

THE WALL STREET JOURNAL.

DOW JONES | News Corp

WEDNESDAY, SEPTEMBER 13, 2017 ~ VOL. XXXV NO. 158

WSJ.com

EUROPE EDITION

DJIA 22118.86 ▲ 0.28%

NASDAQ 6454.28 ▲ 0.34%

NIKKEI 19776.62 ▲ 1.18%

STOXX 600 381.42 ▲ 0.52%

BRENT 54.27 ▲ 0.80%

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What's News

Business & Finance

The White House maintained a hands-off approach toward regulation of self-driving vehicles in its new guidelines, even amid safety concerns. **A1**

◆ The British pound hit a one-year high against the dollar on expectations for a rate rise after data showed a pickup in inflation. **B1**

◆ Apple unveiled its iPhone X, which comes loaded with a larger display and facial-recognition technology and will cost \$999. **B1, B3**

◆ The U.K. government referred Fox's \$15.5 billion proposal to consolidate ownership of Sky to anti-trust regulators. **B1**

◆ A top Goldman executive detailed \$5 billion in additional revenue that the company could pull in over the next three years. **B5**

◆ Equifax was lobbying U.S. lawmakers and agencies to ease regulations in the months before its massive data breach. **B5**

◆ DowDuPont is altering its plan to splinter into three companies two weeks after its formation. **B2**

◆ Blackstone is readying an IPO or sale of Vivint that could value the smart-home technology company at more than \$3 billion. **B3**

◆ Austria issued a bond that won't be repaid for a century, a first for a euro-zone government. **B5**

◆ A top Microsoft executive in China as been hired by e-commerce firm JD.com. **B3**

World-Wide

◆ The U.S. Treasury threatened additional sanctions on China if Beijing doesn't do more to shut down companies aiding North Korea. **A1**

◆ Hurricane Irma destroyed a quarter of the homes in the Florida Keys and badly damaged many more. Millions remained without power. **A1**

◆ France is carrying out one of its biggest airlifts since World War II to bring aid to the stricken island of St. Martin in Irma's wake. **A4**

◆ Macron faced his first street protests as a far-left union led rallies against the French leader's plans to shake up the labor code. **A3**

◆ Russia has begun military drills ahead of major war games that NATO allies are concerned about. **A3**

◆ Britain pledged to contribute troops and work with the EU to implement foreign sanctions after Brexit. **A3**

◆ China's failure to bring air quality up to global standards is cutting life expectancy by an average of 3½ years, a study found. **A5**

◆ Some of Trump's lawyers concluded that Kushner should step down, citing possible legal complications related to the Russia probe. **A6**

◆ Trump touted Malaysia's deals and investments in the U.S. as he opened a White House meeting with that country's prime minister. **A5**

◆ Bangladesh's premier demanded that Myanmar take back the hundreds of thousands of Rohingya Muslims who fled the country. **A5**

CONTENTS Markets B10
China's World... A2 Opinion A10-11
Crossword A12 Property Report B9
Heard on Street B11 Technology B3
Journal Report B6 U.S. News A6-7
Life & Arts A9,12 Weather A12-5
Management B4 World News A2-5
E3.20; CHF5.50; £2.00;
U.S. Military (EUR) \$2.20

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U.S. Warns China Over North Korea

Treasury officials threaten retaliation if Beijing doesn't do more to isolate Pyongyang

By IAN TALLEY

WASHINGTON—The Trump administration threatened on Tuesday to impose further sanctions on China if Beijing doesn't do more to shut down networks they say are financing North Korean leader Kim Jong Un's regime and weapons programs, including activities sanctioned by the U.N.

Earlier Tuesday, China's Foreign Ministry spokesman Geng Shuang said Beijing strictly enforces all U.N. resolutions.

put additional sanctions on them and prevent them from accessing the U.S. and international dollar system," Treasury Secretary Steven Mnuchin said on Tuesday at a conference.

U.S. officials and U.N. investigators have said China hasn't moved robustly enough to shut down networks they say are financing North Korean leader Kim Jong Un's regime and weapons programs, including activities sanctioned by the U.N.

Earlier Tuesday, China's Foreign Ministry spokesman Geng Shuang said Beijing strictly enforces all U.N. resolutions.

Washington is intent on depriving Pyongyang of all its revenue sources even if it means unilaterally targeting firms in the world's second-largest economy, Treasury's assistant secretary for terror finance Marshall Billingslea said Tuesday in testimony to a House Foreign Affairs subcommittee.

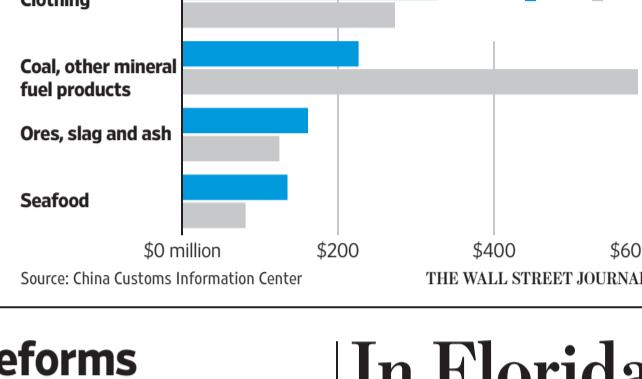
Treasury's recent sanctions targeting a Chinese bank and other Chinese firms were meant to be a "message to

Please see KOREA page A2

◆ China's World: Beijing guides markets with heavy hand... A2

Fabric of Trade

The latest U.N. sanctions on Pyongyang ban trade in textiles, which have overtaken sanctions-hit coal as the top Chinese import from North Korea.



Source: China Customs Information Center

French Protesters Take Aim at Macron's Labor Reforms



DISSENT: Steelworkers in Marseille burn flares during a nationwide day of protest against the government's planned labor laws. **A3**

HIGHFLYING SPACE JUNK GETS MESSY

Growing band of debris imperils the Hubble Space Telescope and equipment used for phones, security

By ROBERT LEE HOTZ

Earlier this year, a single rocket launched from India flung 104 small satellites into space. A second Indian effort in June put another 30 into orbit, each about the size of a coffee can. In July, a Russian rocket scattered 72 more satellites around Earth, like pebbles strewn from a speeding car.

These swarms of small satellites—hard to track and hard to dodge—increase the risk of collision for the world's vital communication, navigation and defense satellites.

Within a few years there might be another 20,000 or so small craft launched into a narrow band of space around Earth, more than 10 times the number of all working satellites in orbit today. The growth is spurred by advances in miniaturization, low-cost electronics and rocketry. Companies, space agencies, universities and even elementary-school students are jockeying for position.

The traffic jam heightens the hazards of junk encircling Earth. The U.S. Air Force tracks 23,000 objects in orbit the size of a baseball or larger—most of it derelict rocket parts, decommissioned

spacecraft or wreckage. Aerospace experts said there may be millions more hazardous splinters too small to track.

At risk are the international space station, the Hubble Space Telescope and hundreds of satellites used for communications, national security, weather forecasting and navigation. The Satellite Industry Association estimates that about \$127 billion in annual revenue from satellite services is vulnerable.

Traveling at orbital speeds up to 17,000 miles an hour, even an aluminum pellet 1-centimeter wide packs the ki-

Please see SPACE page A8

In Florida Keys, 25% Of Homes Destroyed

Hurricane Irma destroyed a quarter of the homes in the Florida Keys and badly damaged many more, federal officials said Tuesday, as millions of people in the nation's Southeast remained without power in the storm's wake.

By Scott Calvert,
Jon Kamp
and Elizabeth Bernstein

"Basically every house in the Keys was impacted in some way or another," Federal Emergency Management Agency Administrator Brock Long said at a news conference. "This is why we ask people to leave."

Meantime, flooding and widespread power outages remained a problem in Jacksonville, Florida's largest city, after the St. Johns River that flows through downtown experienced record levels Monday.

Mayor Lenny Curry said Irma hit the city with a storm surge like a Category 3 hurricane, even though its winds were at tropical-storm level when it reached northeast Florida. More than 350 people had to be rescued, he said. On Tuesday, he lifted an evacuation order but warned returning residents would have to navigate serious flooding and road blockages.

The state of 20.6 million people has begun the difficult task of assessing damage and rebuilding from Irma, which first made landfall in the Keys Sunday morning as a Category 4

Please see IRMA page A6

◆ Macron visits stricken St. Martin, plans storm aid.... A4

Self-Driving Cars Get New Guidance

By MIKE COLIAS
AND MIKE SPECTOR

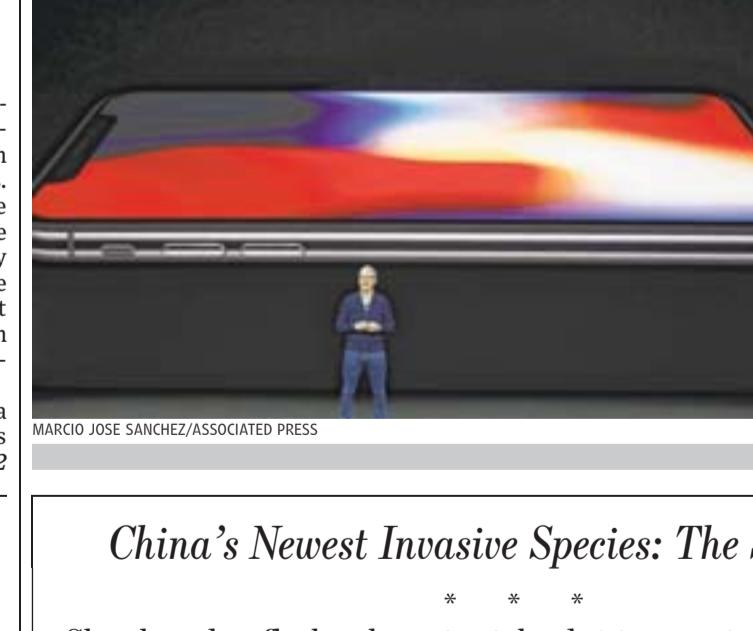
The Trump administration is maintaining a hands-off approach to federal regulation of autonomous vehicles, even amid concern about a car's ability to think for itself in dicey situations.

Transportation Secretary Elaine Chao on Tuesday unveiled a revised set of U.S. guidelines for the growing army of companies developing

robocars, aiming to speed development of autonomous vehicles expected to be safer than those piloted by humans. Ms. Chao said the revisions are aimed at helping coordinate and guide developers as they test on public roads, while making sure the government "does not impede progress with unnecessary or unintended barriers to innovation."

Federal regulators face a tricky juggling act. Many states

Please see RULES page A2



Apple Seeks to Recharge iPhone

REVEALED: Apple is aiming to rejuvenate its signature product with a trio of new handsets, including the new flagship iPhone X, which CEO Tim Cook, left, unveiled at the company's annual product showcase on Tuesday. **B1**

INSIDE



BANNON SAYS HE STILL TALKS TO TRUMP



WHAT TO DO WHEN THE KIDS GO TO COLLEGE

LIFE & ARTS, A9

China's Newest Invasive Species: The Skate Rat

* * *

Skateboarders flock to booming inland cities to enjoy epic shredding

BY WAYNE MA

The first time Blake Carpenter visited Changsha and beheld the gleaming new monuments in a vast public plaza near the Xiang River, his reaction was a bit different than the one China's lordly developers might have hoped for.

"I can't believe [what they've] put into some random plaza nobody's even walking

through," he said.

After sharing his ruminations, the lanky 25-year-old professional skateboarder hopped on his board to attend to a stone stairway, a reflecting pond rimmed with polished marble and a triangular hill with 20-foot granite slopes.

Before his trip was over, he would grind edges, ride ramps and perform ollies, top guns

and 5-0 grinds without a single dirty look from the security guards.

"People go every day in search of these spots," said Mr. Carpenter, who lives in Long Beach, Calif. "Here, it's every inch of the city."

Inside the skateboarding counterculture, there are two holy grails. The first is any outdoor structure made of

Please see SKATE page A8

WORLD NEWS

Beijing Guides Markets With a Heavy Hand



CHINA'S WORLD

By Andrew Browne

XIONGAN, China—The Chinese economy is in a strange kind of limbo.

Take Xiongan, a sleepy rural district south of Beijing that for one giddy moment became the country's hottest stretch of real estate.

Investors converged here after state media this spring

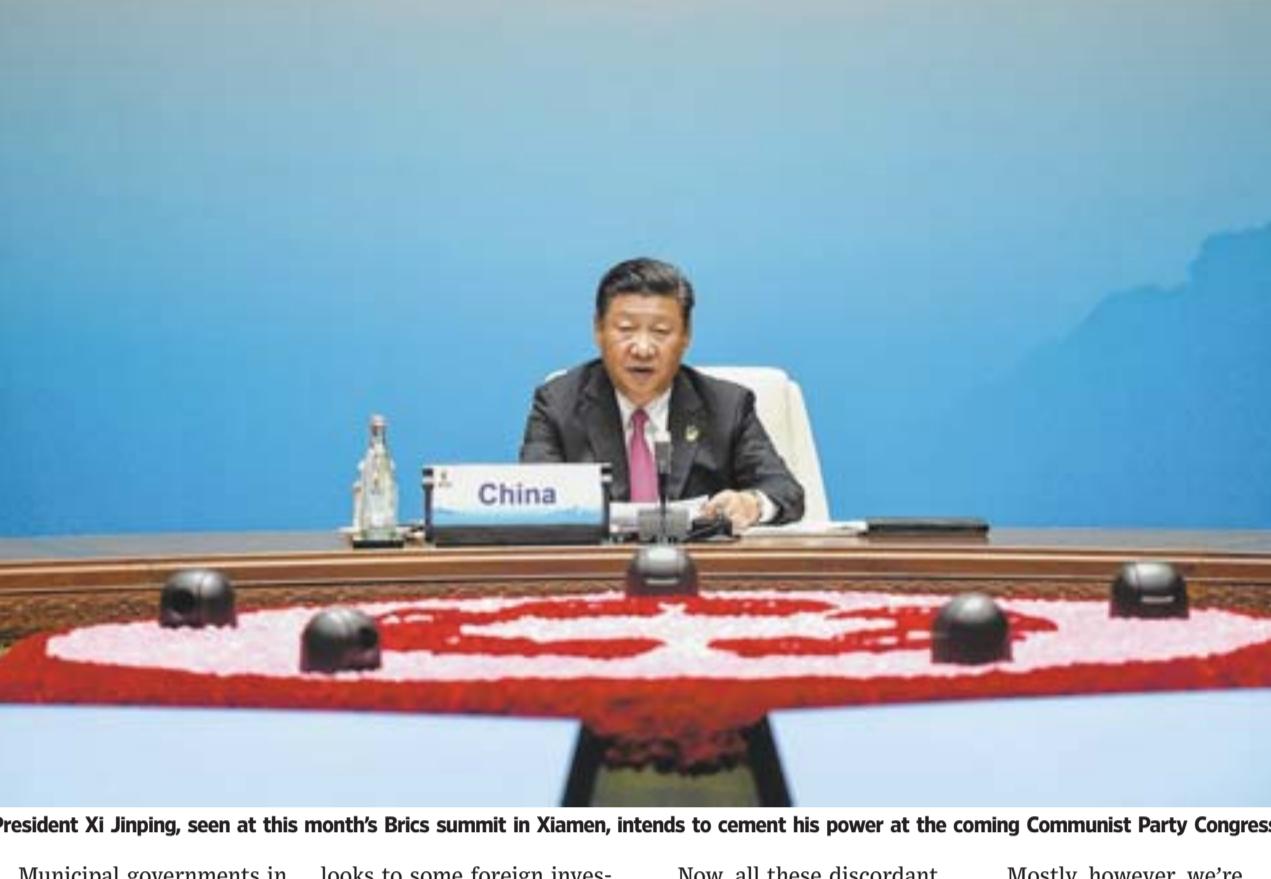
proclaimed that President Xi Jinping had picked it as the location of a new super-city, twice the

area of New York and "crucial for the millennium to come." But when prices tripled overnight, officials froze real-estate transactions rather than see Mr. Xi's model city turn into a speculators' playground.

Today, Xiongan is on hold: Cranes swing idly over the half-finished apartment blocks that dot the landscape, and the gates to newly completed luxury villa complexes are padlocked.

The same concocted calm pervades much of the world's second-largest economy.

In the run-up to next month's 19th Communist Party Congress, where Mr. Xi intends to cement his power for another five years, the government has laid its heavy hand on the country's markets. No turmoil can be allowed to spoil the political pageantry.



FRED DUFOUR/PRESS POOL

President Xi Jinping, seen at this month's Brics summit in Xiamen, intends to cement his power at the coming Communist Party Congress.

Municipal governments in megacities like Shanghai and Beijing have managed to hold down runaway property prices with a web of restrictions on who can buy apartments.

In a recent echo of the Xiongan freeze, regulators have closed China's roaring exchanges for bitcoin, the cryptocurrency that has become another manifestation of the Chinese economy's susceptibility to bubbles.

To stanch a gush of money out of the country, authorities have hauled in for questioning prominent tycoons who have been buying up trophy assets overseas. Capital flight is now under control.

This imposed discipline

looks to some foreign investors like an economic turnaround: The yuan has recouped much of last year's loss; Shanghai stocks are recovering broadly, led by "old-economy" state companies in steel, aluminum and manufacturing; and the Hong Kong-issued bonds of Chinese property conglomerates are red hot.

Just a few months ago, the almost universal belief among Western economists was that the yuan was on a slow grind lower. Many thought that real-estate markets, fed by a mortgage boom, were dangerously frothy and saw state-owned corporate behemoths as drags on the economy, rather than growth drivers.

Now, all these discordant notes seem to have come together in a soothing symphony.

But what, fundamentally, has changed? Mr. Xi has done little in his first term to address the root causes of the economy's imbalances: Growth is still juiced by easy credit despite a mountain of debt. Rather than trim the bloat in state enterprises, the president is bulking them up.

True, global trade has picked up sharply, lifting Chinese exports and boosting industrial profit. And Donald Trump's stalled economic agenda has weighed on the dollar, thereby helping boost the yuan.

Mostly, however, we're witnessing the awesome power of the party to orchestrate the economy, by finesse if possible and diktat when necessary.

Those who think the economy has turned a corner should consider what might happen if the authorities let the yuan find its own level, or allowed capital to leave the country freely or got serious about reducing debt:

almost certainly a run on the currency and a severe jolt to growth.

For optimists, bullish market valuations are justified by expectations that Mr. Xi will leverage his new strength after the congress to overhaul the economy.

Xiongan will be a test. Mr.

KOREA

Continued from Page One
China," Mr. Billingslea said. "We are capable of tracking North Korea's trade in banned goods, such as coal, despite elaborate evasion schemes, and we will act even if the Chinese government will not."

Mr. Billingslea's testimony was the first from a top Trump Treasury sanctions official on Capitol Hill, and the most comprehensive explanation of the administration's North Korea sanctions strategy to date.

It followed Monday's passage by the United Nations Security Council of new sanctions against North Korea—measures that were softened, diplomats said, to win approval from China and Russia, which wield veto power.

The testimony also followed a U.N. report published late last week that identified a host of Chinese firms allegedly facilitating sanctions evasion.

