, 05/15/17



Feb. Mar. Apr. May

Feb. Mar. Apr. May

### International Stock Indexes

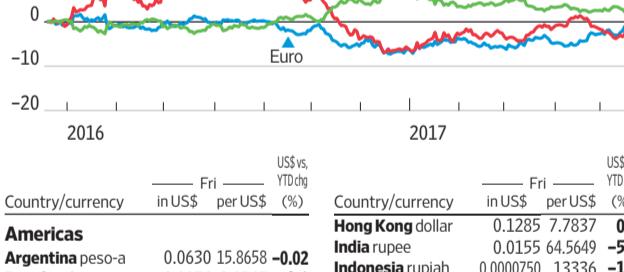
Data as of 4 p.m. New York time

Region/Country	Index	Close	NetChg	% chg	52-Week Range	Low	Close	High	YTD % chg
<b>World</b>	<b>The Global Dow</b>	2748.33	25.37	▲ 0.93	2197.91	● 2767.88	8.6		
	<b>MSCI EAFE</b>	1882.75	14.00	▲ 0.75	1520.94	● 1889.46	11.8		
	<b>MSCI EM USD</b>	995.67	7.29	▲ 0.74	785.26	● 1015.05	15.5		
<b>Americas</b>	<b>DJ Americas</b>	572.09	4.48	▲ 0.79	480.83	● 578.10	5.9		
Brazil	<b>Sao Paulo Bovespa</b>	62639.31	1042.25	▲ 1.69	48471.71	● 69052.03	4.0		
Canada	<b>S&amp;P/TSX Comp</b>	15458.46	181.26	▲ 1.19	13689.79	● 15922.37	1.1		
Mexico	<b>IPC All-Share</b>	49067.47	745.23	▲ 1.54	44282.03	● 49939.47	7.5		
Chile	<b>Santiago IPSA</b>	3661.57	14.24	▲ 0.39	3054.30	● 3782.66	13.6		
<b>U.S.</b>	<b>DJIA</b>	20804.84	141.82	▲ 0.69	17140.24	● 21115.55	5.3		
	<b>Nasdaq Composite</b>	6083.70	28.57	▲ 0.47	4594.44	● 6169.87	13.0		
	<b>S&amp;P 500</b>	2381.73	16.01	▲ 0.68	2000.54	● 2402.32	6.4		
	<b>CBOE Volatility</b>	12.04	-2.62	-17.87	■ -	9.77	●	25.76	-14.2
<b>EMEA</b>	<b>Stoxx Europe 600</b>	391.51	2.32	▲ 0.60	308.75	● 396.45	8.3		
	<b>Stoxx Europe 50</b>	3235.92	15.12	▲ 0.47	2636.71	● 3276.11	7.5		
France	<b>CAC 40</b>	5324.40	34.67	▲ 0.66	3984.72	● 5432.40	9.5		
Germany	<b>DAX</b>	12638.69	48.63	▲ 0.39	9268.66	● 12807.04	10.1		
Israel	<b>Tel Aviv</b>	1412.19	...	Closed	1378.66	●	1478.96	-4.0	
Italy	<b>FTSE MIB</b>	21567.52	268.26	▲ 1.26	15103.58	● 21787.90	12.1		
Netherlands	<b>AEX</b>	526.92	2.40	▲ 0.46	411.62	● 536.26	9.1		
Russia	<b>RTS Index</b>	1087.75	10.95	▲ 1.02	879.55	● 1195.61	-5.6		
Spain	<b>IBEX 35</b>	10835.40	150.50	▲ 1.41	7645.50	● 11135.40	15.9		
Switzerland	<b>Swiss Market</b>	9022.51	84.14	▲ 0.94	7593.20	● 9127.61	9.8		
South Africa	<b>Johannesburg All Share</b>	54427.30	230.18	▲ 0.42	48935.90	● 54474.09	7.5		
Turkey	<b>BIST 100</b>	95147.34	...	Closed	71594.98	● 96194.20	21.8		
U.K.	<b>FTSE 100</b>	7470.71	34.29	▲ 0.46	5923.53	● 7522.03	4.6		
<b>Asia-Pacific</b>	<b>DJ Asia-Pacific TSM</b>	1586.08	1.72	▲ 0.11	1324.15	● 1598.88	11.5		
Australia	<b>S&amp;P/ASX 200</b>	5727.40	-10.90	-0.19	5103.30	● 5956.50	1.1		
China	<b>Shanghai Composite</b>	3090.63	0.49	▲ 0.02	2815.09	● 3288.97	-0.4		
Hong Kong	<b>Hang Seng</b>	25174.87	38.35	▲ 0.15	19809.03	● 25371.59	14.4		
India	<b>S&amp;P BSE Sensex</b>	30464.92	30.13	▲ 0.10	25230.36	● 30658.77	14.4		
Indonesia	<b>Jakarta Composite</b>	5791.88	146.43	▲ 2.59	4710.79	● 5791.88	9.3		
Japan	<b>Nikkei Stock Avg</b>	19590.76	36.90	▲ 0.19	14952.02	● 19961.55	2.5		
Malaysia	<b>Kuala Lumpur Composite</b>	1768.28	1.11	▲ 0.06	1614.90	● 1778.65	7.7		
New Zealand	<b>S&amp;P/NZX 50</b>	7392.11	20.35	▲ 0.28	6664.21	● 7571.11	7.4		
Pakistan	<b>KSE 100</b>	50742.03	-214.57	-0.42	36061.56	● 52387.87	6.1		
Philippines	<b>PSEI</b>	7767.62	9.93	▲ 0.13	6563.67	● 8102.30	13.6		
Singapore	<b>Straits Times</b>	3216.92	-4.74	-0.15	2729.85	● 3271.11	11.7		
South Korea	<b>Kospi</b>	2288.48	1.66	▲ 0.07	1925.24	● 2296.37	12.9		
Taiwan	<b>Weighted</b>	9947.62	-21.83	-0.22	8131.26	● 10036.82	7.5		
Thailand	<b>SET</b>	1549.64	3.76	▲ 0.24	1381.69	● 1591.00	0.4		

Source: SIX Financial Information/WSJ Market Data Group

### Currencies

Yen, euro vs. dollar; dollar vs. major U.S. trading partners



London close on May 19

US\$ vs. Country/currency

Fri in US\$ per US\$ (%)

YTD%  
Country/currency

## FINANCE & MARKETS

# Saudis Wager Big on U.S. Public Works

By RYAN DEZEMBER

Saudi Arabia joined the parade of investors into U.S. public works by pledging a record investment with Blackstone Group LP.

The country's Public Investment Fund agreed to commit \$20 billion to Blackstone's new infrastructure fund in the latest push around the world by large investors to buy up airports, pipelines and other public projects, particularly in the U.S.

Blackstone said Saturday the kingdom's money would seed an investment fund that

the New York private-equity giant hopes will reach \$40 billion and have spending power of as much as \$100 billion once debt is added to the mix.

The commitment shows how Blackstone continues to distance itself from Wall Street rivals by raising ever larger sums from investors such as sovereign-wealth funds, public pensions and rich families. With assets of \$368.2 billion as of March 31, it manages nearly twice as much as its closest competitor, Apollo Global Management LLC, and each of Blackstone's four platforms—real estate,

private-equity, hedge funds and credit—are among the largest investing businesses of their kind.

Saudi Arabia's planned \$20 billion investment alone would be about 25% larger than the biggest infrastructure fund ever raised, a \$15.8 billion pool Global Infrastructure Partners completed earlier this year, according to data from industry tracker Preqin. Global Infrastructure Partners, or GIP, is also based in New York and its chief executive, Adebayo Ogunlesi—like Blackstone Chief Executive Stephen Schwarzman—is one of the

business leaders U.S. President Donald Trump has named to a presidential advisory group.

Last year, investors committed a record of about \$56 billion to private infrastructure funds and fund managers collected a further \$29 billion during the first quarter of this year, according to Preqin. The data provider has said managers of more than 150 other private infrastructure funds are soliciting investors for an additional \$100 billion or so.

Carlyle Group LP and BlackRock Inc. are among other big investment firms that moved recently to beef up their infra-

structure investing businesses.