U.S. lawmakers and Trump administration officials have expressed increasing frustration with China's handling of North Korea as its biggest trade partner and financier in the wake of Pyongyang's latest nuclear test, missile launches and threats to U.S. security.

China, sitting on the U.N. Security Council, has backed a steady increase in financial pressure on North Korea, and Monday approved the new U.N. bans on textile exports, a

cap on oil imports and limits on overseas workers. U.N. sanctions already ban coal and other commodity exports from the country, targeting Pyongyang's biggest income streams.

The U.S. had initially asked the Security Council to approve a complete oil embargo and asset and travel freezes targeting the North Korean leader. But China has sought to avoid measures that it believes could provoke the collapse of a fellow socialist regime, drive refugees across its border and bring U.S. troops closer.

China's full and effective enforcement of U.N. sanctions is essential, Mr. Billingslea said. "Unfortunately, I cannot assure the Committee today that we have seen sufficient evidence of China's willingness to truly shut down North Korean revenue flows, expunge the North Korean illicit actors from its banking system, and expel the North Korean middlemen and brokers who are establishing webs of front companies," he said.

He said that if China wishes to avoid future measures, such as those imposed on Bank of Dandong and others, "then it urgently needs to take demonstrable public steps to eliminate North Korea's trade and financial access."

House Foreign Affairs Committee chairman Ed Royce, (R., Calif.), said Washington needs to increase the number of companies and individuals targeted by Treasury under

sought by the U.S. in the latest sanctions could help China retain leverage over Pyongyang.

"China wants to reserve some tools in its kitbox, to be used if North Korea carries out more provocative acts," such as another nuclear test, said Cheng Xiaohe, an associate professor at Renmin University in Beijing.

Susan Thornton, the State Department's top diplomat on Asia, criticized Russia at Tuesday's hearing, saying in her prepared remarks that the U.S. would "use the tools we have at our disposal" if Moscow and Beijing don't improve their implementation of U.N. sanctions.

North Korea relies on oil imports from Russia. Treasury last month sanctioned two Russian-operated firms accused of selling oil to North Korea.

The senior Trump administration officials said further sanctions targeting foreign banks and firms are to come, as the administration maps out North Korea's global trade, finance and shipping networks.

"We intend to deny the regime its last remaining sources of revenue, unless and until it reverses course and denuclearizes," Mr. Billingslea said. "Those who collaborate with them are exposing themselves to enormous jeopardy."

—Felicia Schwartz in Washington and Chun Han Wong and Xiao Xiao in Beijing contributed to this article.

A number of Chinese state-owned banks have been blocking North Koreans from opening new accounts this year, according to bank employees based in cities near the North Korean border.

A China Construction Bank representative said North Koreans have been blocked from withdrawing money, while an employee at Agricultural Bank of China said existing North Korean-owned accounts have been frozen.

For Beijing, stopping short of the tougher measures

RULES

Continued from Page One
are working to enact legislation governing the testing of autonomous cars in the public. The National Highway Traffic Safety Administration, which has broad oversight on several issues affecting automobiles, is trying to avoid a thicket of local rules getting in the way of technological development.

The updates were unveiled at autonomous-vehicle testing grounds in Ann Arbor, Mich., and came on the same day the National Transportation Safety Board said Tesla Inc.'s Autopilot semi-autonomous feature has a hands-on-the-wheel feature that forces drivers to check in; but the safety board found it a poor substitute for measuring driver alertness, such as with eye-tracking devices.

Autonomous-vehicle advocates say humans are largely responsible for an increasing number of deaths taking place on American roadways. A flood of infotainment features are entering vehicle cabins, increasing the likelihood that drivers will be distracted, and drunken drivers continue to cause a substantial portion of traffic fatalities.

The race to develop autonomous vehicles is forcing a clash between conventional auto makers, including General Motors Co., and Silicon Valley tech companies that are increasingly able to engineer cars. Alphabet Inc.'s Waymo unit, for instance, is considered the leader in developing self-driving vehicles and has argued steering wheels and pedals will eventually no longer be needed.

The guidelines published Tuesday primarily affect development of more advanced vehicles that use cruise control or automatic braking as a substitute for human drivers in certain circumstances. Tesla's Autopilot is an example.

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THE WALL STREET JOURNAL.

Europe Edition ISSN 0921-99
The News Building, 1 London Bridge Street,
London, SE1 9GF

Thorold Barker, Editor, Europe
Graeme McCarthy, Senior News Editor, Europe
Cicely K. Dyson, News Editor, Europe
Darren Everson, International Editions Editor

Joseph C. Sternberg, Editorial Page Editor
Anna Foot, Advertising Sales
Jacky Lo, Circulation Sales
Andrew Robinson, Communications

Jonathan Wright,
Global Managing Director & Publisher

Advertising through Dow Jones Advertising
Sales: Hong Kong: 852-2831 2504; Singapore:
65-6415 4300; Tokyo: 81-3 6269-2701;
Frankfurt: 49 69 29725390; London: 44 207
842 9600; Paris: 33 1 40 17 17 01;
New York: 212-659-2176

Printers: France: POP La Courneuve; Germany:
Dogan Media Group/Hürriyet A.S. Branch; Italy:
Qualiprinters s.r.l.; United Kingdom: Newsprinters
(Brockbourne) Limited, Great Cambridge Road,
Waltham Cross, EN8 8DY
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Editor responsible: Thorold Barker M-17936-
2003. Registered address: Avenue de Cortenbergh
60/4F, 1040 Brussels, Belgium

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By phone: +44(0)20 3426 1313

WORLD NEWS

Macron Faces Labor Challenge in France

Far-left union leads strikes and protests against president's pro-business plans

By WILLIAM HOROBIN

PARIS—French President Emmanuel Macron faced his first street protests as a far-left union led strikes and demonstrations against his plans to shake up the labor code.

The CGT union on Tuesday organized almost 200 rallies around the country against laws Mr. Macron plans to sign this month that would reduce financial risks for companies laying people off and make it easier to negotiate working conditions with employees. But, in a favorable early sign for Mr. Macron, the other major unions didn't participate in the demonstrations.

"It is a considerable retreat for worker rights and a generalized destabilization of labor," said Antoine Girard, an unemployed theater worker at a march in Paris.

Thousands of people set out from the city's landmark Bastille column, chanting and shouting. There were no immediate estimates of total numbers from police or the CGT.

The demonstrations are a test for Mr. Macron as he embarks on contentious changes to welfare, taxes and pensions.



IVAN VALAT/REUTERS/EUROPEAN PRESSPHOTO AGENCY

Philippe Martinez, center, leads his CGT union's march. 'This is the first step of a mobilization to make people aware of what's at stake,' he said.

He has said the moves are necessary to address low growth and high unemployment after his predecessors backed away from overhauling worker protections when faced with strikes and protests.

Mr. Macron is hoping he can use success at home to push for broader changes in the eurozone.

The French president is facing slumping polls amid public skepticism of his policies, but

he has notched some victories. Of the five largest unions that officially represent employees in bargaining agreements, only the CGT's leadership has called for strikes. In addition, the CGT hasn't struck an alliance with far-left political groups, which are planning a separate demonstration on Sept. 23.

The 39-year-old leader said the new measures are necessary to encourage companies

to hire by giving them more flexibility to adjust their workforces in difficult times. The proposal would enable small companies to strike deals on pay and conditions with their employees, without having to negotiate with unions. The measures also include a cap on fines for unfair dismissals and a limit on the time workers have to appeal layoffs.

The CGT said the measures will increase joblessness and

instability.

"This is the first step of a mobilization to make people aware of what's at stake," CGT leader Philippe Martinez said of the protests. The CGT has called for more strikes and demonstrations on Sept. 21.

Mr. Macron, meanwhile, was in the Caribbean visiting victims of Hurricane Irma on the island of St. Martin.

The French president hopes to persuade other countries in

the eurozone to put their taxpayers' money into a shared budget to counter economic shocks, but said France must first show it is an asset and not a liability for the currency bloc by addressing its own economic problems.

The French leader has made a series of missteps that have hurt his approval ratings. Surveys show French voters oppose austerity measures and what they see as Mr. Macron's authoritative style, which was blamed for a budget spat with the army in July and the departure of the head of the armed forces.

Last week, the French leader drew fire from rivals when he said he would push through overhauls and cede no ground to "the lazy, cynics and extremists." Mr. Martinez described the remarks as "scandalous." On Monday, Mr. Macron stood by his comments, which he said referred to past governments.

"Those who think we have the luxury to do nothing and remain seated are making a profound error," Mr. Macron said.

The centrist CFDT union—the largest by membership—has said it is disappointed with the plans but won't join the protests. Force Ouvrière, a leftist union that has regularly protested alongside the CGT, also is staying on the sidelines this time.

Russia Holds Drills Ahead of NATO

Russia has begun military drills ahead of major war games that North Atlantic Treaty Organization allies are concerned about but say are helping them better prepare for future tensions.

By Julian E. Barnes in Brussels and Thomas Grove in Tallinn, Estonia

NATO countries have warned that Moscow's military maneuvers in Russia and Belarus, known as Zapad, threaten to trigger an accident or a wider conflict and offer an opportunity for Russia to push more powerful weaponry toward the border.

"We see a very, very large-scale offensive exercise that demonstrates hatred against the West," said Lithuanian President Dalia Grybauskaite, whose country borders Belarus and Russia's Kaliningrad exclave. "It is clear that this will be used to upgrade the military in the region, to upgrade the modernization of the army."

Russia has said the exercise will formally begin on Thursday and run through Sept. 20. But ahead of the official start, Russia announced lower-level training exercises along its western border.

On Tuesday, snap readiness drills were held in Russia's western military district, the Defense Ministry said. The day before, the country's Baltic Fleet carried out training with S-300 and S-400 air defense systems along with Su-24



Russian soldiers took part in an Army Games competition outside Novosibirsk in August.

bombers.

The military didn't say the exercises were connected to the Zapad war games. But NATO officials say Russia has been doing drills since August that are connected to the maneuvers. Lithuania canceled all leave for its troops beginning last month.

The Russian Defense Ministry wasn't immediately available to comment. Separately, Russia also tested its nuclear-capable intercontinental ballistic missile Yars on Tuesday, successfully hitting a target more than 3,000 miles away in the country's far east.

Western officials have said they hope to learn about a range of Russian capabilities, including weaponry designed to make it difficult for NATO

to reinforce forces stationed in the Baltic states.

The Baltics, which have had strained relations with Moscow in recent years, are particularly concerned about Russia's military maneuvers. During World War II the Soviet Union annexed Lithuania, Estonia and Latvia, which only regained their independence in 1990.

The U.S. and other allies positioned a small number of troops in the Baltic states and Poland after Russia's invasion and annexation of the Ukrainian territory of Crimea. Last year, NATO decided to send a larger force of 4,000 troops that began arriving this year to serve as a deterrent to any Russian aggression or military action.

Russia has said only 12,700 troops will participate in Zapad. But Western officials have said Russia is using interconnected and overlapping exercises to hide the true number of forces.

Ms. Grybauskaite predicted that some 100,000 troops will participate in the Zapad exercise. Western officials have made assessments based on rail cars moving equipment into Belarus and other information, they said.

Lithuanian Defense Minister Raimundas Karoblis said the country had prepared for Zapad with a series of training exercises. The ministry canceled all leave for its armed forces in August and September, a ban that will likely be extended into October.

U.K.'s May Wins Vote on Brexit Bill

By JENNY GROSS

LONDON—British Prime Minister Theresa May won a key vote on Brexit legislation, but she faces tough battles ahead in getting Parliament to support her vision for how the U.K. should exit the European Union after more than four decades.

Lawmakers early Tuesday voted 326-290 in favor of a bill designed to transpose more than 10,000 EU laws on to the U.K. statute book. The bill would come into effect on March 29, 2019, the day the U.K. is scheduled to leave the bloc and aims to prevent a legal vacuum thereafter.

However, critics argue the bill hands too much power to the prime minister and her cabinet because it allows them to alter laws without parliamentary approval.

The bill's difficult journey through the early stages of parliamentary scrutiny—normally a formality—signals further hurdles along the line for Mrs. May, who lost her party's majority in an election gamble this summer. While negotiations with the EU over Britain's departure have reached an impasse over issues such as how much the U.K. owes the bloc as part of its divorce, a bigger issue for Mrs. May could be getting a divided Parliament and country behind her negotiating aims.

Mrs. May said the bill gives "certainty and clarity" ahead of Brexit. "Although there is more to do, this decision means we can move on with negotiations with solid foundations and we continue to encourage MPs from all parts of the U.K. to work together in support of this vital piece of legislation," she said.

The vote on the bill is just one step in a longer legislative process. While some lawmakers who supported staying in the EU say they will vote in favor of the bill, they will seek to attach amendments at a later stage that restrict the government's authority to make substantial changes to U.K. law without parliamentary approval, such as watering down to laws protecting workers' rights or environmental standards.

Keir Starmer, the opposition Labour Party's Brexit spokesman, said in an interview with The Wall Street Journal that the government's attempt to weaken the role of lawmakers in the Brexit process had set the stage for a lengthy stand-off between Mrs. May's cabinet and the rest of Parliament.

"This is only the beginning of quite a turbulent two years," Mr. Starmer said ahead of the vote. "There are a num-

ber of shared concerns across the house about the nature of this bill." He said after the vote that Labour would seek to remove the worst aspects of the bill as it passes through Parliament, but its flaws are so fundamental that it was hard to see how the bill could be made fit for purpose.

Brexit Secretary David Davis warned the U.K. would descend into chaos if the bill isn't approved.

"The British people did not vote for confusion and neither should Parliament," Mr. Davis said ahead of the vote.

Mr. Starmer said Labour isn't voting against Brexit, but against the principle that ministers should have the power to modify elements of EU law



SHUTTERSTOCK/EUROPEAN PRESSPHOTO AGENCY
Prime Minister Theresa May

once they are incorporated into U.K. law. These powers are known as Henry VIII clauses, after a 16th-century statute that gave the king power to legislate by proclamation.

"Even if you're a Labour MP that campaigned and voted for leaving the EU, you still think it's right that Parliament has a say over what the withdrawal looks like," Mr. Starmer said. "Whether we're leaving is a closed question, but how we're leaving isn't."

The Labour Party has increased pressure on the Conservatives to pursue a closer relationship with the EU than Mrs. May has outlined. Mr. Starmer said the U.K. shouldn't rule out staying in the EU's customs union indefinitely if trade deals forged outside it won't make Britain better off.

The bill's scope highlights the complexity of leaving the EU, a process that has absorbed most of Parliament's time.

A report by the think tank Institute for Government published Monday said introducing customs checks after Brexit could cost more than £4 billion (\$5.3 billion) a year and that the task would require changes across more than 30 government departments and local authorities.

Britain Pledges Military Might to Europe

By JENNY GROSS

LONDON—Britain pledged Tuesday to contribute troops and to work with the European Union to implement foreign sanctions after Brexit, underscoring how the U.K. sees its military and security contributions as key cards to play in negotiating its exit from the bloc.

As Brexit negotiations hit road blocks over issues like how much Britain will have to pay to leave the EU, the U.K. wants to emphasize that a close economic partnership would mean strong military cooperation in the future.

The U.K. and France provide the bulk of the EU's military, intelligence and foreign policy weight and Britain's exit represents a threat to the EU's international standing.

In a new paper—the latest in a series on how Britain sees its future relationship with the EU—the U.K. government seeks to address a major concern of pro-Brussels law-



A U.K. regiment fresh from foreign deployment on parade in England.

makers: that Britain will be excluded from foreign-policy discussions, including on sanctions, once it leaves the bloc. Its exit is scheduled for March 2019.

The U.K. said Tuesday it wanted closer defense cooperation than any other country with the EU and would use its military and intelligence agencies to combat terrorism and

cybercrime.

Britain has Europe's largest defense budget and the second largest in the North Atlantic Treaty Organization after the U.S. Britain and France are the only EU countries that are permanent members of the United Nations Security Council.

Earlier this year, U.K. Prime Minister Theresa May was criticized by EU politicians after

she said a failure to reach a Brexit agreement would damage cooperation between the U.K. and the EU in countering crime and terrorism.

At the time, Guy Verhofstadt, the EU Parliament's chief negotiator on Brexit, said the European Parliament wouldn't accept any attempt by the U.K. to use its military prowess as a bargaining chip.

One way forward could be to establish a formal body for the

U.K. and the EU to discuss foreign-policy goals, sanctions and security issues to ensure close cooperation. However, the U.K. government didn't spell out on Tuesday how this could work.

EU countries have increasingly used sanctions to carry out foreign-policy aims and Britain has been one of the strongest proponents within the bloc for penalizing Syrian President Bashar al-Assad, as well as Russia over its actions in Ukraine.

—Laurence Norman and Emre Peker in Brussels contributed to this article.

WORLD NEWS

Battle Over Corruption Roils Ukraine

Reformists face attacks, with pressure on finance minister and IMF funding on the line

BY JAMES MARSON

KIEV, Ukraine—A push for overhauls encouraged by Ukraine's Western backers is deepening divisions in the government, including a call by some officials for the dismissal or investigation of the reformist finance minister.

The clash has raised concern in the U.S. and European Union and presents a new challenge for the country's economy, which is recovering from a two-year recession sparked by Russia's annexation of Crimea in 2014 and military interventions in Ukraine's east.

Finance Minister Oleksandr Danylyuk is point man for talks with the International Monetary Fund that are set to continue on Tuesday, and has driven efforts to overhaul state finances and cut official interference in business, steps seen as key in curbing corruption.

An effort by Mr. Danylyuk and others to weaken the state's hand in the economy and overhaul inefficient state sectors has spurred attacks from opponents who accuse him of hindering their work.

"This is not surprising," Mr. Danylyuk said. "We are working to change the old system and the old rules, and quite logically, the system is fighting back."

The general prosecutor, Yuriy Lutsenko, who was appointed by President Petro Poroshenko, told his staff in late August that he had written to the prime minister asking him to fire Mr. Danylyuk, according to Mr. Lutsenko's spokeswoman. Prime Minister Volodymyr Groysman's spokesman didn't respond to a request for comment.

Two other senior officials have publicly called for investigations of Mr. Danylyuk's finances and budget decisions.

Mr. Danylyuk has denied any wrongdoing and said the multiple allegations he has faced were "distractions, often intentional and aimed to derail."

The finance minister gained a firmer grip on his job recently when the General Prosecutor's Office closed an investigation



and moved to strengthen the finances of the state energy company.

"This is the most-open and transparent government we've had in Ukraine," said Andy Hunter, president of the American Chamber of Commerce in Ukraine. "We want to see more, such as new, noncorrupt courts, privatization of state-owned enterprises and continuation of the IMF program."

As finance minister since April 2016, Mr. Danylyuk, a 42-year-old former McKinsey & Co. consultant and investment-fund head, has led an overhaul of the system for value-added tax refunds, for years a venue for corruption. He has helped draft legislation needed to unlock further IMF loans this fall, and is working to overhaul the state fiscal service by cutting bureaucracy, allowing online submissions and abolishing the tax police.

He is also trying to crimp the budget of the powerful General Prosecutor's Office and reduce the powers of law-enforcement agencies to investigate economic crimes.

Anticorruption activists have accused such agencies of corrupt abuse of their powers. "Every day people come [to me] with stories of raids on business by the Security Service of Ukraine, the Interior Ministry and prosecutors," said Serhiy Leshchenko, a lawmaker and former muckraking journalist. None of the agencies responded to requests for comment.

"Danylyuk is a key anchor in terms of reforms," said Timothy Ash, senior sovereign strategist for emerging markets at Blue-Bay Asset Management in London. "He's likely trodden on a few people's toes."

Some activists and officials who target corruption are also complaining of intimidation. The U.S.-funded Anti-Corruption Action Center, an NGO, said its staff has faced a campaign of harassment, including tax probes and a video portraying a fictional investigation into the finances of its director.

Artem Sytnyk, the head of the government's Anticorruption Bureau, which is tasked with investigating high-level corruption, has complained of pressure on his detectives.

—Ian Talley in Washington contributed to this article.

Finance Minister Oleksandr Danylyuk called allegations against him "distractions, often intentional and aimed to derail" reforms.

into allegations that he had evaded taxes, according to the Finance Ministry.

He began meeting with international investors on Monday with the aim of placing Ukraine's first Eurobond since restructuring around \$15 billion of foreign debt in 2015.

Other reformist officials and anticorruption activists have complained of official pressure—causing unease in the West. The U.S., like the EU, has provided financial support to the Ukraine government when it carried out certain economic and anticorruption overhauls.

Ukraine's Western backers have praised economic and governance changes since a pro-Western government came to power in 2014, but have taken a more critical tone in recent months as progress on overhauls has slowed.

"Ukraine needs to continue moving aggressively to strengthen the rule of law and

to limit the influence of entrenched interests," U.S. Ambassador Marie Yovanovitch said in August.

The IMF, too, has criticized what it says is slow progress on steps needed to open up Ukraine's economy and spur growth. First Deputy Managing Director David Lipton was set to begin a visit to Kiev on Tuesday, amid concerns about whether Ukraine can push ahead with such measures.

The IMF has provided billions of dollars in loans to Ukraine in return for measures to strengthen state finances. Yet calls by the IMF and others for privatizations and creation of a land market have faced resistance from some lawmakers who argue the changes would benefit few people. Long-promised efforts to strengthen rule of law through changes to the judicial system have stalled.

Corruption and economic inequality have fueled two revolu-

Growing Pains

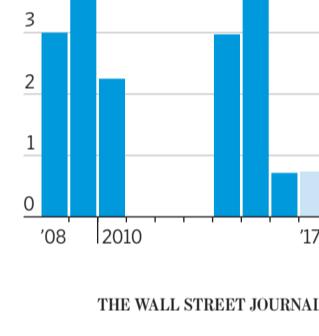
As Ukraine's economy ricochets, officials have clashed over reforms needed to unlock IMF loans. After an earlier loan program lapsed, disbursements under a new program fell last year as reforms slowed.

GDP, change from previous year



*Through July
Note: 1 billion SDRs = \$1.4 billion
Source: International Monetary Fund

IMF disbursements



The president has notched some successes since taking office in 2014 with the country in recession and facing conflict in its east. Ukraine launched its Anticorruption Bureau, started cleaning up its banking system

Macron Visits Stricken St. Martin, Plans Storm Aid

BY SAM SCHECHNER
AND VALENTINA POP

The French government is carrying out one of the country's biggest airlifts since World War II to bring aid to the stricken island of St. Martin in the wake of Hurricane Irma, French President Emmanuel Macron said Tuesday.

Aid missions by air to the islands have already cost €50 million (\$60 million), Mr. Macron told a news conference on a Guadeloupe airport tarmac before flying to St. Martin. As of Monday, the French Interior Ministry said it had supplied 137 tons of food and nearly 500,000 gallons of water to those in need, via planes and boats.

"It's one of the biggest airlifts since the beginning of the second World War," Mr. Macron said.

Mr. Macron acknowledged that the official death toll from the hurricane may grow.

So far 11 are confirmed dead in the French Caribbean territories with "many wounded and missing," the president said.

So far, an estimated 38 people have died in the Caribbean from the hurricane's sweep through the area last

they had already been looted over the weekend. Also, a vast majority of the buildings were damaged, leaving thousands of residents with nowhere to live.

"I've never seen such a thing," King Willem-Alexander of the Netherlands said about the devastation caused by Hurricane Irma on the Dutch side of the island, known as St. Maarten.

"You see people who try to rebuild the island, shoulder to shoulder. But where do you start in such a moment?" he told Dutch news agency ANP during his visit to the island.

Dutch Prime Minister Mark Rutte, who held another emergency meeting on Tuesday in The Hague, said that while aid delivery is well under way, "there is still a great need for food and water" and to provide shelter to people who lost their homes.

"We want to restore vital infrastructure as soon as pos-

Island's Residents Recount Grim Tales

ST. MARTIN—Joseph Richardson and his wife, Sheila, rode out plenty of hurricanes over the decades in their house next to this island's aquamarine waters. None of those storms prepared him for the force of Hurricane Irma.

The sea rammed through his wall, pulling him and his wife into the water. Mr. Richardson reached for Sheila. Neighbors found her body hours later washed ashore.

"I was trying to pull her out, but I couldn't get her," he said. "The sea took everything."

Irma's unprecedented force has traumatized residents across

the island and convinced many that the death toll will rise sharply. The official death toll stood at 13, but many residents know someone who disappeared or died in the storm. Radio stations broadcast lists of missing people throughout the day.

Bernard Chance, an electrician and onetime local politician, said he knows at least three people who tried to ride out the storm on houseboats and then disappeared or drowned.

"It may seem foolish to stay on the boat, but when that's your only possession, you try to protect it," Mr. Chance said.

Close calls abound. After thrashing Sarah Lelouch's wooden house for hours, Irma suddenly went quiet. She and

her 3-year-old daughter were in the eye of the storm. Ms. Lelouch used the lull to leave with her daughter to a neighbor's house, built with concrete walls.

"I saw the door shaking, shaking, shaking, and I said, 'No, we're not staying here,'" Ms. Lelouch said.

Hours later, she walked outside to find her toilet surrounded by rubble. "We're happy to be alive," she said.

Mr. Chance said the previous major hurricane to hit St. Martin—Luis in 1995—left the island complacent.

"I myself was saying, ah, we can handle whatever comes," he said, "but this hurricane was beyond anything."

—Matthew Dalton

week, including 10 in Cuba and five in the British Virgin Islands, both of which were hit hard by Irma's Category 5 winds.

In St. Martin, eyewitnesses said there was still no electricity or running water. Stores were closed, either because they had no food or

sible," Mr. Rutte said, adding that he will also travel to the region soon to discuss reconstruction plans with local officials.

Reports of looting from frightened residents have put French officials on the defensive in recent days—and led them to send some 250 more law enforcement personnel to the islands along with additional army units. Mr. Macron on Tuesday said there are currently 1,900 law enforcement and military personnel providing security on St. Martin alone.

The deployment of soldiers and police over the past few days has put an end to large-scale looting and robberies, the Dutch prosecutor's office of St. Martin said in statement Tuesday.

Four people have died on the Dutch side of St. Martin, although one was from natural causes, said Julia Rademaker, a spokeswoman for the Dutch Ministry of Interior. "We are still looking for bodies under buildings and in the water," she said.

Donations for the island have surpassed €3.2 million, according to the Dutch arm of the Red Cross. The European Union has mobilized €2 million for the Caribbean islands affected by the hurricane, but officials say the amount could

increase once France, the U.K. and the Netherlands ask for more funding for their territories.

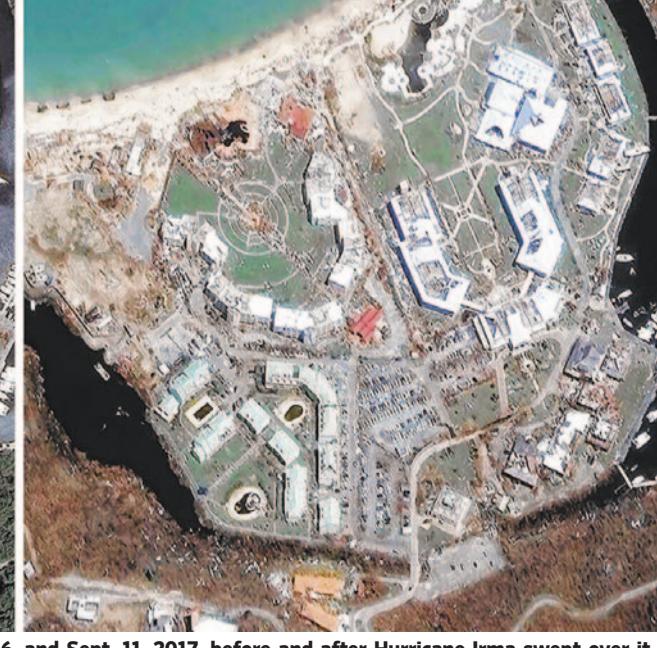
Elsewhere in the Caribbean, residents were taking stock of the damage and bracing for a big decline in tourism, the region's economic lifeblood.

Shiraz Hopkins, a farmer and fisherman in Barbuda who takes tourists on snorkeling and bird-watching tours, said the hotels on the island are badly damaged and the coastline destroyed.

"A lot of the sand is gone; most of the vegetation is gone," said Mr. Hopkins. "It's going to take two years before we can really do any tourism," he said by phone. He said the U.K. government had provided food and water for residents and that many had been evacuated.

Mr. Hopkins said floodwaters had left behind trees, branches and debris in the streets of his village. "It's real bad. Ninety percent of the place is destroyed." His house remained mostly intact, but he lost several of his chickens and sheep.

—Jenny Gross contributed to this article.



DIGITALGLOBE/ASSOCIATED PRESS

Satellite images show Anse Marcel, in St. Martin, on Aug. 25, 2016, and Sept. 11, 2017, before and after Hurricane Irma swept over it.

WORLD NEWS

Trump Plays Up Malaysia Investments

By MICHAEL C. BENDER

WASHINGTON—President Donald Trump touted what he described as a plan by Malaysia Airlines Bhd. to spend between \$10 billion and \$20 billion on Boeing Co. jets and General Electric Co. engines as he opened a White House meeting with Malaysia's prime minister.

Mr. Trump, in a public appearance with Prime Minister Najib Razak, cited the airline deal as a basis for strong ties between the two countries. He also identified Malaysia as a strategic national-security ally in Asia, while playing down the significance of a fresh round of sanctions the United Nations Security Council approved against North Korea on Monday.

Mr. Trump also praised Malaysia as a significant investor

in U.S. securities, saying American markets have been hitting records "on almost a weekly basis" during his presidency.

"I congratulate you on those investments," Mr. Trump said during a brief public appearance with the Malaysian leader.

Mr. Najib's visit comes as the U.S. Department of Justice investigates the alleged looting of 1Malaysia Development Bhd., a Malaysian economic-development fund. The probe threatens to ensnare much of the country's ruling elite, including Mr. Najib.

Mr. Trump didn't mention the investigation during his public appearance with Mr. Najib.

White House press secretary Sarah Sanders said on Monday that the investigation was "apolitical, and certainly independent of anything tak-

ing place" during meetings involving the president.

Instead, the two leaders' were meeting to discuss a "wide range" of regional issues and security concerns, including the halt of the Islamic State extremist group, North Korea's push for nuclear weapons, and territorial disputes in the South China Sea.

Mr. Najib said during the public appearance with Mr. Trump on Tuesday that he was interested in contributing to the U.S. economy.

Malaysia Airlines agreed in 2016 to buy 25 Boeing 737s, with an option to buy another 25, in a deal estimated at \$5.5 billion.

In an apparently new deal unveiled on Tuesday, Malaysia Airlines also will buy eight Boeing 787 Dreamliners, Mr. Najib said, a deal that would be valued at about \$2.2 billion.



After their meeting, President Trump and Prime Minister Najib didn't mention a U.S. probe of Malaysia's 1MDB investment fund.

Mr. Najib on Tuesday said the airline deals would be valued at \$10 billion in five years, or more if the airline executes the option for additional planes.

Mr. Najib also said the Employees Provident Fund, a ma-

jor pension fund in Malaysia, planned to invest \$3 billion to \$4 billion in U.S. infrastructure projects. He said additional investments were planned from Malaysia's state investor Khazanah Nasional Bhd., which he said has an office in Silicon

Valley.

Mr. Najib also didn't mention the Justice Department's 1MDB probe.

He said Malaysia was committed to fighting terrorism and "will also contribute in terms of the ideological warfare because you need to win the hearts and minds," while not specifically commenting on North Korea.

Mr. Trump said Malaysia "does not do business with North Korea" any longer. "We find that to be very important," he said.

The president noted the fresh round of U.N. sanctions against North Korea, but said "those sanctions are nothing compared to what will ultimately have to happen" as reporters were escorted from the room.

—Doug Cameron in Chicago contributed to this article.

China's Smog Takes Years Off Life

By TE-PING CHEN

BEIJING—China's failure to bring air quality up to global standards is shaving years off the lives of its citizens: 3½ years on average, to be precise.

That is according to a new analysis by the Energy Policy Institute at the University of Chicago, which also finds that in northeastern cities like Harbin, which are located in the country's industrial heartland, that figure is as high as 6.9 years.

Greater levels of particulate-matter pollution have been linked to higher risks of heart disease, stroke and lung cancer. "Particulate matter is the greatest environmental risk to human health around the world, and most of the damages are occurring in China and India," said Michael Greenstone, Energy Policy Institute's director.

Chinese Premier Li Keqiang declared a "war on pollution" in 2014, but smog levels remain far in excess of World Health Organization standards, as well as China's own. In 2016, among 338 cities surveyed by



Pollution shrouds the tallest building in Hong Kong, the ICC International Commerce Centre.

the country's Environment Ministry, only 84 met national guidelines on air quality.

The institute's analysis found that if China brought its air quality up to domestic standards, it would extend the life expectancy of its residents by more than a year.

Beijing's war on air pollution has been concentrated in the country's smog-plagued north, where air pollution reliably rises sharply in winter when government-provided free heating gets turned on and coal plants are fired up. A separate study published

Monday in the U.S.-based journal Proceedings of the National Academy of Sciences found that as a consequence of such pollution, people living in northern China live 3.1 years less than those in the south when controlling for other factors.

whelmingly support it.

The noncompulsory ballot, which runs until the end of October, will determine whether Australia becomes the 25th country to legalize same-sex marriage. Despite securing 70% public support in an Ipsos/Fairfax poll on Tuesday, the issue of same-sex marriage had faced a political deadlock, only broken last week when the High Court gave the all-clear for the vote.

—Reuters

GUATEMALA

Beleaguered Leader Gets a Reprieve

Lawmakers voted against lifting President Jimmy Morales' immunity from prosecution, hours after a congressional commission recommended the protection be withdrawn to open the way for a trial on campaign-finance accusations. Congress voted overwhelmingly not to do so. But since the measure failed to meet a threshold of 105 votes for or against needed to settle the matter for good, it now goes into a kind of dormant state and can be reconsidered in another session of congress.

—Associated Press

AUSTRALIA

Postal Vote Begins On Same-Sex Union

Australia launched a postal vote on whether to legalize same-sex marriage as a poll indicated the country would over-

its past two games, fallen four points behind Barcelona already and sparked talk of an attacking crisis. But Ronaldo's ban doesn't apply to European competition. So when he returns for Real's opener against Cypriot club APOEL on Wednesday, all will seem right in the Real universe again. The Champions League is the club's happy place.

"He can't wait," Zidane said of his biggest star. "He's fed up of not playing for us."

As for the rest of Europe, Real's biggest opponents will be the same cast of usual suspects it has wiped the floor with in the past two years. The likes of Bayern Munich, Atlético Madrid, and Juventus aren't significantly improved since last season. Barcelona, under new coach Ernesto Valverde, could easily go backward without Neymar and Paris Saint-Germain has yet to prove it can move forward with Neymar. (The scars of PSG's collapse at Barcelona last season have yet to heal, too.)

Then there are the five English clubs in the competition this year. Their greatest enemy, as ever, is each other and the grueling Premier League schedule, which softens them up long before they get to the business end of the Champions League.

And while all of Real's opponents scrambled to rearm this summer, the Spanish champions tried something new: stability. Over the past two summers, Zidane has spent a total of just \$76 million on new players. For a club that used to blow the GDP of small countries to assemble its superstar lineups, this is downright revolutionary.

Then again, Zidane knows there is no stamp of approval for a squad like winning the Champions League twice.

Real Madrid is Looking Like a Real Dynasty

As the Champions League season kicks off, Real, the first modern-era team to win back-to-back titles, is a favorite to win again

By JOSHUA ROBINSON

No sports dynasty has ever been made by winning a title just twice in a row. But on the field of Cardiff's Principality Stadium last spring, with the Champions League trophy back in its hands, Real Madrid offered a compelling case to the contrary.

Their argument was simple: in the tournament's modern era, no other club had ever won Europe's most prestigious tournament back-to-back. "I didn't think it was possible to defend this title," midfielder Toni Kroos said on the field that night. "It is so difficult to win it once."

Four months later, Real's case for dynasty status hasn't just grown, it has reached a ridiculous new high. As the Champions League kicked off on Tuesday, it not only seemed possible that Real Madrid will defend this title again—it's difficult to imagine any other outcome.

Until Real did it last season, repeating as champions was considered an almost impossible task in the modern game. In the European championship tournament that preceded the Champions League, AC Milan won back-to-back titles in 1989 to 1990; the last three-time winner was Bayern Munich in the mid-1970s.

But those triumphs came long before the billionaire-driven Champions League was born in 1992. The current tournament features a long group stage before proceeding to a knockout round.

When Milan won the 1990 title, for instance, it played just nine games. The modern slog through the final takes nine months and 13 games—more time for things to go wrong, more time for Barcelona or Bayern or Juventus to throw a wrench in the Real works.

And yet, Los Blancos still



FRANK AUGSTEIN/ASSOCIATED PRESS

Real Madrid's Cristiano Ronaldo, right, celebrates after scoring in the Champions League final against Juventus in Cardiff, Wales, in June.

manage historic levels of consistency. They have reached the semifinals in each of the past seven seasons.

Their secret is tricky to pin down. They spend huge amounts on player salaries, but their payroll isn't that much more absurd than any other superclub's. They haven't built a particularly distinctive style of play. And they replace managers like Cristiano Ronaldo changes hairstyles.

But there is one thing about the club that no one else in Europe can match. Over the years, Real Madrid has convinced itself that it isn't just a worthy winner of the Champions League.

Rather, it believes it is the only worthy winner of the

Champions League. That conviction, as much as anything else, has kept Real alive in the competition when most other teams would have folded. In the 2014 final, it found a stoppage-time equalizer to topple Atlético Madrid. In the 2016 final, it survived a penalty shootout to beat Atlético again. And in 2017, Real trailed in five of its six knockout games before the final and won the tournament anyway.