The Blackstone fund will have a broad mandate to find investments, according to a person familiar with the firm's plans, with the ability to invest in things such as hospitals as well as assets that are more typically considered infrastructure, such as pipelines, roads and utilities. Also, unlike most of the private funds the New York firm manages, which lock up investors' cash for 10 years or so, the infrastructure fund will have no expiration date. That structure gives the firm more time to find investments and reduces the pres-

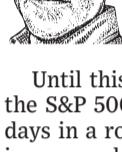
sure to sell them on a deadline.

Both features could help Blackstone circumvent two big issues infrastructure investors have encountered in the U.S.: limited investment opportunities outside the energy sector, and uncertainty over who will eventually buy some assets, such as roads and municipal utilities.

Saturday's pact was announced in Riyadh during Mr. Trump's visit to Saudi Arabia. The president has called boosting private investment in U.S. infrastructure a priority of his presidency.

INTELLIGENT INVESTOR | By Jason Zweig

## Is Buying a Quadruple-Leveraged ETF Crazy?



Volatility is back, but the latest way of trying to make money off it is wildly risky.

Until this past Wednesday, the S&P 500 had gone for 15 days in a row without moving up or down by more than 0.5%, the longest such streak, according to WSJ Market Data Group, since February 1969. Then the index snapped down 1.8% on the political turmoil in Washington.

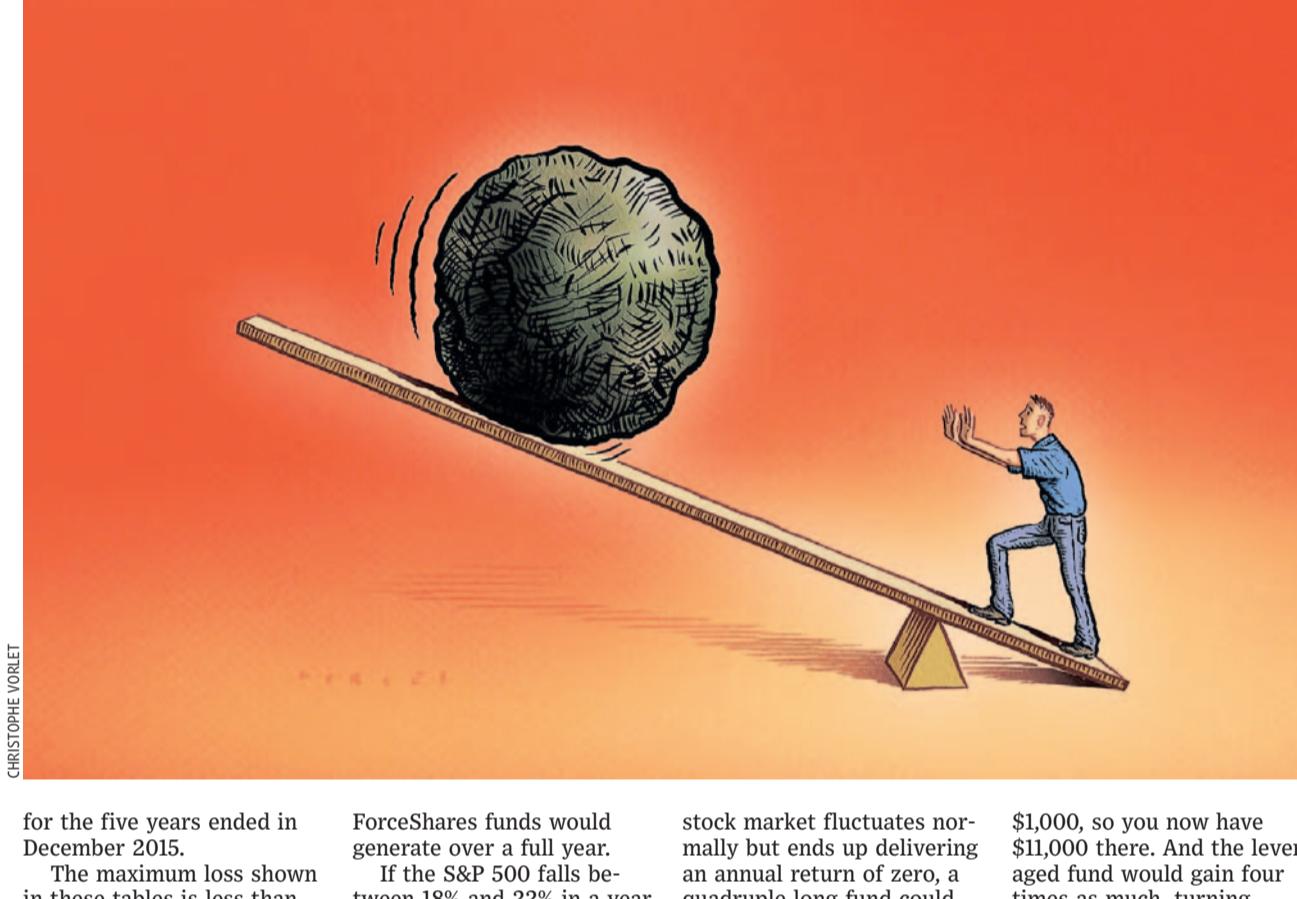
At the same time, the Securities and Exchange Commission is reconsidering its approval of a pair of exchange-traded funds that would seek to quadruple the daily returns on U.S. stocks.