"We're Real Madrid and we always fight until the very end," defender Marcelo said after clinching a spot in last season's final.

That Real's string of semifinal appearances coincides with the Cristiano

Ronaldo era at the club is no coincidence. The team has been built around him since his arrival from Manchester United in 2009 and has molded itself to his evolving game.

What Real has that no one else can match:

It believes it's the only worthy winner.

Now 32 years old, Ronaldo is no longer the full-time playmaker he was earlier in the career. He has simplified things to focus on scoring goals while Real manager

Zinedine Zidane makes sure he has the legs to do so by managing his minutes more carefully. Everyone at Real, of course, is fine with that.

Ronaldo repaid the team's flexibility last season by saving his best performances for the Hollywood occasions. He scored hat tricks against Bayern Munich and Atlético Madrid in the quarters and semis, respectively, before banging in two more goals in the final against Juventus.

This season, Ronaldo has barely featured for Real, due to a five-game domestic suspension for shoving a referee. (Possibly the one thing in soccer that even Ronaldo can't get away with.) Without him, the club has drawn

its past two games, fallen four points behind Barcelona already and sparked talk of an attacking crisis. But Ronaldo's ban doesn't apply to European competition. So when he returns for Real's opener against Cypriot club APOEL on Wednesday, all will seem right in the Real universe again. The Champions League is the club's happy place.

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U.S. NEWS

Trump's Lawyers Wanted Kushner Out

Some aired concerns about possible legal complications tied to Russia election probe

Some of President Donald Trump's lawyers earlier this summer concluded that Jared Kushner should step down as senior White House adviser

By Peter Nicholas,
Rebecca Ballhaus
and Erica Orden

because of possible legal complications related to a probe of Russia's alleged involvement in the 2016 presidential election and aired concerns about him to the president, people familiar with the matter said.

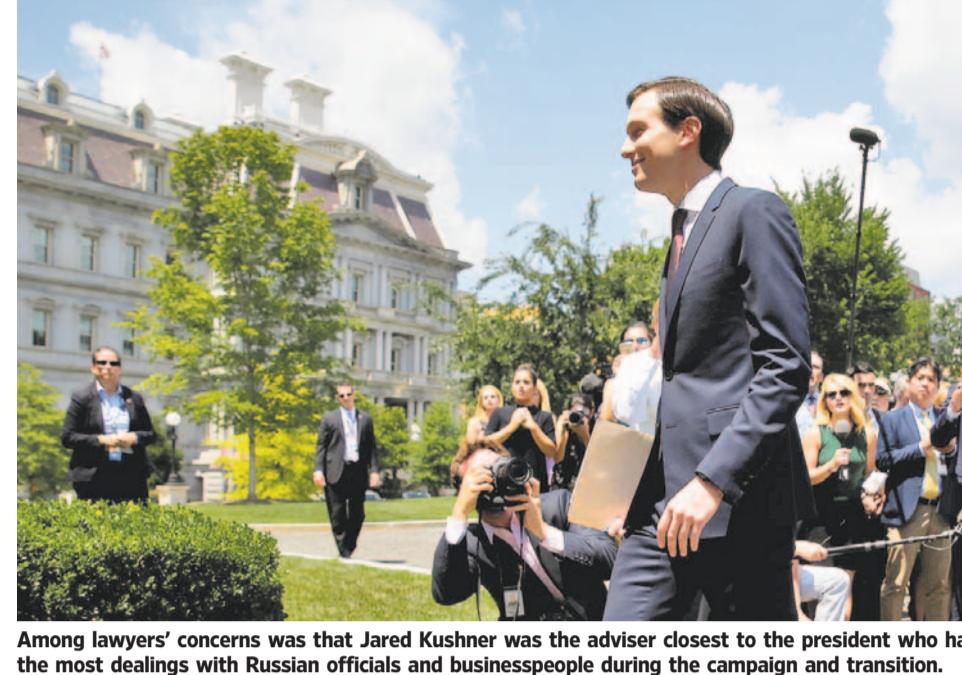
Among their concerns was that Mr. Kushner was the adviser closest to the president who had the most dealings with Russian officials and businesspeople during the campaign and transition, some of which are currently being examined by federal investigators and congressional oversight panels. Mr. Kushner, Mr. Trump's son-in-law and confidant, has said he had four such meetings or interactions.

Another issue was Mr. Kushner's initial omission of any contacts with foreign officials from the form required to obtain a security clearance. He later updated the form several times to include what he has said were more than 100 contacts with foreign officials.

The president's lawyers weren't united in the view that Mr. Kushner should step down.

John Dowd, who first joined the legal team in June and now heads it, said in an interview Monday that "to my knowledge" the proposal wasn't taken to Mr. Trump.

Mr. Dowd also said he didn't side with some of his col-



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leagues who believed Mr. Kushner needed to go. "I didn't agree with that view at all. I thought it was absurd," Mr. Dowd said. "I made my views known." He called Mr. Kushner "absolutely terrific" and "a great asset, real gentleman, a pleasure to work with."

After some members of the legal team aired their concerns to Mr. Trump in June, including in at least one meeting in the White House, press aides to the legal team began to prepare for the possibility that Mr. Kushner would step down, drafting a statement explaining his departure, said people familiar with the matter.

Mr. Trump, a Republican, wasn't persuaded that Mr. Kushner needed to leave. One person said Mr. Trump's view was that Mr. Kushner hadn't done anything wrong and that there was no need for him to step down.

The legal team has been reshuffled since it was first as-

sembled in late May, after the Justice Department appointed Special Counsel Robert Mueller to oversee the federal probe of Russia's alleged interference in the U.S. election. In mid-July, Mr. Dowd took over leadership of the team from Marc Kasowitz, Mr. Trump's longtime attorney.

Mr. Kasowitz in a statement said: "I never discussed with other lawyers for the president that Jared Kushner should step down from his position at the White House, I never recommended to the president that Mr. Kushner should step down from that position and I am not aware that any other lawyers for the president made any such recommendation either."

According to a January report from the U.S. intelligence agencies, the highest levels of the Russian government directed electoral interference. Its tactics included hacking state election systems;

infiltrating and leaking information from political strategists; and disseminating through social media and other outlets negative stories about Democratic nominee Hillary Clinton, the report said.

Mr. Mueller also is investigating whether associates of Mr. Trump colluded with Russia. Mr. Kushner has denied any collusion, as has Mr. Trump. Russia also has denied interfering in the election.

"I did not collude, nor know of anyone else in the campaign who colluded, with any foreign government," Mr. Kushner wrote in a July statement.

Mr. Kushner played a top role in the campaign and oversees a sweeping policy portfolio that includes Middle East peace, China relations and the workings of the federal government. In a measure of the president's loyalty, Mr. Kushner has often prevailed in battles with internal rivals, according to people familiar with

Yellen Met With Ivanka Trump

Federal Reserve Chairwoman Janet Yellen met with Ivanka Trump in July, roughly a week before President Donald Trump said he was considering nominating the central bank chief to a second term.

Ms. Yellen met the president's eldest daughter and senior adviser for a one-hour breakfast July 17 in a room at the central bank, according to the latest release of the Fed leader's monthly calendar, which didn't provide further details.

Mr. Trump told The Wall Street Journal in an interview July 25 that he thought Ms. Yellen was doing a good job and he had "a lot of respect for her." He also said Ms. Yel-

len was in the running to serve a second four-year term as leader of the central bank, after her current term expires in February.

During her time at the White House, Ms. Trump has promoted issues concerning women and children. On June 5, she tweeted about a May 5 speech Ms. Yellen gave at Brown University on female labor participation. In the tweet, Ms. Trump quoted Ms. Yellen's remark that "too many women struggle to combine aspirations for work and family."

Ms. Trump reached out to Ms. Yellen after reading the speech, "as it was about women's participation in the economy" a White House official said in an email Monday.

A Fed spokesman declined to comment on the nature of the July meeting.

—Harriet Torry

U.S., and another one that he held with the head of a Russian-run bank that has faced U.S. sanctions.

Mr. Trump's attorneys were also aware of a meeting that hadn't yet been made public: one at Trump Tower in June 2016 that involved a Russian lawyer with ties to the Kremlin, Mr. Kushner and the president's eldest son, Donald Trump Jr., according to people familiar with the matter.

That meeting became public on July 8. It was organized by Donald Trump Jr. In a series of evolving statements, Donald Trump Jr. initially said the meeting had covered foreign adoptions. He later released emails showing that, before agreeing to the meeting, he had been promised damaging information about Mrs. Clinton, collected as part of a Russian effort to boost his father's campaign.

Both Parties Turn to Lawyer Lowell

By DEL QUENTIN WILBER

NEWARK, N.J.—Washington lawyer Abbe Lowell has represented high-profile clients on both sides of the political spectrum—a Republican governor, a conservative super-lobbyist and a former Democratic vice-presidential nominee—and even played a key role in defending President Bill Clinton during his impeachment proceedings.

Now, he is simultaneously representing major players in separate cases that could have big implications for both parties.

Last week, Mr. Lowell launched his courtroom defense of Sen. Bob Menendez, a New Jersey Democrat facing federal charges that he sold political favors for luxurious trips and campaign contributions. If Mr. Menendez is convicted and leaves the Senate, it could further tilt the balance in the chamber toward the GOP.

Mr. Lowell is also representing Jared Kushner, the son-in-law and senior adviser

to President Donald Trump. Mr. Kushner faces scrutiny from congressional and federal investigators over his dealings with Russians in the 2016 campaign. Mr. Lowell's ability to keep Mr. Kushner from becoming a target of Special Counsel Robert Mueller's investigation of possible collusion between Russia and Mr. Trump's campaign could affect Mr. Trump's presidency.

Mr. Lowell's decades of representing major Washington figures in trouble, including 2004 Democratic vice-presidential candidate John Edwards, led to his unusual situation juggling arguably the two biggest political cases unfolding today. "He is brilliant and organized, so taking on several wars at once doesn't seem to faze him," said Jack Abramoff, a conservative lobbyist whom Mr. Lowell helped obtain a plea deal in 2008.

Mr. Lowell, a trim and balding 65-year-old who favors the dark-suit uniform of D.C. law-

yers, declined an interview request. A longtime Democrat, he supported Jimmy Carter's 1976 presidential run and joined the Justice Department shortly after graduating from Columbia Law School.

By the early 1980s, he was building a private practice that eventually began attracting a steady stream of high-profile clients, including Mr. Abramoff.

He is obsessive in his preparation for a negotiating session or a trial. He insists on printing out every piece of evidence and inspecting it before entering a courtroom.

"There is nobody better" in such circumstances, said Stanley Brand, a former early law partner of Mr. Lowell's. "You want someone like Abbe when you are in trouble. He is relentless. He would say he owes his success to 'total preparation,' to the point he knows a case inside and out."

Such efforts helped him successfully defend Mr. Edwards, according to associates.

The former senator was accused by federal prosecutors of accepting more than \$900,000 from campaign donors, in part to help him cover up an extramarital affair and resulting pregnancy. Mr. Lowell argued that donors provided the money out of personal friendship and not to help Mr. Edwards's 2008 presidential campaign.

Mr. Lowell deployed a similar line of attack in his opening statement in the trial of Mr. Menendez, as he rebutted allegations by prosecutor Peter Koski that the senator "sold his Senate office for a life of luxury he couldn't afford." Mr. Menendez is accused of doling out political favors to a physician in exchange for \$1 million in gifts, lavish trips and campaign contributions. Mr. Lowell told jurors that Mr. Menendez and the doctor were longtime pals, not a politician and influence-seeker trading favors.

—Thomas MacMillan contributed to this article.

IRMA

Continued from Page One

4 hurricane. The storm's winds, heavy rain and surging seas have crippled the state after 6.5 million people were ordered to evacuate to other areas. Many places including Miami Beach were just beginning to reopen, and highways leading into the state from Georgia had bumper-to-bumper traffic.

Residents and business owners in the Upper Keys were allowed back into the area Tuesday morning as far south as Islamorada. But Monroe County officials urged people to stay away. "Fuel, water, power & medical super limited," the county said on Twitter.

The county has about 53,000 housing units, census figures show. Nearly all are on the Keys, a 110-mile ribbon of low-lying islands linked by bridges. Monroe County is home to 79,000 people, the vast majority of whom live on the archipelago.

Florida Gov. Rick Scott on Tuesday said transportation authorities were inspecting those bridges to make sure they can bear significant weight.

Cities and towns throughout the state were still dealing with widespread power outages. A state tally early Tuesday showed near 5.5 million outages, or 53% of the electrical accounts, were still offline. The outages included about 662,000 customers in Miami-Dade County, Florida's most populous.

Power outages left 49 hospitals and 111 nursing homes operating on generators as of Tuesday morning, according to

the state's Emergency Operations Center.

"I've had a lot of calls from nursing homes," Mr. Scott said Tuesday.

Crews with Florida Power & Light Co. were working with local emergency-operations centers to prioritize getting power back to critical services such as nursing homes, hospitals, police stations and water-treatment facilities, an FPL spokesman said. Some Floridian

ans will likely wait weeks before power is restored, utility officials have said.

The storm knocked at least a million power customers offline in Georgia and the Carolinas, according to local utilities, while flooding downtown Charleston, S.C.

As damage assessments continued on the Keys, stories also emerged of the harrowing ordeal some residents experienced after ignoring a drumbeat of official pleas to evacuate.

Hubert Baudoin, who has lived in the Keys for 30 years and owns two restaurants and a hotel, boarded up his properties to protect them from the storm and took shelter with a friend in a concrete shelter Mr. Baudoin built after Hurricane Andrew in 1992.

Then came the "high-anxiety waiting game," he said, fueled by adrenaline and ice tea. The men listened to the unnerving whistling of the wind, the snaps and cracks of trees giving out and transformer explosions.

"Each gust felt like someone was giving you a lash on the back and you thought: 'What did I just lose?'" Mr. Baudoin said.

Sunday evening, the two men ventured out to survey

the destruction. Mr. Baudoin couldn't get to his home, on the Atlantic side of the island, but could see it had taken on water. His businesses, on the

bay side, fared better. But he estimates half of the 1,000 or so trees on his land are gone.

"In the Keys, we are very resilient people, and we know

there is a high price to live in paradise," he said.

—Melanie Evans and Valerie Bauerlein contributed to this article.



Boats damaged by high waters near Biscayne Bay a day after Hurricane Irma hit South Florida.

ANGEL VALENTIN FOR THE WALL STREET JOURNAL

U.S. NEWS

Business Tax-Cut Plan Excludes Some Services

By KATE DAVIDSON
AND RICHARD RUBIN

Some services companies such as accounting firms won't get the benefit of lower tax rates Republicans are planning for other businesses, Treasury Secretary Steven Mnuchin said Tuesday.

Republicans want to cut the 35% corporate tax rate. They also want to lower rates on so-called pass-through businesses, which pay business taxes through the individual tax returns of their owners at individual tax rates, which currently reach as high as 39.6%.

Many pass-through businesses are small. They also include some of the largest law, accounting and investment firms, which Mr. Mnuchin suggested might not get the new lower rate on pass-through business income that Republicans are planning.

The idea is to create a special tax rate that is equal to or higher than the corporate tax

rate but lower than the tax rate that applies to wages. That new rate would apply to pass-through business income but with boundaries to prevent it from being used by people whose income from service businesses closely resembles wages.

"If you're an accountant firm and that's clearly income, you'll be taxed an income rate, you won't be taxed a pass-through rate," Mr. Mnuchin said. "If you're a business that's creating manufacturing jobs, you're going to get the benefit of that rate because that's going to be passed through to help create jobs and better wages."

Mr. Mnuchin's remarks, at the Delivering Alpha conference in New York, offered new detail on how the administration and Congress may tailor new rules for partnerships, limited liability companies and other pass-through firms that account for a majority of U.S. business income.

A Treasury spokesman de-

cined to provide additional detail.

Unlike corporations, whose taxable investors have to pay taxes on capital gains and dividends while the company itself pays corporate income tax, there is just one layer of tax on pass-through businesses.

Under a system like the one Mr. Mnuchin described, the owners of an accounting partnership would pay the individual tax rate on both their salaries and their partnership distributions. But the owners of a manufacturing partnership would pay the individual tax rate on their salaries and the special, lower rate on their profits.

The details are crucial, because they will help determine which businesses win and which lose from the tax plan Republicans aim to push through Congress this year.

At the National Federation of Independent Business, the influential trade group for small businesses and pass-throughs, "everybody's eyes



Treasury Secretary Steven Mnuchin said a corporate tax-rate cut won't apply to accounting firms.

kind of popped out" when they heard Mr. Mnuchin's comments, said Brad Close, senior vice president for advocacy.

"We just think that's bad government policy, for sure," he said. "It picks winners and losers based on industry type, and we just think that's a terrible way to go for tax reform."

It could be a challenge to define which companies get the lower tax rate Republicans

are planning and which owners of companies would continue paying higher individual tax rates on their business income.

Creating that distinction would cut against another Republican goal for the tax code: simplification. Possibly affected industries include law, engineering, medicine, finance, architecture and consulting.

"Trying to define a service business is challenging be-

cause all businesses use a combination of services, capital and entrepreneurship," said Steve Rosenthal, a tax lawyer and senior fellow at the Tax Policy Center in Washington. "Rigid lists are easy to exploit. As a former tax planner, that's what we did. You give us a bright line, and we make sure to fall on one side or the other."

—Louise Radnofsky contributed to this article.

Bannon Says He Still Talks to the President Often

By JULIE STEINBERG
AND STEVEN RUSSOLILLO

HONG KONG—Former White House chief strategist Steve Bannon speaks with President Donald Trump every two to three days, he told a private luncheon gathering Tuesday in Hong Kong, some three weeks after the adviser left the administration.

Mr. Bannon said he most recently spoke with Mr. Trump the previous night for an hour, according to two people who attended the closed-door meeting with the former presidential adviser. The gathering, at a Grand Hyatt hotel restaurant, included a group of about 20 money managers.

Mr. Bannon couldn't be

reached for comment.

White House press secretary Sarah Huckabee Sanders told reporters on Tuesday she was aware of two conversations between Mr. Bannon and the president. Of the former chief strategist's comment that the two speak every two to three days she said, "Certainly not that frequently."

When he worked in the administration, Mr. Bannon, a former investment banker and media executive, was associated with the president's "America First" agenda and had pressed for more protectionist trade policies, restrictions on immigration and withdrawal from the Paris climate accord. Mr. Bannon joined Mr. Trump's presidential campaign



Steve Bannon says he talks to the president every few days.

in the summer of 2016 and stayed on in the White House as chief strategist.

He left the administration

last month and rejoined Breitbart News, a right-wing website, as executive chairman after a week in which the president came under fire for saying that both white supremacists and counter-protesters were to blame for racially charged unrest in Charlottesville, Va.

Mr. Bannon described himself at the Tuesday lunch as a "schmendrick" engineer—invoking the Yiddish word for "foolish person"—while Mr. Trump was the architect of the campaign, the attendee said. Mr. Bannon said while he had influence before in the White House, he now has "power" at Breitbart.

On Tuesday evening, Mr. Bannon told an investment

conference organized by financial-services firm CLSA, a unit of Chinese state-owned brokerage firm Citic Securities Co., that Mr. Trump's relationship with President Xi Jinping of China is very positive, three conference attendees said. The speech was closed to the media.

Mr. Bannon said Mr. Trump has enormous respect for Mr. Xi and was confident something would get done on trade, the people in the room said. Mr. Bannon did say that China structures its economy to protect certain industries from capitalist ways and that the U.S. needs to play a stronger role changing the system in China, an attendee recalled.

While in the White House,

Mr. Bannon was deeply involved with Mr. Trump's tough talk on trade with China, and he told CBS's "60 Minutes" in an interview that aired this week that China was "at economic war" with the U.S.

In describing Asia more broadly, Mr. Bannon said the region is witnessing both a century of growth and a century of conflict, according to attendees.

Mr. Bannon told the conference he doesn't expect any U.S. tax-law changes for at least the next three months and that it probably wouldn't happen until next year, according to a person who was in the room.

—Natasha Khan contributed to this article.

'Dreamer' Bill Isn't Tied to Wall

By LAURA MECKLER
AND LOUISE RADNOFSKY

WASHINGTON—The White House signaled Tuesday that it wouldn't insist on funding for a Southwest border wall as part of legislation giving legal status to undocumented immigrants brought to the U.S. as children.

White House Legislative Affairs Director Marc Short told reporters that President Donald Trump believes that a border barrier is important but that it doesn't necessarily need to be paired with legislation aiding those immigrants, who will lose protections from deportation beginning in early March.

The issue of how to protect these people took on urgency in Congress last week when the Trump administration ended the five-year-old Deferred Action for Childhood Arrivals, or DACA, program, which now gives about 690,000 of them the right to work legally and safe harbor from deportation.

Some Republicans think their best, and possibly only, chance to win funding for Mr. Trump's proposed wall is to tie it to legislation helping the young immigrants, called Dreamers by their supporters, because Democrats badly want that to pass.



A U.S. agent in San Diego looks at an artwork on the border wall.

Mr. Short, speaking at a briefing sponsored by the Christian Science Monitor, said the White House wouldn't insist on that trade-off.

He said Mr. Trump wants to build a border barrier but added, "whether or not that's part of a DACA equation, or whether or not that's another legislative vehicle, isn't clear."

"We don't want to bind ourselves into a construct that makes reaching a conclusion on DACA impossible," Mr. Short said.

Democrats say they will oppose tying the Dream Act—proposed legislation that would help these undocumented immigrants—with wall funding, though some are open to border-security mea-

sures that don't include wall funding.

Mr. Trump, as a presidential candidate, promised that Mexico would pay for his promised border wall but has since backtracked on that. He now says Mexico will eventually reimburse the U.S. for the cost, something most lawmakers doubt.

Mr. Short reiterated the administration's view that DACA, which was created through executive action by President Barack Obama, was an unlawful program.

Mr. Short noted that it was Mr. Trump who had called on lawmakers to deal with the issue legislatively.

"He's asked Congress to fix it," Mr. Short said.

U.S. WATCH

ECONOMY

Household Incomes In 2016 Hit New High

Income for the average American household reached a new high last year for the first time this century, a milestone in the slow and volatile recovery from two recessions and financial bubbles that crossed over three presidencies.

Median household income last year was \$59,039, up an inflation-adjusted 3.2% from 2015, the Census Bureau said Tuesday. It was a new high for the figure, surpassing the previous peak for household income reached in 1999, though the agency cautioned against direct historical

comparisons due to methodology changes over time.

The poverty rate fell last year, as did the share of the population without health insurance, while some measures of income inequality increased somewhat.

Last year's rise for household incomes was the second significant jump in a row, coming after years of slipping or stagnant incomes following the 2007-09 recession, which was associated with the housing boom and bust. A technology boom and bust marked the end of the previous expansion which led to the 1999 peak. Income growth in 2016 was broad across all age and racial groups, for both native-born and immigrant households.

—Ben Leubsdorf

WHITE HOUSE Communications Director Named

Hope Hicks, a longtime aide to President Donald Trump, will serve as the permanent communications director, White House Press Secretary Sarah Huckabee Sanders said. Ms. Hicks was appointed last month to serve as interim communications director, making her the fourth person in the first eight months of the administration to serve in that role. Mike Dubke and Anthony Scaramucci both resigned under pressure. Former Press Secretary Sean Spicer, who also assumed those duties on an interim basis, left in July.

—Rebecca Ballhaus



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IN DEPTH

SPACE

Continued from Page One
netic equivalent of a 400-pound safe moving at 60 miles an hour.

Last year, a scrap barely bigger than a grain of salt blew a hole in the European Space Agency's Sentinel 1-B satellite, knocking off five pieces that narrowly missed a nearby satellite. In June, something jolted the AMC9 telecommunications satellite, owned by Luxembourg-based SES, disrupting data and broadcast services over the U.S. and Mexico.

"This is the first time this has happened to us," said Markus Payer, vice president for corporate communications at SES, which operates 65 satellites. Company engineers re-established control of the crippled craft and hope to park it in a "graveyard" orbit where it won't threaten other spacecraft. The incident is costing SES about \$23 million in lost revenue this year and another \$44 million in the value of the spacecraft itself.

Unchecked, the growing debris in orbit "might make some regions of space unusable in the future, and that would impact everybody—everybody who uses a mobile phone, who gets television, who relies on weather forecasts," said Holger Krag, head of the European Space Agency's Space Debris Office.

Satellite operations generally are governed by a patchwork of voluntary guidelines, treaties, domestic policies and laws designed for an earlier era of spaceflight. In the U.S., responsibility is spread over several federal agencies.

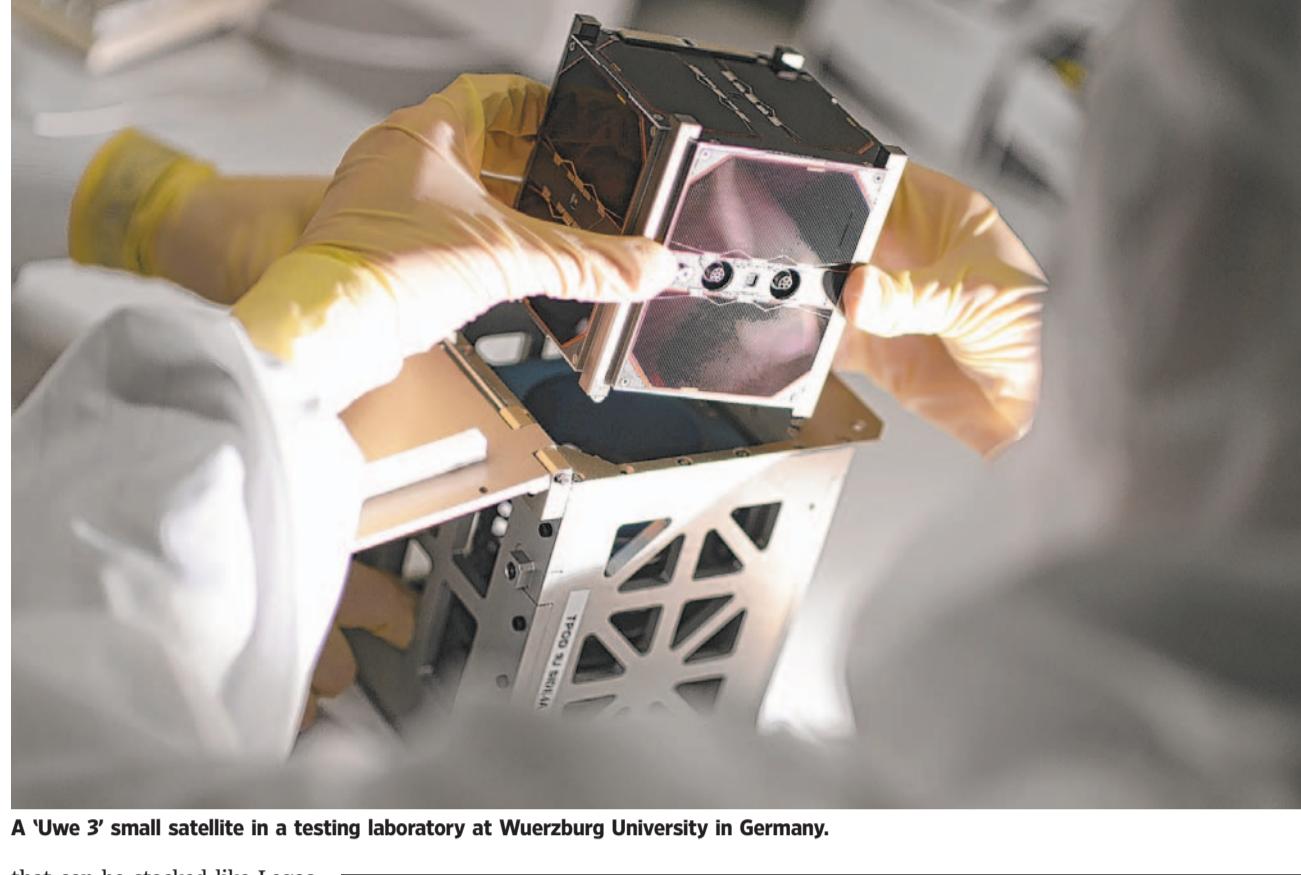
Among other issues, European space officials and aerospace executives worry that customary practices guiding the distance between satellites or how quickly they should be removed from orbit when missions are done aren't adequate and are often ignored.

Some experts worry that CubeSats may be little more than rocks in space.

"International treaties on space were developed 30 years ago, and they weren't considering the types of constellations and uses of space we are seeing in the near future," said Greg Wyler, CEO of OneWeb, which starting in April plans to launch a \$2 billion constellation of 882 small satellites for broadband internet services. "There needs to be an update of those rules."

Access to space has never been easier due to the innovations of small satellites that range from the size of a washing machine to as small as a poker chip, compared with more traditional satellites that are often taller than a double-decker bus and weigh several tons.

The most popular type is called a CubeSat, which is based on a student-created standardized design and typically costs a fraction of larger systems—as little as \$40,000 each, compared with an average of \$97 million or so for larger, custom-built satellites. At their simplest, CubeSats are 4-inch cubes



A 'Uwe 3' small satellite in a testing laboratory at Wuerzburg University in Germany.

that can be stacked like Legos into various configurations.

"CubeSats are so appealing because they are a kit, essentially," said aerospace industry analyst Carissa Bryce Christensen, CEO of the consulting firm Bryce Space & Technology in Alexandria, Va. "You are not having to design everything yourself."

Each tiny spacecraft is built to perform a single dedicated task, such as gathering weather data, tracking aircraft, monitoring factory activity or conducting science experiments that require low gravity. Experimental networks of these small satellites can also coordinate their actions, respond to events and collect data autonomously across a broad area.

They usually hitchhike into low orbit—200 to 1,200 miles above the Earth's surface—on rockets launched by space agencies, including the National Aeronautics and Space Administration, and private companies, such as SpaceX, that have spare room. They are often stacked on racks to be deployed from the international space station, like shells ejected from a pump-action shotgun. NanoRacks LLC, a leading launcher of CubeSats, based in Webster, Texas, has deployed 182 CubeSats from the space station.

Other relatively compact satellites, each weighing a few hundred pounds, are also proliferating. In the next five years 11 aerospace companies plan orbital networks encompassing 18,000 small communications satellites, according to federal filings, representing about \$175 billion worth of satellite manufacturing and launch services. More launches are expected from universities and researchers.

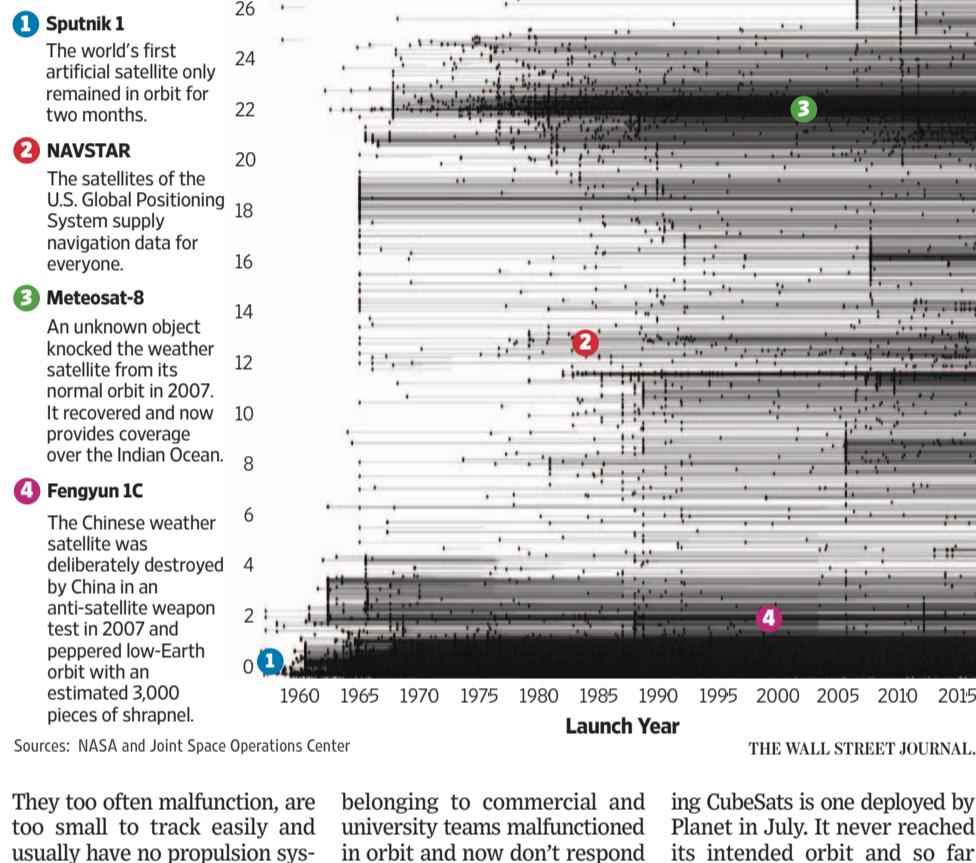
"We never expected the market to grow so quickly," said NanoRacks CEO Jeffrey Manber. His company is now exploring ways to use 3-D printing technology and robotics to manufacture CubeSats in orbit. So is the European Space Agency.

At least 35 companies are working on new launch systems to speed CubeSats into space, according to the Paris-based marketing research company Euroconsult Group.

Some aerospace experts are concerned that, despite their advantages, CubeSats may be little more than rocks in space.

Objects We're Watching in Orbit

The U.S. Air Force tracks about 23,000 objects in orbit—including live satellites, derelict rocket parts, decommissioned spacecraft and wreckage.



Sources: NASA and Joint Space Operations Center

They too often malfunction, are too small to track easily and usually have no propulsion system to allow them to steer clear of other spacecraft, critics said.

Generally, a CubeSat maintains the speed and orbit of the rocket that released it. At lower altitudes, small amounts of wind and resistance can push the devices off course. (At very high altitudes, well beyond the reach of the atmosphere, a satellite might stay on the same course for thousands of years.)

The lack of maneuverability makes CubeSats a "huge problem," said aerospace engineering professor John Crassidis at the University of Buffalo Nano-satellite Laboratory.

Out of more than 244 CubeSats and other small satellites launched from 2000 through 2015, only one in four completed its mission, according to a recent survey by Michael Swartwout of Saint Louis University. Nearly a third of them were dead on arrival in orbit.

This summer, nine CubeSats

belonging to commercial and university teams malfunctioned in orbit and now don't respond to commands.

Many proponents of CubeSats said their tiny spacecraft orbit at such low altitudes that they clean up after themselves by harmlessly burning up in the atmosphere within a few months or years. As a satellite slows, it drops lower and lower, encountering stronger headwinds that create greater friction and heat, until it finally catches fire or vaporizes.

The largest commercial network of small satellites currently belongs to Planet, an imaging company based in San Francisco, which operates a fleet of 185 CubeSats and five other satellites and plans to launch six more CubeSats in October.

Planet said it relies on the natural tendency of a satellite to burn up in the atmosphere to dispose of space-craft that have outlived their usefulness.

Among this summer's miss-

ing CubeSats is one deployed by Planet in July. It never reached its intended orbit and so far can't be located. The company said it was gathering information to find out what happened.

About a third of the satellites in low Earth orbit don't drop out of space as expected when their mission is done, an international space debris working group reported earlier this year.

One of every five CubeSats launched between 2003 and 2014 was in violation of international guidelines calling for satellites to de-orbit safely when their mission is over, according to a separate NASA study.

Military and commercial radar monitors often can't tell where all these small satellites are at any given time. "The number of satellites ride-sharing on a single rocket overwhelms the current process,"

said Daniel Ceperley, CEO of Leolabs Inc., which is building a global network of six radars for commercial space tracking and

collision warning. The Air Force "historically takes a month to sort out where all the CubeSats are," he said.

Satellite analyst Hugh Lewis at the U.K.'s University of Southampton and his colleagues studied orbital data collected from 2005 through 2014 by the Center for Space Standards & Innovation, a subsidiary of Analytical Graphics Inc., which issues collision alerts to commercial satellite operators. Combing through data on thousands of orbiting objects, Dr. Lewis identified 163 CubeSats and then reconstructed their travels.

Taken together, the tiny craft passed within 3 miles of other objects more than 360,000 times, with a margin of error of plus or minus a mile or so, in orbits where impacts would deliver the energy that was about equivalent to an exploding hand grenade.

"Any failures will cause problems," said Dr. Lewis. "They are left to drift in an orbit that is used very heavily."

The traffic-management problems could be multiplied by the thousands of small satellites proposed by SpaceX and other companies in filings with the Federal Communications Commission. These satellites, while still on the drawing board, will likely be large enough to carry propulsion systems and fuel to help steer clear of trouble, aerospace analyst Brian Weeden at the Secure World Foundation in Washington, D.C., said.

Their sheer numbers, though, raise the risks of accidental collisions and growing space debris, Dr. Weeden and several other experts said.

SpaceX, for instance, is seeking the FCC's permission to orbit almost 12,000 small satellites arranged in two global networks in low Earth orbits to provide internet service. A spokesman for SpaceX declined to comment on how it would handle potential collisions or debris.

In a letter in April to the FCC Satellite Division, SpaceX counsel William Wiltshire told regulators, "In the unlikely event of a failed satellite, that satellite would merely become another piece of debris and be treated no differently for collision-avoidance screening and risk assessment than any other piece of trackable debris."

As the number of satellites soars, federal and congressional space experts have urged the Federal Aviation Administration to take a larger role in managing commercial-space traffic. Among other things, that would relieve the Defense Department of its current role in monitoring nonmilitary orbital operations and providing collision warnings.

Any change, though, would require congressional approval and \$100 million or so in new funding for the aviation agency—neither of which seems likely soon.

The United Nations Committee on the Peaceful Uses of Outer Space has debated new guidelines on orbital debris since 2004, but the member states haven't come to an agreement.

Meanwhile, NASA expects to launch a space debris sensor in November to gather more data.