These funds, called ForceShares Daily 4X US Market Futures, come in two versions, each betting on financial contracts whose returns are tied to those of the stock market. The long fund seeks to deliver four times the daily performance of those futures; the short fund, four times the opposite.

Thus, on a day when S&P 500 futures were up 1%, the long fund would gain approximately 4% and the short fund would lose about 4%. On a 1% down day, the long fund would lose roughly 4% and the short fund would gain about the same amount.

How risky is that over time? Not very, if you go by the disclosures in ForceShares' offering document.

There, three tables show how the funds might perform. Remarkably, two of those tables assume that the market doesn't fluctuate at all. A third table assumes that stocks fluctuate at an annual rate of 12.54%, significantly lower than the 14.28% cited elsewhere in the ForceShares document



for the five years ended in December 2015.

The maximum loss shown in these tables is less than 11%, although the prospectus does warn that the funds aren't suitable for long-term holders and "you could incur a partial or total loss of your investment."

Kris Wallace, principal executive officer of ForceShares, declined to comment on any aspect of the filing. A spokeswoman for the SEC also declined to comment.

But markets are rarely as calm as these disclosures imply. William Trainor, a finance professor at East Tennessee State University, has been researching leveraged funds for years. I asked him to estimate the returns the

ForceShares funds would generate over a full year.

If the S&P 500 falls between 18% and 22% in a year, a quadruple long fund would lose an average of about 60% even if stock prices decline in a smoother pattern than the historical average, says Prof. Trainor. If prices bounce around even more sharply on the way down, the fund could lose about 70%. A 4X short fund would produce comparable losses in a similarly rising market, his analysis shows.

That isn't all: These funds can lose money even if the market goes nowhere.

Pauline Shum-Nolan, a finance professor at York University in Toronto, calculates that even in a year when the

stock market fluctuates normally but ends up delivering an annual return of zero, a quadruple long fund could lose 11.4%, and a quadruple short fund 18.4%.

While such funds might be suitable for short-term traders, says Prof. Trainor, "over periods of six months to a year you should expect to have most of your wealth disappear," especially in the quadruple-short variety.

Why do the returns of leveraged ETFs deviate so sharply over longer periods from the performance of their benchmarks?

Say you put \$10,000 in both the S&P 500 and a 4X long fund tied to it. If the market rises 10% today, your S&P investment would gain

\$1,000, so you now have \$11,000 there. And the leveraged fund would gain four times as much, turning \$10,000 into \$14,000.

Now let's assume that the S&P 500 falls 9.1% the next day. Your investment in the index would fall by \$1,000, leaving you with \$10,000, right back where you started. Meanwhile, the 4X fund would quadruple that loss, for a decline of 36.4%. That would knock your \$14,000 down to just over \$8,900. (For simplicity, we're ignoring the effect of fees.)

The longer you hold such a fund and the more stocks fluctuate, the more its returns will differ from a simple quadrupling of the market.

## Winfrey Asset Manager Departs

By JULIET CHUNG



Oprah Winfrey's money manager has stepped down as chief investment officer of her family office to take on that role for another Los Angeles-area billionaire.