"We do realize we are behind the curve," said Jer Chi Liou, chief scientist at NASA's Orbital Debris Program Office at the Johnson Space Center in Houston.

rare friend out of the People's Republic—one of the last places on earth where they're not hassled and persecuted or confined to skate parks.

Charlie Lanceplaine, a Shanghai skateboarder, said he once clambered to the top of an entrance to a new subway station with a group of friends. As they began wheeling loudly over its marble slopes, an onlooker called the police.

When the cops emerged from a squad car, it was clear that they meant business.

As Mr. Lanceplaine and his friends watched from a distance, however, the police paid them no attention.

The only possible explanation, Mr. Lanceplaine said, is that Chinese authorities sometimes display a surprising degree of indifference toward activities that aren't specifically prohibited by law—such as skateboarding. They do sometimes come down hard on those who they perceive to be troublemakers, however.

For the record, the police did cart away somebody that day. They detained the whistleblower who called them.

SKATE

Continued from Page One
smooth natural stone rather than the asphalt and concrete predominant in the U.S. The most coveted is marble, which is plentiful and cheap in China and which developers enthusiastically adhere to everything from decorative fountains to office utility closets.

Marble, boarders say, is the perfect surface for "grinding," a maneuver that entails sliding along a ledge while balancing on the metal trucks that fasten the wheels to the board.

The second Holy Grail is any alluring outdoor structure that isn't crawling with hostile security guards. In the U.S., skateboarders know every marble ledge in every big city, but they're usually attached to courthouses with surveillance cameras where crackdowns come quickly.

In inland Chinese cities like Changsha, 700 miles due west of Shanghai, "most security guards haven't seen a skateboard before," says Eric Lai, a 36-year-old from Shenzhen.



CJ Collins, 14, uses the beams of a bridge in Changsha, China, as a ramp. Of the skating sites there, he said, 'China is sick.'

The breakneck pace of development in China gives skateboarders a steady to tackle. Much of the marble in places like Beijing has lost its appeal to globe-trotting skaters because they've done it all before. In Changsha, it all begins with broken ground on scores of new towers and a nearly \$2

billion indoor ski resort and water park in anticipation of residents who haven't arrived yet.

Die-hard skateboarders will roam from Brazil to Sweden to Australia looking for the next architectural marvel suitable for shooting videos of their most impressive tricks. But this place, they say, belongs to

millions of people who are watching us," said Axel Cruysberg, 22, a native of Belgium.

There are the occasional killjoys like Luo Wentao, 31, who stopped on a recent day to watch Mr. Carpenter's crew of mostly professional skateboarders from California who are sponsored by Toy Machine, a board brand.

Watching the skaters attack the U-shaped support beams of a pedestrian bridge connected to an amphitheater shaped like a space ship, Mr. Luo began to worry they could hurt themselves. He scouted around in vain for a "keep off" sign he could point out to a pair of security guards who were watching the action impassively.

"I think if those guards were responsible, they wouldn't allow this," he huffed.

When asked why he wasn't hassling the skaters, one of the guards said he didn't think it was worth the trouble. "I've never seen it before and don't really know what it is."

For now at least, skateboarders seem to have made a

rare friend out of the People's Republic—one of the last places on earth where they're not hassled and persecuted or confined to skate parks.

Charlie Lanceplaine, a Shanghai skateboarder, said he once clambered to the top of an entrance to a new subway station with a group of friends. As they began wheeling loudly over its marble slopes, an onlooker called the police.

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LIFE & ARTS

BONDS: ON RELATIONSHIPS | By Elizabeth Bernstein

A Parent's Survival Guide Now That Your Child Is Off to College

A family therapist offers advice on navigating the range of emotions parents of college freshmen can feel this time of year

IT'S THE BEST OF TIMES and the worst of times: You just became an empty nester.

When a child leaves for college, parents have the happiness of seeing their son or daughter mature and start off on an independent life. They also miss constant connection, fret about their child's well-being, and worry about the way the relationship may change.

Esther Boykin, a licensed marriage and family therapist in Washington, D.C., says that empty nesters may experience a type of grief—for the loss of the relationship as it was. In some cases, some see a therapist. In an interview, she talked about the mixed feelings empty nesters often have and what they can do. Here are edited excerpts.

WSJ: What are some of the emotions that empty nesters typically feel?

Ms. Boykin: The empty nest kicks up much more than just sadness or loneliness. For many parents, there is also guilt about what they wish they had, or hadn't, done while raising their child. This can range from specific negative interactions along the way to a broad sense of not having done enough to prepare them for the "real world." And they can feel a great deal of anxiety and worry about how their child will fare in a new environment.

Parents can also feel excitement, pride, joy, and relief as they get a glimpse of a life that doesn't center around kids and their goals all the time.

Why is this such a complicated issue?

Parents experience an ambiguous loss, or a loss that doesn't really look like loss. Their child is typically just a few hours or a short plane ride away, so they haven't lost them. Yet the emotional experience of their absence can feel incredibly profound and permanent. This person whom you have centered your life around for 18 years is no longer around on a daily basis and is loosening the connection that had been all-encompassing.

The greatest challenge for parents is that they know that the goal of good parenting is to raise a self-sufficient, independent adult.

But the realization of that goal creates a deep sense of loss that can be confusing. It's like realizing that you did an awesome job and the reward is that the person you love most is leaving you for good.

Do both fathers and mothers experience the emotions of empty nesting the same way?

The truth is that a parent's emo-



FROM TOP: iSTOCK/ESTHER BOYKIN

tions are more related to the relationship they have with their child and their role as a caregiver than they are with gender. Often the parent who has the more emotionally intimate relationship will have an easier time processing empty-nest emotions. They may find it easier to trust their child is ready for the challenges of adulthood and to establish regular communication.

Are empty nesters ever envious of their children?

Sometimes. If you see this as a sign that you are old and your life is winding down, then it is easy to be envious of your children and all of the new experiences that lay ahead of them. Envy can also be a problem for parents who felt they didn't get the same opportunities. Unfortunately this is often wrapped up in guilt as well. Parents who find themselves feeling jealous of their child's opportunities often then feel guilty or ashamed of that feeling.

How does empty nesting affect a couple?

It can be easy to neglect your relationship while the kids are home and life is centered around family rather than romance, but



once the kids leave you have to figure out how to reconnect. At a time when you both may need comfort and companionship, you are faced with the realization that you don't know how to do that with each other very well anymore.

Think about this long before the kids leave home. Don't assume that once your schedules are your own you will magically rekindle the spark of passion or find it easy to connect. It is also important to talk openly about what's going on—not only about your individual

The time after dropping off a child at college can bring some unexpected emotions for parents. Family therapist Esther Boykin, left, has some solutions.

experiences but what you want and need from each other as partners.

I see lots of couples where one partner is excited about all the free time and ready to go on adventures while the other one is sad, lonely, and just wants to grieve. This difference isn't bad, but it usually sets the stage for some resentment and judgment on both sides.

Should you talk to your child about your feelings?

Part of cultivating a new relationship with your child is having more grown-up conversations. The goal is to share appropriately without making your child feel responsible for your emotional state. One way to check yourself before sharing is to ask yourself what you hope to get from the conversation. If the answer is comfort and caretaking, then it is probably best for you to talk to a friend, family member or your significant other first.

How can you renegotiate your relationship with your child?

Create some new routines. Some

Steps for the First Fall

Some advice from Esther Boykin on weathering empty nesting:

- Feel the feelings. Cry, write in a journal, vent to a friend, family member or therapist. Do whatever you can to let those emotions out.
- Take care of yourself. Eat healthy, go outside, listen to music, get adequate sleep. It's easy for sadness to overwhelm us and that can put us in a cycle of poor self-care, which only amplifies difficult emotions.
- Develop a check-in ritual. Tell your child you miss him or her and establish a routine for phone calls, text messages or FaceTime. Respect your child's need for independence but also honor your need for connection.
- Let go of the guilt. There is so much time now to question all the parenting decisions made over the previous 18 years. Don't waste time looking back. Focus your energy on remembering the fun and joy of parenting at each stage of your child's life.
- Build a support circle. Reach out to other parents who have gone through this life stage. Many universities have parent groups in various cities and on social media.

things will happen organically, like a phone call on Thursdays as you head to work and they head into their early class. Be intentional about establishing some simple ways to connect regularly. This could include anything from emails, texts and phone calls, to social media check-ins or setting a schedule for visits.

And remember that being emotionally supportive to an adult is much more about being available than it is about fixing problems. Practice being a good listener and ask before giving advice. Not only will you respect your child's desire for autonomy but you send the message that you believe in their ability to manage their life without your input even when you want to give it.

MY RIDE | By A.J. Baime

A MILLENNIAL'S LOVE FOR A CLASSIC FORD



Kimberly Claybaugh of Tulsa, Okla., with her 1952 Ford Customline. The car's previous owner named the car Myrtle and added the red pinstriping, right.



I called Alice immediately. She was very emotional, because this car had been a 50th birthday present from her husband, who had since passed away, and it meant so much to her. By this time she had owned the car for 17 years. It was time for her to let Myrtle go, and she thought I was the right person to take care of her and to keep her original. It turns out my parents had made a deal with her six weeks earlier, and they had

kept this a secret. (I have no idea what they paid for the car.)

Next summer there is a national meet for the Early V-8 Club of America in Dearborn, Mich., the home of Ford Motor Co. I am planning on driving Myrtle there, back to where it all began.

Contact A.J. Baime at Facebook.com/ajbaime.



OPINION

REVIEW & OUTLOOK

Trump, Taxes and the Democrats

President Trump is elated with the media applause for his new political condominium with Democrats Chuck Schumer and Nancy Pelosi, and it's amusing to see sudden praise from the same circles that claim he's unfit for the Presidency. If Mr. Trump endorses Medicare for all, maybe they'll put him on Mount Rushmore.

But anyone who thinks this really heralds a brave new world underestimates the current polarization in American politics. Democrats might be able to deal with Mr. Trump if the President embraces their agenda. But then he's going to have a heck of a time getting anything through this Republican Congress. On tax reform in particular, there's little potential common ground.

Recall that Mr. Trump didn't negotiate with Democrats last week. Like a first-time home buyer, he accepted their first offer. His concession was mainly on process, delaying for three months a fight over government spending and the debt ceiling—as part of a \$15.25 billion hurricane-relief bill. Yet even that split the GOP, passing the House 316-90 and the Senate 80-17. All the nays were Republicans, who think Mr. Trump handed Democrats greater leverage for showdowns in December.

Mr. Trump seems to be warning Mitch McConnell and Paul Ryan that he can turn to Democrats if they can't get things done. But turn to them for what? Infrastructure spending is a possibility, except that Mr. Schumer wants all of it to be public money, not a private-public bond issuance. An immigration deal might have a chance, assuming Mr. Trump abandons his wall on the Mexican border. What else?

The December showdown will tee up another fight over the size of government. Does Mr. Trump think Mr. Schumer and Mrs. Pelosi will sign off on his spending increase for the Pentagon? Or steep cuts for the EPA? Even if Mr. Schumer were willing, the antipathy that grassroots progressives feel for Mr. Trump won't let Democrats compromise on much.

The same holds for tax reform, which Mr. Trump says is his top priority. Mr. Schumer and 44 Senate Democrats stipulated their conditions for tax cooperation in a letter this summer: No tax cut for the wealthy, no increase in the deficit and no use of the 50-vote budget reconciliation process. Only three Democrats didn't sign that letter: Heidi Heitkamp (N.D.),

Joe Manchin (W.Va.) and Joe Donnelly (Ind.).

Yet Mr. Trump says he wants a large tax cut, including a corporate-tax rate of 15% from the current 35%, and big tax cuts for "the middle class" and small "pass-through" businesses that pay at the individual tax rate. Democrats might go along with the middle-class tax cuts, but those won't help

the economy.

The lowest corporate-tax rate that Barack Obama would consider was 28%, which wasn't nearly low enough to cause corporations to change investment plans. With Ireland at 12.5% and Britain headed for 17%, the U.S. needs to get to 20% to lift investment enough to spur growth to raise incomes. Will Mr. Schumer go along with that?

As for not adding to the deficit, that requires eliminating tax loopholes and using "dynamic" revenue scoring that assumes faster growth from the tax cut. Democrats aren't likely to go along with either one. They want to raise tax rates on investment income, but that is also a growth killer.

The best chance to win Democratic support is if the GOP and Mr. Trump move to eliminate the state-and-local tax deduction. Then Democrats from high-tax states might want to deal on the corporate rate in a trade for retaining the deduction. But after routing Republicans on health care, Democrats for now seem to believe they can defeat tax reform simply by claiming it's a tax cut for the wealthy.

Which means that if the President really wants Democratic votes on tax reform, he'll have to prove first that he has 50 Republican votes to pass it in the Senate. Only then will Ms. Heitkamp or Mr. Manchin come along to pad the victory margin and neutralize a 2018 campaign issue. They'll never agree to be the 50th vote to pass a bill because that would mean courting the wrath of anti-Trump voters on the left. They'd have to switch parties.

Mr. Trump has few policy convictions, and if Democrats win the 2018 elections, we can see him cutting deals in the next Congress to blow out spending, impose price controls on drugs, raise tariffs on China and maybe even Medicare for all. But if Mr. Trump wants tax reform in this Congress, he'll need Republican votes. Chuck and Nancy won't help him unless he surrenders to their vision of tax reform—which means a tax increase.

Young immigrant adults aren't the only 'Dreamers' in D.C.



MAIN
STREET
By William
McGurn

Throughout his political life, Barack Obama has been hustling America on immigration, pretending to be one thing while doing another.

Now he's at it again. Mr. Obama calls it "cruel" of Donald Trump both to end the Deferred Action for Childhood Arrivals program that protected hundreds of thousands of people who came to the U.S. as children illegally—and to ask Congress to fix it.

The former president further moans that the immigration bill he asked U.S. Congress to send him "never came," with the result that 800,000 young people now find themselves in limbo.

Certainly there are conservatives and Republicans who oppose and fight efforts by Congress to open America's doors, as well as to legalize the many millions who crossed into the U.S. unlawfully but have been working peacefully and productively. These immigration opponents get plenty of attention.

What gets almost zero press attention is the sneakier folks, Mr. Obama included. Truth is, no man has done more to poison the possibilities for fixing America's broken immigration system than this American president.

Mr. Obama's double-dealing begins with his time as junior senator from Illinois, when he helped sabotage a bipartisan immigration package supported by George W. Bush and Ted Kennedy. Mr. Obama's dissembling continued during the first two years of his own presidency, when he had the votes to pass an immigration bill if he had chosen to push one. It was all topped off by his decision, late in his first term, to institute the policy on DACA that he himself had previously admitted was beyond his constitutional powers.

Let this columnist state at the outset that he favors a generous system of legal immigration because he believes it is good for America. Let him stipulate too that a fair and reasonable solution to 800,000 children who are in the country through no fault of their own shouldn't be a sticking point for a nation as large as America.

But once again, here's the point about Mr. Obama: For all his big talk about how much he's wanted an immigration bill, whenever he's had the opportunity to back one, he's either declined or actively worked to scuttle it.

Start with 2007, when a coalition of Republican and Democratic senators came up with a bill that also enjoyed the support of the Bush White House. It wasn't perfect, but it extracted compromises from each side—e.g., enhancements for border security, a guest-worker program, and the inclusion of the entire Dream Act, the legislation for children who'd been brought into the U.S. illegally that Mr. Obama claims he has always wanted.

If Mr. Carney is waiting for signs that renewed inflation will boost business investment and wages, he'll be waiting for a while. The other half of Britain's household pincer is Brexit. Concern about Britain's future trading relations is sapping business confidence, which isn't a recipe for investments to increase productivity and wages. Brexit turmoil is distracting politicians from policy reforms such as entitlement overhauls, personal income-tax rate cuts, energy-market rationalization and other measures to put more money in households' hands.

Politicians, take note. Economic frustration helped produce last year's Brexit referendum shocker. If London doesn't start aiming for monetary and regulatory policies more appropriate for an entrepreneurial, import-dependent economy, who knows what other surprises are in store.

The Carney-Brexit Squeeze

Britain's consumer-price inflation clocked a faster-than-expected 2.9% year-on-year in August, up from 2.6% in July. Consumers are being squeezed ever more tightly between the rock of their central bank's ultralow interest rates and the hard place of Brexit.

Central bankers have been saying they want faster core inflation, excluding food and fuel. Bank of England Governor Mark Carney now has it. Core-price increases account for most of Tuesday's headline inflation. More than a year into the pound's post-Brexit slump against the dollar, retailers have run out of ways to shield consumers from import-driven price hikes. Parents were notable victims, with a significant bout of clothing-and-shoe inflation hitting during back-to-school shopping season.

But don't expect Mr. Carney to change course on the central bank's record-low interest rates and bloated bond portfolio any time soon. Mr. Carney has said he'll tolerate inflation well above the 2% target until whenever,

in service of whatever economic- or wage-growth goal he thinks of next. Households will keep losing purchasing power as Mr. Carney's inaction suppresses the value of the pound.

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The Better IRS Reform

The long saga of Lois Lerner is coming to a close. Ms. Lerner was the infamous Obama Administration cat's paw at the Internal Revenue Service, which harassed conservative political groups in the Tea Party era. Now the Trump Justice Department has decided there is no cause to pursue criminal charges against Ms. Lerner, and Congressional Republicans are howling.

They're upset over a letter Assistant Attorney General Stephen Boyd sent Friday to House Ways and Means Chairman Kevin Brady and tax subcommittee head Peter Roskam laying out DOJ's reasons. The letter notes that the initial Obama DOJ investigation found "substantial evidence of mismanagement" at the IRS but no "evidence of criminal intent by any IRS official"—the necessary hurdle for prosecution.

Mr. Boyd assured the House that the offices of both Attorney General Jeff Sessions and Deputy Attorney General Rod Rosenstein met with Justice's Criminal Division to review that earlier investigation and to consider additional details provided by House investigators. They found no basis to reopen a criminal probe.

Republicans are furious. But this mess happened because the Obama Administration used federal bureaucracies for raw political purposes. If Mr. Sessions's Justice Department has found no way to prove criminal intent beyond a reasonable doubt, Republicans could begin the road back to accountability by respecting that decision.

What House Republicans should do now is create a structure that will stop assaults by bureaucrats on political activity. They've been putting riders in spending bills to bar the IRS

from imposing restrictions on nonprofit speech. But this thumbs-in-the-dike approach does nothing about powers that IRS functionaries already have over political activity.

The solution is to get the IRS out of the political arena by limiting its role to the most basic administrative task of giving initial approval to nonprofits. Transfer to the Federal Election Commission the job of deciding whether a nonprofit is abiding by the existing rules governing political spending. The FEC's commissioners would decide if complaints against the political activities of nonprofits had merit.

Democrats will rebel because the design of the FEC makes it difficult to sic the commission on political enemies. That's why they made the IRS their political enforcer. Legislators designed the FEC to prevent partisans from turning it into a political weapon.

It takes a majority vote among its six bipartisan FEC commissioners to proceed with a judgment. Commissioners are confirmed by the Senate and operate in the open. The status quo gives this job—and power—to the IRS's unconfirmed, unseen federal bureaucrats.

Campaign-finance fights make Republicans nervous, but they've got a political self-interest in permanently transferring this job to the FEC. Once back in power, Democrats will mobilize a crackdown against their single biggest obsession—"dark money." Meaning the conservatives who fund their opposition.

Lois Lerner's IRS operation was the swamp at its worst. The GOP would do the country's politics a favor by draining these bureaucrats of partisan political power.

Sen. Obama opted to back 11th-hour amendments that Kennedy rightly complained were really intended as deal-breakers. At a critical point, Kennedy urged that President Bush ask then-Senate Majority Leader Harry Reid to keep the Senate in session to get the last few votes the bill needed. Mr. Reid opted for the Obama approach: Concluding he'd rather have the political issue than actual reform, he adjourned the Senate for the July 4 recess.

The Cruelty of Obama

Throughout his political life, Barack Obama has been hustling America on immigration, pretending to be one thing while doing another.

Now he's at it again. Mr. Obama calls it "cruel" of Donald Trump both to end the Deferred Action for Childhood Arrivals program that protected hundreds of thousands of people who came to the U.S. as children illegally—and to ask Congress to fix it.

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Today Carl Cannon, executive editor and Washington bureau chief for RealClearPolitics, is almost alone in the national press in pointing to this history, in a piece pegged to the Democratic response to Mr. Trump's pitch to codify DACA into law.

"Instead of responding to this overture in a spirit of compromise," Mr. Cannon writes, "Democrats chose vitriol and name-calling, their default position in the Trump era."

Perhaps, suggests Mr. Cannon, a "certain ex-president" is accusing Mr. Trump of cruelty "to help us forget" that when he and other Democrats "had the chance to grant 11 million immigrants access to the American dream, they instead chose, for partisan purposes, to keep them in the shadows."

Fair enough to criticize Mr. Trump and Congress for whatever they do going forward to clean up this mess. But let's remember the Obama duplicity that created it.

Write to mcgurn@wsj.com.

LETTERS TO THE EDITOR

VAT Will Help Some Problems, Create Others

In "Tax Consumption Through a VAT, and Voilà" (op-ed, Sept. 6) John H. Cochrane presents a persuasive case for eliminating America's current dysfunctional income-tax system and replacing it with a uniform value-added tax (VAT). The benefits of such a move, in higher growth and decreased inefficiency, are manifest. But how do we get there from here?

I suggest that an effort to achieve this restructuring be organized around a campaign to repeal the U.S. Constitution's 16th Amendment, which was ratified in 1913 to enable federal income-tax collections, and without which any federal income tax would be unconstitutional.

A new amendment to repeal the 16th Amendment might also include language to "lock in" important elements of any future VAT, most importantly, uniformity, but also the structure of any progressivity elements.

Such a campaign to repeal the 16th Amendment would enjoy broad popular support, particularly if progressive benefits (e.g., a yearly check for \$10,000) were limited to U.S. citizens. The right repeat text would reassure those of us concerned about the possibility (or likelihood) of ending up with the most monstrous of possible outcomes: a baroque VAT system, with exemptions for every rent-seeker with the wherewithal to employ a lobbyist, layered on top of the 10-million plus words of our existing tax code.

The U.S. voter will take great delight in throwing sand in the gears of the K Street lobbying machine and the politician-corporation revolving door. The wise politician will recognize this fact and get ahead of the crowd.

JAMES K. HOWEY
Seattle

Substituting a VAT for America's present tax code would eliminate the currency of the career politician—the ability to manipulate the tax code in return for election contributions.

Ain't happening.

MARK A. DiGIOVANNI
Boston

Anyone who has experienced the European system can certainly attest what a money machine a VAT is: a chocolate and chewing gum.

STEVEN MARTIN
Retired DEA supervisor

Richardson, Texas

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OPINION

America's Air Force Budget Must Aim Higher

By Heather Wilson
And David Goldfein

We recently stood on the tarmac at Bagram Air Base in Afghanistan and watched as the brothers-in-arms of a young Green Beret carried a flag-draped transfer case containing his remains toward the aircraft that would bring him home. He was killed fighting Islamic State.

A return to sequester-level funding would inhibit the U.S. ability to fly, fight and win wars.

We visited Afghanistan and Iraq to meet with airmen and assess Air Force operations. We met B-52 crews in Qatar who had launched 573 sorties without once being canceled for maintenance, as well as Air Force surgical teams deployed in a bombed-out bunker to provide trauma care for Iraqi soldiers.

We heard stories from heavy-construction crews keeping wells operating and runways open in 120-degree heat. We watched as combat air controllers choreographed layers of air support over Tal Afar, Iraq, and Raqqa, Syria.

Americans should be proud of the U.S. airmen and their brethren in all of the services. They are competent citizens of character. But lingering in our minds at every stop was a question: Will these men and women get the support they need to remain ready when called?

The American military has surged to the fight in Afghanistan and Iraq, but surges aren't sustainable. The Air Force as currently constituted is too small to do what the nation expects of it.

In 1991, when the U.S. went to war to drive Saddam Hussein out of Kuwait, the Air Force had 134 fighter squadrons, which typically have 18 to 24 aircraft each. Today, the Air Force has only 55 fighter squadrons, and 1,500 fewer pilots than it needs.

We have been doing too much, with too little, for too long.

On an average sortie protecting ground forces in Iraq and Syria, an American fighter aircraft refuels eight times. It takes about 60 tanker sorties a day to support U.S. operations in Afghanistan, Iraq and Syria. As a result, tanker pilots today have six months in a combat theater and six months at home. And when they are home, they are not really home. They have to cram in the training they weren't able to accomplish while "in the desert."

U.S.-based remotely piloted aircraft crews work 12-hour shifts—six



JOSH SMITH/REUTERS

An F-16 Fighting Falcon at Bagram Airfield, Afghanistan, on Aug. 22.

days on with one day off. And the cycle doesn't end. Despite their dedication and that of their families, going six, seven or eight years at this rate leaves people exhausted. They become increasingly likely to try a different career that will afford them a more normal life. As a result, we lose the skilled people we need to continue the fight.

The readiness of those who stay is also compromised by an operating tempo too high for a force of our size. Those B-52 crews that have done 573 straight missions

against Islamic State will return home soon. Ten days after arriving at home base, they will undergo inspection to make sure they are ready for their mission carrying nuclear weapons, for which they won't have practiced in at least four months.

In addition to the risk posed by the enemy, the lack of a defense budget puts U.S. forces at risk. The Air Force has requested \$132.4 billion for fiscal 2018. We cannot continue on last year's funding level of \$123.8 billion indefinitely.

Much worse would be a return to sequester. A budget this year at sequester levels—while we take the fight to Islamic State, deter aggression in the Pacific and support emergency responders at home—would almost certainly result in significant cuts in flying hours. Squadrons deployed or preparing to deploy would get to fly, but we would likely be forced to ground entire squadrons at home.

During sequestration in 2013, the Air Force grounded 13 squadrons of combat aircraft, rendering them ineffective. No training and no flying today would worsen the exodus of pilots and other skilled airmen. Airlines are eager to hire them.

The effects of a sequester-level budget on weapons purchases and munitions would also reduce readiness and lethality. We worry most about the effect on our airmen. Their skills are vital to our success, and, once gone, they cannot be quickly replaced.

On the ramp at Bagram, hundreds of airmen saluted a fallen soldier. They are the best our nation has and are committed to its defense. America must commit to them. With a reasonable budget, they can continue to take the fight to our adversaries.

Ms. Wilson is secretary of the Air Force. Gen. Goldfein is Air Force chief of staff.

India's Politkovskaya Moment

By Sadanand Dhume

As India just witnessed its Anna Politkovskaya moment, when a journalist's shocking murder marks an authoritarian turn for her country?

It's too early to say whether last week's assassination of crusading journalist Gauri Lankesh outside her Bangalore home suggests for India an inflection point similar to what the 2006 Politkovskaya murder marked for Russia. But it is among the most important questions facing Prime Minister Narendra Modi's three-year-old government.

Should Mr. Modi seek to dispel widespread fears that his ruling Bharatiya Janata Party intends to squeeze the space for dissent in India, he will have to display a commitment to democracy that goes beyond just elections. This means engaging with critical journalists, signaling displeasure at abuse by his supporters on social media and curbing his party's increasingly litigious streak. So far, Mr. Modi's record on this front is not inspiring.

Lankesh, an outspoken 55-year-old critic of the Hindu nationalism that has spawned, among other organizations, the BJP, was shot three times by motorcycle-borne assassins.

Though investigators have not arrested anyone for the crime, several commentators have speculated that the journalist's death was linked to her political views.

Since 2013, assassins have murdered at least three other "rationalists," best known for criticizing what they regarded as backward Hindu beliefs and the groups that champion them. Nobody has been convicted for the killings.

Many BJP supporters view allegations of a likely Hindu nationalist angle to Lankesh's murder as a baseless smear. The Rashtriya Swayamsevak Sangh (National Volunteer Corps), which supplies the BJP with much of its leadership, has condemned the murder, as has the BJP.

On Monday, a BJP official threatened a lawsuit against the prominent historian Ramachandra Guha. In an interview, Mr. Guha had declared that it was "very likely" that Lankesh's killers—as well as those of other rationalists—belonged to the "Sangh Parivar," a term loosely used to describe the RSS and its offshoots, including the BJP. The historian also attacked "the ruling dispensation in Delhi" for creating "a climate of hate and intolerance" in India.

Despite nationwide protests, the prime minister has not yet condemned Lankesh's murder or condoled with her family. Nor has Mr. Modi visibly distanced himself from those who apparently celebrated it.

"One bitch dies a dog's death and all the puppies start howling in tune," wrote a Gujarat-based businessman named Nikhil Dadhich, one of the 1,800-odd people and organizations Mr. Modi follows on Twitter. Ignoring a flurry of outraged tweets and articles, the prime minister has not unfollowed Mr. Dadhich.

Part of the problem lies with the nature of Mr. Modi's political con-

stituency. He represents both a large chunk of the national mainstream and a fanatical fringe that provides the BJP with much of its grass-roots passion.

Mr. Modi is by far the most popular politician in India. A Pew Research Center poll last year showed his approval rating at a stratospheric 81%. In March this year, the prime minister led his party to a crushing four-fifths majority in Uttar Pradesh, India's largest state.

For some Modi fans, his elevation to prime minister represents a kind of year zero in Indian politics, or the advent of a completely new era. The conservative columnist Swapan Dasgupta, quoting an unnamed senior BJP official, has written that Mr. Modi "is not there to manage India; he is there to change it."

Some BJP supporters view this mandate for change as a license to demonize all journalists as corrupt, bully writers with court cases and constantly abuse India's religious minorities on television and social media.

Unlike India's only other BJP prime minister, Atal Bihari Vajpayee (1998-2004), Mr. Modi styles himself as a strongman, not as a con-

sensus-builder. This narrows his room for compromise and makes him prone to ignoring even well-meaning critics. His governing style exacerbates fears that India's democracy is lurching toward the suppression of dissent.

If Mr. Modi wants to correct this impression, he can do so easily enough. Nobody is forcing him to follow people who celebrate murder and threaten women with rape on Twitter. Nobody is forcing him to abjure press conferences or any other interaction with journalists where he may be asked tough questions. Nobody stops him from admonishing ministerial colleagues who use demeaning words like "prostitute" to describe journalists.

Perhaps it makes political sense for Mr. Modi not to alienate a cadre of crass foot soldiers who have stood by him for years. But for India the prime minister's failure to rise above such petty partisanship carries undeniable risks.

Instead of the rapid progress he promised, Mr. Modi appears to be leading his nation toward an illiberal future.

Mr. Dhume is a resident fellow at the American Enterprise Institute and a columnist for WSJ.com.

How Do Palestinians Define 'Terrorism'?

By Jonathan Schanzer
And Grant Rumley

The Taylor Force Act is gathering momentum in U.S. Congress. Named for a West Point graduate who was stabbed to death by a Palestinian during a 2016 trip to Israel, the bill would cut American aid to the Palestinian Authority until it takes "credible steps to end acts of violence" and stops paying stipends to convicted terrorists.

The legislation recently passed the Senate Foreign Relations Committee with rare bipartisan support, and last week Sen. Lindsey Graham attached it to the 2018 Foreign Operations budget, all but guaranteeing it will go into effect next year.

That means the clock is now ticking for the Palestinian Authority, which receives around \$350 million from the U.S. each year. The Taylor Force Act wouldn't block humanitarian or security aid, meaning U.S. funds wouldn't be zeroed out, but our sources say the total could fall as low as \$120 million, depending

on how far Congress and the Trump administration want to go.

At the same time, the Palestinian Authority's support from other donors is dropping, putting further strain already on the government in Ramallah.

Palestinian Authority President Mahmoud Abbas and his coterie say they cannot roll back the practice of paying convicted terrorists, which dates to 1964. They say failing to pay the salaries—estimated at around \$350 million a year—would create an opening for the terror group Hamas or even Iran.

They further argue that pulling the funding would deprive thousands of families of their livelihoods, which could spark protests and threaten the Palestinian Authority's rule.

Congress will rightly reject these arguments. The Palestinian Authority's obstinacy is the reason the Taylor Force Act is so close to becoming law. Lawmakers and the White House signaled for months that a cutoff was coming, yet Mr. Abbas refused to take action.

There is one step Mr. Abbas could take to demonstrate that he is taking Congress seriously: He could issue a definition of terrorism to his own people. Remarkably, the Palestinian Authority's "Basic Law" doesn't mention terrorism. The U.S. State Department says that although the Palestinian Authority has criminalized acts of terror, it lacks legislation "specifically tailored to counterterrorism."

The Palestinian Authority's security forces do regularly raid terror cells and detain operatives across the West Bank. In late July, for example, they nabbed Hamas members in four major cities.

But the Palestinian Authority typically justifies such actions under presidential decrees, such as one that prohibits "harming public security."

In the past, Palestinian Authority forces also claimed jurisdiction under a combination of legal parameters, including the Palestine Liberation Organization's Revolutionary Penal Code of 1979 and a set of Jordanian military codes. But since Mr. Abbas's election in 2005, and especially after the 2006

elections and the devastating 2007 civil war with Hamas, he has governed almost exclusively by executive decree.

A law passed by the Palestinian Authority's parliament that defines and criminalizes terrorism would carry greater weight and almost

As the U.S. moves to cut aid, setting out a clear legal meaning would be a good step.

certainly garner more respect from the Palestinian people. But interne-cine conflict has rendered the parliament defunct, making a new law all but impossible to pass.

Mr. Abbas's decrees provide the Palestinian security forces with a broad mandate for arresting terror operatives who plot attacks against Israel or the Palestinian Authority. Mr. Abbas issued an order in 2007 that states "all armed militias and military formations... are banned in all their forms."

At times, he has condemned acts of terror, such as last month after three Arab-Israelis killed two police officers in Jerusalem. The Palestinian Authority's news agency reported that Mr. Abbas called Israeli Prime Minister Benjamin Netanyahu and "expressed his strong rejection and condemnation of the incident."

Yet the Palestinian Authority continues to pay stipends to people convicted of such attacks.

The Palestinians could buy considerable goodwill merely by defining what the Palestinian Authority considers terrorism. Setting out such a definition wouldn't change Congress's demands or prevent the Taylor Force Act from passing. But it would signal the Palestinian Authority is taking steps to address the problem.

From there, the Palestinian Authority's next step would be to cut off money to convicted terrorists, pursuant to its new definition.

The Taylor Force Act's current language demands that the U.S. State Department certify every 180 days that the Palestinian Authority is "taking credible and verifiable steps to end acts of violence against Israeli citizens and United States citizens." Defining terrorism would be a credible and verifiable step, even if a limited one.

If Mr. Abbas were to do this, the world would closely watch his next move. If Palestinian leaders continued to condemn American lawmakers for considering cuts to aid, and if the Palestinian Authority kept paying prisoners convicted of terrorism, then the exercise would mean little. Congress would have every right to withhold funds, and the Taylor Force Act could be merely the beginning.

But if Mr. Abbas truly wants to take an alternative path, defining terrorism would be a start.

Mr. Schanzer is a senior vice president at the Foundation for Defense of Democracies, where Mr. Rumley is a research fellow.

THE WALL STREET JOURNAL.

PUBLISHED SINCE 1889 BY DOW JONES & COMPANY

Rupert Murdoch
Executive Chairman, News Corp

Gerard Baker
Editor in Chief

Matthew J. Murray
Deputy Editor in Chief

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WALL STREET JOURNAL MANAGEMENT:

Suzi Watford, Marketing and Circulation;

Joseph B. Vincent, Operations;

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EDITORIAL AND CORPORATE HEADQUARTERS:

1211 Avenue of the Americas, New York, N.Y., 10036

Telephone 1-800-DOWJONES

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Notable & Quotable: Verrit

From "Verrit, the new website for Hillary Clinton superfans, explained" by Jeff Stein at Vox.com, Sept. 8:

Verrit is hard to describe because it doesn't fall neatly into any of the traditional categories for a media outlet. The site publishes blog posts featuring index card-like facts the site's editors have "verified" as true—usually, a quote from a prominent Democrat or some statistic intended to show the righteousness of a liberal policy....

Opinions masquerading as "objective" is, of course, nothing new to either the right or left. What makes Verrit so unusual is that—unlike tra-

ditional partisan media outlets—the site is not loosely affiliated with an ideology aimed at advancing a particular political belief-set out of some conviction about the world.

Instead, Verrit is explicitly created as a community for supporters of Hillary Clinton the person. The New Republic was associated with FDR's New Dealers in the 1940s; Time magazine, at its founding, spoke to the rising business class of the 1920s; more recently, Breitbart glommed onto Trump's rise. None of them were created, as Verrit is, to simply advance the perspective of a single politician (and her supporters)—especially one who is at least notionally out of public life.

LIFE & ARTS

ART REVIEW

Lusting After Beauty

An aesthetic journey through the life and times of that most famous Lothario, Casanova

BY LANCE ESLUND

Fort Worth, Texas WHO KNEW the American Modernist architect Louis Kahn had Rococo tendencies? How else do you explain the seamless integration of "Casanova: The Seduction of Europe"—a lavish romp through the Rococo—with the monumental minimalism of Kahn's Kimbell Art Museum? This exhibition's nearly 200 mostly 18th-century European artworks—boasting an abundance of shimmering surfaces, flushed bare flesh and roiling curves—feel right at home (if not dutifully tamed) among the broad arcs and neutral planes of the Kimbell's spare, concrete-vaulted galleries.

The opulent show was inspired by the life and times of that most famous Lothario, Casanova, whom we know from his 3,500-page memoirs as the man who seduced more than 100 partners, including virgins, married women, men, family members and at least one nun—an act that landed him in prison. But Giacomo Casanova (1725-1798) was much more than a Casanova.

The self-professed hedonist traveled 40,000 miles throughout Europe in search of fame, fortune and, certainly, sex. "Despite an excellent moral foundation, the inevitable fruit of the divine principles which were rooted in my heart," Casanova wrote in his memoirs, "I was all my life the victim of my senses."