Peter Adamson left OW Management LLC for the family office of Eric Smidt, where he was expected to start Monday. Mr. Smidt owns discount-tool retailer Harbor Freight Tools. Representatives for Ms. Winfrey and Mr. Smidt confirmed the move.

Mr. Adamson had led Ms. Winfrey's family office since she set up the group in 2010 to handle her personal investments. The 54-year-old Mr. Adamson will remain con-

tinued, and the SFE position is a really compelling professional opportunity," he wrote in a message to external money managers for OW viewed by The Wall Street Journal. SFE Group is Mr. Smidt's family office.

Ms. Winfrey, 63 years old, has an estimated fortune of \$2.9 billion built on her years hosting a talk show. The media mogul co-owns the OWN cable network with Discovery Communications Inc.

OW won't name a successor as chief investment officer, Ms. Winfrey's representative said, but Renata Erlikhman has been promoted to managing director.

—Sam Goldfarb contributed to this article.

## FINANCE WATCH

### SUGAR

#### China Likely to Raise Its Taxes on Imports

China looks set to raise taxes on imported sugar on Monday, a move that would further batter a commodity that is already one of the worst performers of 2017.

Higher sugar-import taxes would likely further curb shipments to China, the world's largest recipient of the sweetener.

China already levies a 50% tax on all but the first 1.95 million tons of sugar legally arriving into the country. Official imports for the year through Sept. 30 are expected to reach 3.5 million tons.

—Lucy Craymer

### HANG SENG INDEXES

#### Blue-Chip Gauge To Stay the Same

Hong Kong stock-index compiler Hang Seng Indexes Co. said Friday that it has kept the constituents of the benchmark Hang Seng Index unchanged after its latest quarterly review.

The number of stocks in the blue-chip index remained at 50. The compiler also said it won't change the Hang Seng China Enterprises Index, which tracks Chinese firms listed in Hong Kong.

—Joanne Chiu

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FUND NAME GF AT LB DATE CR NAV YTD 12-MO 2-YR

Chartered Asset Management Pte Ltd - Tel No: 65-6835-8866 Fax No: 65-6835-8865, Website: [www.cam.com.sg](http://www.cam.com.sg), Email: [cam@cam.com.sg](mailto:cam@cam.com.sg) CAM-CF Limited OT MUS 05/12 USD 30698.70 1.6 8.1 -3.9

FUND NAME	GF	AT	LB	DATE	CR	NAV	%RETURN-	%RETURN-
VP Class-Q Units	AS	EQ	HKG	05/18 USD		135.76	18.5	33.3 -3.4
VP Class-I Units	AS	EQ	HKG	05/18 USD		171.32	18.5	33.4 -3.6
VP Class-I Units AUD H	AS	EQ	HKG	05/18 AUD		141.44	18.4	33.5 -3.1
VP Class-I Units CAD H	AS	EQ	HKG	05/18 CAD		137.70	18.3	33.6 -3.2
VP Class-I Units HKD H	AS	EQ	HKG	05/18 HKD		116.61	17.9	32.1 NS
VP Class-I Units NZD H	AS	EQ	HKG	05/18 NZD		14.20	17.7	33.2 -2.8
VP Class-I Units RMB H	AS	EQ	CNY	05/18 CNY		11.87	13.9	36.0 NS
VP Class-I Units RMB H	AS	EQ	HKG	05/18 CNY		11.58	20.5	36.4 NS
VP Multi-Asset Fund Cls A HKD H	OT	OT	HKG	05/18 HKD		10.21	6.1	NS NS
VP Multi-Asset Fund Cls A USD	OT	OT	HKG	05/18 USD		10.33	5.7	9.0 NS
VP Taiwan Fund	AS	EQ	CNY	05/18 USD		19.03	13.6	30.3 7.7

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# MARKETS

## Investors Return to Online Lenders

Among recent changes are moves to overhaul lending criteria, shorten loan terms

By PETER RUDEGEAIR

The initial appeal of upstart online lenders was that they would disrupt traditional loan markets. But after big setbacks last year, the firms are adjusting to be a little more Wall Street and a little less Silicon Valley.

Changes include holding on to the risk of some loans they make, securitizing their loans—or selling them in packages—themselves rather than through third parties, and naming veterans of banks and investment firms to executive roles.

Investors in bonds backed by the loans these online platforms helped broker welcomed the moves. Last year, as skepticism mounted about their offerings, these investors pulled back from purchasing their loans. But since the start of April, more than \$2 billion in securities backed by loans made by **LendingClub Corp.**, **Prosper Marketplace Inc.** and their peers have either been sold or are being prepared for an imminent sale, according to credit-rating firms and people familiar with the matter. That is already more than was issued in the entire second quarter of 2016, according to data tracker PeerIQ.

Deals are also getting done at more favorable prices: The extra yield, or spread, investors demanded on recent deals from **Social Finance Inc.** and **Avant Inc.**, above that of safe government debt, was much lower than on similar deals each lender brought last year.

The most recent activity comes on top of \$3 billion in bonds backed by online loans that were issued in the first quarter of 2017, double the amount from the same period



VIVIAN JOHNSON FOR THE WALL STREET JOURNAL

Industry leader LendingClub is among those that are seeing an increase in confidence this year.

a year earlier, according to PeerIQ.

Early last year, confidence in these lenders was rocked by an upsurge in defaults, warnings from bond-rating firms and a scandal that forced out the CEO of industry leader LendingClub. Money managers responded by slowing their purchases of debt issued by these lenders and asked for higher yields.

Since then, online lenders have scrambled to make their credits more attractive to investors. They overhauled their lending criteria, cut off weaker consumers, shortened loan terms and started charging customers more to borrow in an attempt to boost yields.

"It was really important to see there was some kind of a consumer lending background...as opposed to just an algorithm," said Joe Astorina, head of asset-backed securities research at AllianceBernstein Holding LP.

Investors are embracing online lenders' debt offerings for their relative value compared with other debt, the better quality of underlying loans

### Back in Demand

New issuance of bonds backed by loans from online lenders



Source: PeerIQ

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companies would fare better under the new administration. That made the lenders' loan packages more attractive on a comparative basis.

The spread demanded by money managers to hold bonds issued by risky companies above that of safe government debt was 3.84 percentage points on Wednesday, according to data from the Federal Reserve Bank of St. Louis. That is down from 6.40 on the same day in 2016 and down from a high of nearly 10 percentage points in February that year.

"We've gone through one messy incident and rebounded from that," said Perry Rahbar, CEO of dv01, which provides analytics on online loans to bond investors.

Information from a Kroll Bond Rating Agency report on an April securitization from Avant Inc. involving 46,896 loans shows how lending standards have changed in the past year. The average loan backing the deal had a balance of \$5,359 and a term of 37 months, down from \$7,572 and 47 months on an Avant deal

from February 2016. Between those transactions, Avant hired Grant Miles, a former senior executive in the U.S. lending business of HSBC Holdings PLC, to be its chief risk officer.

Those changes helped drive Kroll's base case for losses down to a range of 16.3% to 18.3% of the balance of loans in the pool, from between 19% and 21% on the earlier deal. That means investors buying securities backing the loans could hope they carry less risk.

The spread on the least risky slice of Avant's most recent bond deal was 1 percentage point below what it was on a transaction the company completed in the summer of 2016, according to PeerIQ.

To be sure, bonds backed by online loans account for a fraction of the securitization market. In 2016, a total of \$7.8 billion of bonds backed by online loans were issued, according to PeerIQ. That compared with \$191 billion in total issuance of asset-backed securities, according to S&P Global Ratings.

And while investors have grown more enamored of offerings from online lenders, some bondholders are still smarting from past deals where loss estimates have been revised higher.

The next test of investor appetite for online offerings will be in coming weeks when LendingClub starts to market a roughly \$400 million deal of bonds backed by loans it made to less creditworthy consumers,

according to people familiar with the matter. Last week, a \$450.5 million deal backed by 39,334 Prosper personal loans was oversubscribed, according to a person familiar with the matter. It was the first transaction under Prosper's new Chief Executive David Kimball and new Chief Financial Officer Usama Ashraf, each of whom held senior roles in the finance department of USAA.

## Big Year For Deals Slides Off Top Rung

By STEPHEN GROCER

The year 2007 has reclaimed its title as the biggest year for global deal making.

With \$4.3 trillion in global deals, the year was unseated two years ago by 2015, which ended with \$4.7 trillion in announced deals. But since then, many of those deals have unraveled.

**Anthem Inc.** this month gave up on its two-year, \$55.2 billion bid to acquire **Cigna Corp.** after a Delaware judge denied Anthem's request to force Cigna to move forward. The managed-care companies had sparred over who was at fault.

The withdrawal of the deal dropped the value of acquisitions announced in 2015 to \$4.24 trillion, below 2007's \$4.3 trillion total, according to data provider Dealogic.

With margins stretched and economic growth sluggish, companies began to turn to deal making in 2014 to increase their bottom lines. Some pursued deals that would move them to lower-tax domiciles overseas. Others sought to increase market share through acquisitions.

The value of acquisitions peaked in 2015, when \$5.3 trillion were announced globally, a record. But even before the year ended, many announced deals began to fall apart.

Some transactions ran into government opposition. **Pfizer Inc.** pulled its \$150 billion acquisition of **Allergan PLC**, 2015's biggest announced deal, after the Treasury Department in April 2016 imposed new curbs on so-called inversions that relocated U.S. companies overseas. **Aetna Inc.**'s \$35 billion acquisition of **Humana Inc.** fell apart after running into antitrust roadblocks.

## HEARD ON THE STREET

FINANCIAL ANALYSIS & COMMENTARY

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## Brazil: A Cure for Complacency?

When things are good in emerging markets, they can be really good—that is, of course, until they aren't.

The yield on Brazil's local-currency government bonds shot up 2 percentage points on Thursday after news emerged that a graft probe there is looking at the alleged involvement of President Michel Temer—the country's second major political scandal in recent years. Still, the jump in yields was from lows not seen since before the taper tantrum of 2013. The fact that yields had fallen so far is a prime example of how well emerging-market bonds have been doing. Indeed, they are the best-performing U.S. dollar-denominated asset class in total-return terms so far this year.

No doubt, the stars seemed to have aligned for developing markets. Growth forecasts for many have been upgraded this year, while risks to trade emanating from U.S. President Donald Trump's protectionist threats have faded. Latin American countries have

### Rally on the Rocks

Yields on Brazilian government bonds due 2020



Source: Thomson Reuters

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Protesters in Rio de Janeiro called for elections Friday.

been at the forefront: Regional growth has risen at a three-month annualized rate of 6.5%, according to a tracker compiled by the Institute of International Finance. Just last week, Brazilian government bonds returned 9% over emerging-market benchmark indexes.

Above all, the fear of faster U.S. interest-rate increases, which can typically lure capital away from emerging markets, has abated with rates now ex-

pected to rise gradually. With no risks in sight, investors have been piling in, despite other factors that have unsettled global markets, from Brexit to the U.S. election and the rise of economic nationalism.

In doing so, investors appear to have forgotten to price in any political risk. Brazil isn't the only emerging market now in trouble: Just more than a month ago, South Africa's president fired several ministers, in-

cluding the finance chief, in one stroke, setting off a sharp drop in the currency and a surge in the cost of protection on five-year government bonds.

Such tales are hardly unheard of in emerging markets. Assessing risks based solely on standard financial indicators like a country's debt ratios, foreign reserves, current-account balances and financial needs is clearly not enough.

Bond valuations ought to have set off some alarm bells. When the yield spread, or premium, on emerging-market corporate bonds over U.S. Treasuries is at its lowest level since before the global financial crisis in 2008, investors should be wondering why. After the sell-off, dollar-denominated benchmark Brazilian government bonds are trading at 2.8%—akin to a safe, developed-market corporate bond—and well off their recent highs of 6% in the past year. So much for getting compensated to take risks in emerging markets.

—Anjani Trivedi

### OVERHEARD

**Virtual reality was supposed to be the next big thing, but headsets haven't exactly been flying off the shelves.**

**The question is, why?**

There were \$1.48 billion in VR hardware sales in 2016, according to SuperData Research. That is far from the \$12.65 billion the research firm forecasts for 2020. That estimate has come down, and there is still reason to question whether VR will get there.

In March, digital marketing research firm Thrive Analytics asked the question to internet users who weren't interested in owning a VR headset. The survey, as summarized by eMarketer, showed many of the expected reasons: the headsets were too expensive, lack of virtual-reality content and poor quality of what was out there, and fear of motion sickness.

The biggest chunk, some 53%, said they were "just not interested."

Perhaps actual reality is difficult enough.

## Better Late Than Never In Oil Patch

It seems to have been a field of dreams for providers of services to the oil industry.

At the beginning of 2017, with the price of oil buoyant following a supply cut from the Organization of the Petroleum Exporting Countries, U.S. drilling activity was on a tear. It still is, but analysts and investors got ahead of themselves translating that to service companies' profits. They should consider re-upping that bet now that the sector has sold off 10% to 15% since December.

Analysts polled by FactSet saw Schlumberger earning \$1.92 a share this fiscal year back in December, but recently cut that to \$1.48. Halliburton and Baker Hughes also saw reductions.

Executives are sounding more bullish, though, especially when it comes to U.S. shale. "The ramp-up in North America has become more robust than many had expected," said Martin Craighead, chief executive of Baker Hughes, last month. Halliburton's incoming boss sounded even more upbeat Thursday in an interview with Reuters.

The bonanza is merely delayed. "The expectation coming into the year was that service costs are going up across the board and everyone believed it," says Robert Thummel, a portfolio manager at Tortoise Capital. Now, he says, "it's going to be a second-half story."

Evidence of that is the product most sensitive to shale drilling, fracking sand, which did well in the first half. Earnings estimates for **Hi-Crush Partners** and **Fairmount Santrol Holdings** have surged as those firms have gained pricing power. The rest of the industry isn't far behind. —Spencer Jakab

## What China's Iron-Ore Futures Can, and Can't, Tell Us

"A Dothraki wedding without at least three deaths is considered a dull affair," quips a character in an early episode of HBO's somewhat bloodthirsty show "Game of Thrones." Similarly, a trading day in Chinese commodities is a bit of a snore if prices for the likes of iron-ore or coking-coal futures don't move by at least 3% up or down.

So why do overseas investors pay so much attention to price signals from these still largely closed markets?

In one sense, the answer is obvious: China is the world's biggest consumer of many commodities. Any

moves in the futures markets of Shanghai and Dalian must reflect superior local knowledge, the reasoning goes.

Still, hard information about supply-and-demand conditions for commodities doesn't generally fluctuate enough to justify the casino-like behavior of Chinese markets. Indeed, for iron ore, the verdict of the past six months is quite clear: Chinese futures tend to move in the same direction as global spot prices, but then wildly overshoot. Commodity traders looking for signals for the on-the-day or week-ahead direction of prices in global markets should proba-

bly pay attention. Those taking a longer-term view should be wary.

The relationship between spot and futures prices for iron ore, and Chinese real-estate investment, the factor that really drives commodities demand, helps explain why.

As investment recovered from a 5% year-over-year contraction in late 2015 to more than 10% growth a year later, both iron-ore spot and futures prices followed suit. As that rebound lost steam in early 2017, so did iron ore—or rather the spot price did. It topped out at around \$100 a ton in late

February, but iron-ore futures traded in Dalian kept on merrily rising, eventually peaking around 25% higher. Unsurprisingly the eventual

drop, which captivated global markets, was far steeper than that in international spot markets.

Not all of China's future contracts are as casino-like as iron ore. Steel-rebar futures in Shanghai, which have been around a lot longer, actually line up quite well with global trends.

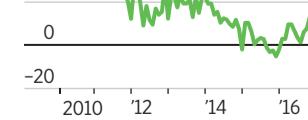
Eventually iron ore may get there as well.

For the time being, investors trying to work out what comes next for China and commodities should continue to watch the fundamentals—and the spot price, which lines up with them quite well.

—Nathaniel Taplin

### Iron Embrace

Chinese real-estate investment, change from a year earlier\*



\*3-month moving average.

Source: CEIC

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February, but iron-ore futures traded in Dalian kept on merrily rising, eventually peaking around 25% higher. Unsurprisingly the eventual