Yet, he was also a man of letters and a true actor on the world stage. Casanova met or knew seemingly everyone: Voltaire, Rousseau, Samuel Johnson, Benjamin Franklin, King George III, Pope Clement XIII, Catherine the Great, King Louis XV and his paramour Madame de Pompadour—all represented here in portraits by Joshua Reynolds, Jean-Antoine Houdon and Anton Raphael Mengs, among others. Casanova was a lawyer, priest, medic, diplomat, violinist, gambler, gourmand, con man and spy. He wrote numerous works of fiction and nonfiction. He trans-



François Boucher's 'Juno Asking Aeolus to Release the Winds' (1769), above, and a portrait of Giacomo Casanova (c. 1750), by Francesco Giuseppe Casanova, right.

lated Homer's "Iliad" into its earliest version of modern Italian and may have contributed to the libretto for Mozart's "Don Giovanni." In France, he created the world's first national lottery.

A grand European tour, "Casanova" comprises paintings, sculptures, drawings, prints, furnishings, books and decorative arts, and chronologically and geographically follows Casanova's exploits in Venice (his birthplace), France and London. The show combines his

tory, games, silver, Sèvres porcelain, animal-headed tureens and a luxurious sedan chair, as well as life-size tableaus with mannequins dressed in glamorous period costumes. As much about the era and circles of Casanova as it is about the man, the exhibition explores the tastes, mores and philosophy of the Rococo period.

"Casanova" begins vividly with

an intimate gallery devoted to

Canaletto's crystalline Venetian

panoramas of the Grand Canal, the



Rialto Bridge, the Ducal Palace, the bay of San Marco. The canvases share the same palette of rose, turquoise and greenish-cream, yet each conveys unique qualities of twinkling light and water.

Next, we move indoors. Here are lovely interiors by Pietro Longhi and mythological and religious paintings featuring tumbling, bare-breasted nymphs and chubby, nude putti by Giovanni Battista Tiepolo. These hang above flamboyant tables and are flanked by jaunty gilded sconces and luxurious Venetian armchairs. No sooner have we begun, however, than we are thrust into the section "Amorous Pursuits."

Casanova, we learn, was perpetually torn between chivalry and lust." No wonder that the French painters

François Boucher, Jean-Honoré Fragonard and Jean-Baptiste Greuze dominate these galleries. Little is subtle. In Fragonard's "Two Girls Playing on a Bed With Their Dogs" (c. 1770), their nightshirts are provocatively raised. And in his "The Desired Moment" (c. 1770), two women make love as if on a bed of fire. Want more? A sexually explicit side gallery with magnifying glasses displays 12 tiny, erotic watercolor-and-gouache gems by Claude-Louis Desrais, which illustrate in encyclopedic scope various forms of sexual relations.

Following are galleries devoted to Casanova's dalliances with mysticism, numerology and the occult; his visits to Venetian convents

(holding pens that were supposed to protect wealthy girls' chastity, but which were actually "sexual playgrounds"); and his imprisonment and escape from the Doge's Palace, fleshed out here with Giovanni Battista Piranesi's fantastical etchings of prisons.

Casanova fled to France, the next focus of the show, whose centerpiece is a large gallery that reunites six monumental mythologies Boucher painted for a Parisian residence in 1769. After encountering the heated, nuanced intimacy of Fragonard, I found Boucher's big pictures of gods and flesh at once overstuffed and rote. And, frankly, by then I felt I had overdosed on nude maidens and pink-cheeked putti. A little Rococo goes a long way. And this sprawling show, which travels on to the Legion of Honor in San Francisco and the Museum of Fine Arts, Boston, also includes sections devoted to London, "The Theater of Identity," "In the Company of Great Minds," "Casanova as Author" and "The Delights of the Table."

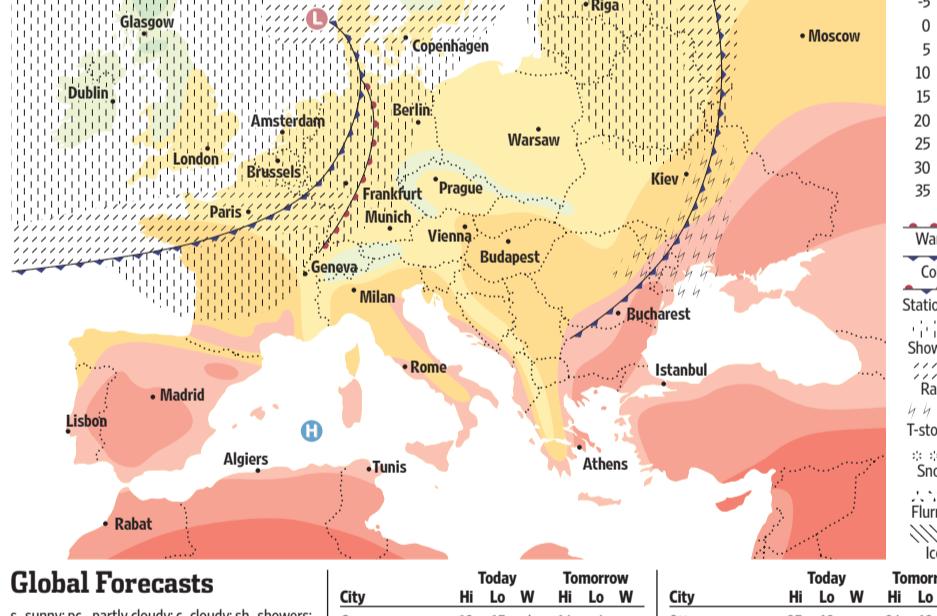
This exhibition was a bit of a gamble for its organizers, all former or current curators at the three museums presenting "Casanova." They include C.D. Dickerson, George T.M. Shackelford, Esther Bell, Virginia Brilliant, Kirk Nickel, Martin Chapman, Frederick Ilchman, Thomas Michie and Pamela Parmal. How do you sell Rococo extravagance to a contemporary audience brought up on the no-frills decor of Ikea and the design minimalism of the smartphone? Why, with sex, of course, but also the cult of the personality: Enter Casanova. This informative, seductive show has it all and then some. Just pace yourself.

Casanova: The Seduction of Europe

Kimbell Art Museum, through Dec. 31

Mr. Esplund writes about art for the Journal.

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	17	11	sh	15	10	t
Anchorage	13	10	r	12	9	sh
Athens	32	23	s	32	22	s
Atlanta	25	17	pc	26	18	s
Bahrain	46	25	s	43	24	s
Baltimore	26	17	pc	25	17	sh
Bangkok	34	26	t	35	26	t
Beijing	30	19	pc	30	20	pc
Berlin	18	11	sh	15	10	sh
Bogota	20	8	r	20	8	r
Boise	30	13	pc	21	9	pc
Boston	27	19	pc	28	18	pc
Brussels	17	10	sh	15	8	s
Buenos Aires	17	9	pc	21	8	s
Cairo	37	24	s	34	23	s
Calgary	9	3	r	9	1	r
Caracas	31	25	pc	32	26	pc
Charlotte	27	17	pc	27	16	pc
Chicago	23	14	c	25	15	pc
Dallas	33	21	s	36	23	s
Denver	32	15	pc	30	13	pc
Detroit	25	15	sh	24	15	pc
Dubai	40	30	s	40	31	s
Dublin	14	8	s	14	8	pc
Edinburgh	14	7	sh	14	7	sh
Frankfurt	19	11	sh	15	8	sh

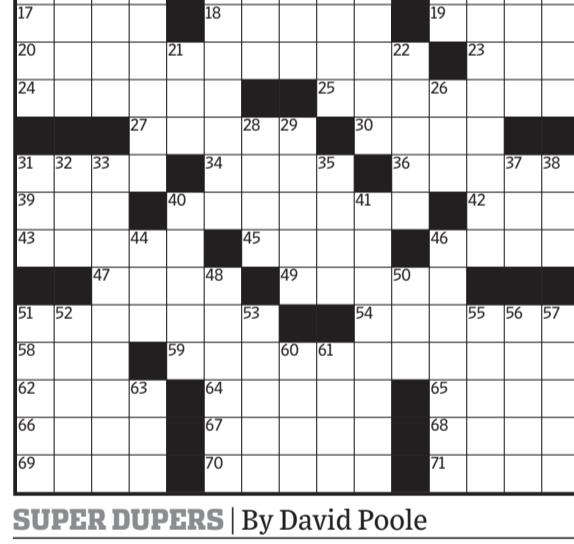
Today

Tomorrow

Today

Tomorrow

The WSJ Daily Crossword | Edited by Mike Shenk



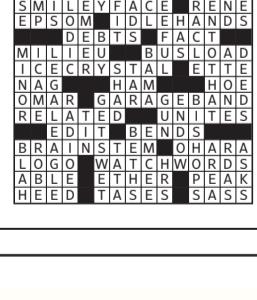
SUPER DUPERS | By David Poole

Across	
1	Flexible blackjack cards
5	Gala
10	Bonkers
14	"C U L 8 R," e.g.
15	Extra charge
16	Way off
17	Lion's place
18	Lion's warnings
19	"McMillan & Wife" org.
20	Superhero whose power is putting together IKEA furniture?
23	Furious feeling
24	Parlor piece
25	Miniature racer
27	Pacifies
30	Spooky-sounding lake
31	Brandenburg Concertos composer
34	Refrain syllables
36	Frederic's love in "The Pirates of Penzance"
39	Bachelor's last words
40	Latvia's northern neighbor
41	Santiago
42	Encouraging cheer
43	Pesto herb
45	Abbr. on a business letter
46	Song for the masses
47	Hotel employee
49	What tapping on the table might mean
51	Some busts
54	Sniggler's activity
58	Sleazy newspaper
59	Superhero whose power is keeping ships from drifting?
62	Budget's sister company
64	Modern Persian
65	facto
66	Gown designer Wang
67	San (Silicon Valley city)
68	Baseball feature
69	Single
70	Dirty campaign tactic
71	Fanning of "The Beguiled"

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

Down	
1	Bearer of the heavens
2	Stop
3	Live and breathe
4	Pre-race ritual
5	Pressing needs?
6	Revered figure
7	Brisbane greeting
8	Baylor buildings
9	Reduced
10	Crucies, New Mexico
11	Superhero whose power is getting a Microsoft suite to run?
12	"It's a Wonderful Life" director
13	General delivery?
21	culpa
22	Bellini opera
26	Alicante aunt
28	Hari
29	Laziness
31	Red Lobster freebie
32	Sooner State city
33	Superhero whose power is mixing vodka cocktails?
35	Against
37	Wood that's resistant to splitting
38	"Dancing With the Stars" judge Goodman
40	"My Fair Lady" lady
41	Cabinet department that oversees the National Park Service
44	McShane of "American Gods"
46	Household hints columnist
48	Stonewashed pants
50	Kitten comment
51	Encouraging cheer
52	Letter carrier in "Game of Thrones"
53	"Get lost!"
55	Spur
56	Like Bob Dylan's singing
57	Oft-stolen garden figurine
60	More than dislike
61	Top draft classification
63	"Here's a thought..."

Previous Puzzle's Solution



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BUSINESS & FINANCE

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Wednesday, September 13, 2017 | B1

Euro vs. Dollar 1.1967 ▲ 0.12%

FTSE 100 7400.69 ▼ 0.17%

Gold 1328.00 ▼ 0.23%

WTI crude 48.23 ▲ 0.33%

German Bund yield 0.402%

10-Year Treasury yield 2.171%

As Inflation Rises, Pound Jumps

Expectations grow for Bank of England to boost rates despite economic slowdown

BY JASON DOUGLAS
AND GEORGI KANTCHEV

LONDON—The British pound hit a one-year high against the dollar after official figures showed inflation accelerated sharply in August, reinforcing expectations that the Bank of England may soon be forced to raise interest rates despite lackluster growth.

The U.K.'s Office for National Statistics said Tuesday that consumer prices were 2.9% higher in August than a year earlier, propelled by a surge in prices for clothing



BOE Gov. Mark Carney, shown in Beijing on Tuesday, warned last month about the bank's tolerance of inflation above its target.

and footwear and the rising cost of gasoline.

The pickup in inflation, from a 2.6% annual rate in

July, was larger than economists polled by The Wall Street Journal were expecting.

The pace recorded in August

was last hit in May, and was last higher in April 2012, when price growth reached 3%.

Sterling rose 0.9% following the release of the figures to \$1.327, its highest level against the greenback since September last year. The currency rose 1% against the euro to €1.112.

The gain reflects a growing belief that BOE officials led by Gov. Mark Carney may soon need to nudge up borrowing costs to contain mounting inflationary pressure.

Mr. Carney warned last month that the BOE's tolerance of inflation in excess of the central bank's 2% target is wearing thin, despite a subdued outlook for the economy.

Growth has slowed sharply as rising prices crimp consumer spending, dwindling to

an annualized rate of 1.2% in the second quarter, less than half the pace notched up in the final three months of 2016.

Yet inflation shows few signs of abating, with sterling's recent gains only partially reversing a steep fall in the wake of the U.K.'s June 2016 decision to leave the European Union, a slide that continues to push up prices. BOE officials also fret that uncertainty over the U.K.'s future ties to the EU is restraining business investment, weighing on the economy's ability to expand without stoking faster price growth.

The U.K. central bank is expected to keep its benchmark Please see POUND page B2

♦ Heard on the Street: Gold is signaling inflation..... B10

U.K. Slows Fox's Sky Deal

By STU WOO

LONDON—The U.K. government referred 21st Century Fox Inc.'s \$15.5 billion proposal to consolidate ownership of Sky PLC to British antitrust regulators and said it likely would have them also review Fox's commitment to the country's broadcasting standards.

British Culture Secretary Karen Bradley said Tuesday she was acting partly out of concern about corporate governance at 21st Century Fox, highlighted by a series of sexual-harassment scandals at the media company's Fox News unit.

She also said Fox had been found to lack proper broadcast-compliance procedures related to transmissions of Fox News in the U.K. until regulators raised the issue.

Ms. Bradley said regulators may also want to review whether Fox is committed to British broadcasting standards, amid what third-party critics of the deal have said is Fox News' partisanship in the U.S. The review will last for six months.

The government's move to widen the review represents a new hurdle in media mogul Rupert Murdoch's yearslong bid to solidify control of British pay-TV giant Sky and further integrate his global media empire. Sky shares fell more than 4% in London after the announcement, before ending down 1.6%. Fox shares were off less than 1% in New York trading.

"We are disappointed by this further delay and that the [culture secretary] is now minded to refer the proposed acquisition to [antitrust regulators] in relation to broadcasting standards despite Ofcom, as the independent broadcast regulator, maintaining its advice that there are not sufficient concerns to justify such a reference," a Sky spokesman said, adding that Sky would cooperate with Ms. Bradley.

21st Century Fox in a statement noted that the company and Sky "have records of compliance consistent with other comparable license holders," and said it was "surprised" that Ms. Bradley was "still unable to form an opinion."

Ms. Bradley had previously said she was likely to refer the proposed merger to the country's Competition and Markets Authority on so-called media plurality grounds. The deal had already passed muster with European Union antitrust regulators, but Ms. Bradley Please see FOX page B2

INSIDE



VW'S CHIEF CONTENDS WITH SCANDAL

MANAGEMENT, B4



EQUIFAX LOBBIED TO EASE RULES

FINANCE & MARKETS, B5



Apple CEO Tim Cook on Tuesday also introduced a new Apple Watch during a presentation that included two upgraded iPhones.

Apple Has New Flagship: iPhone X

By TRIPP MICKLE

CUPERTINO, Calif.—A decade after revolutionizing the smartphone, Apple Inc. is aiming to rejuvenate its signature product with a trio of new handsets, including a flagship iPhone that comes with a larger display and facial-recognition technology.

The new smartphone, unveiled Tuesday and dubbed the iPhone X, is one of the company's most anticipated in years. Investors, betting the iPhone X can revive flagging iPhone sales in China and trigger upgrades across the U.S. and Europe, have pushed Apple's share price to record highs in recent months.

"It is the biggest leap for

ward since the first iPhone," said Chief Executive Tim Cook, who unveiled the iPhone X at the company's annual product showcase.

Apple on Tuesday also revealed the iPhone 8 and iPhone 8 Plus, upgrades to last year's iPhone 7 and 7 Plus. And it announced a new Apple Watch with cellular connectivity and an Apple TV with ultra-high definition functionality.

Apple is threading a needle with the three new phones. It is trying to generate excitement with the iPhone X, which it said will cost \$999, while still getting people to buy the upgraded phones—starting at \$699 for the iPhone 8 and \$799 for the iPhone 8 Plus.

While the upgraded phones

will be available Sept. 22, the iPhone X won't start shipping until Nov. 3—much later in the year than new iPhones typically start shipping.

Apple held its annual product showcase for the first time at Steve Jobs Theater on a new \$5 billion campus.

The iPhone X is the first new iPhone design since 2014 and hits the market at a time when Apple's smartphone growth has slowed as consumers hold onto devices longer and competition from low-priced rivals increases. Apple's share of the global smartphone market slipped to 14.5% last year from 19.4% in 2012, according to Strategy Analytics, a market-research firm.

The iPhone X—which also

boasts 3D sensors and a dual-lens camera system—arrives amid questions about Apple's ability to innovate. Android rivals such as Samsung Electronics Co. have leapfrogged Apple on smartphone design in recent years, introducing larger, OLED handsets and water resistance. Meanwhile, smartphones from China are closing the gap offering similar features at far lower prices.

Meanwhile, new products such as the Apple Watch have failed to replicate the sales momentum of the iPhone and iPad.

"Apple had a good three- to four-year head start, but now

Please see APPLE page B3

♦ It's time for an update to the Apple Watch..... B3

Please see FOX page B2

INDUSTRY FOCUS

U.S. Chicken Suppliers Pursue Speedup

By JACOB BUNGE

U.S. chicken companies slaughter and process about 170 million chickens each week. They want to do it faster.

Meatpackers are seeking U.S. Department of Agriculture approval to raise processing-line speeds by about 25%, aiming to keep pace with growing domestic and international demand for poultry. The National Chicken Council, which represents poultry companies, said in a petition filed this month that would mean processing at least 175 birds a minute, up from most plants' current limit of 140.

The speed increase, if granted, would reverse a 2014 Obama administration decision to limit U.S. poultry plants to the slower speed. Union officials, academics and some meat inspectors are pushing back, warning that a

Companies have been stepping up their chicken production, but say restrictions make it hard to meet demand. U.S. broiler chicken output:



THE WALL STREET JOURNAL.

speedup would make it harder to ensure food and worker safety.

The petition comes as companies, including Tyson Foods Inc. and Sanderson Farms Inc. are planning new plants that will each process more than one million birds a

pounds of poultry meat.

"This change will not affect food safety—if anything, it will enhance it," wrote Michael Brown, the National Chicken Council's president. He suggested that poultry plants could hire more workers, automate more tasks and change plant layouts to ensure employees' safety. USDA officials said they are considering the petition.

Consumer groups and meat-worker unions warn that moving carcasses more rapidly through processing lines will add risk to jobs already prone to cuts, infection and repetitive-motion injuries. Meat-worker injury and illness rates run about 64% above the national average, according to the U.S. Bureau of Labor Statistics, outpacing mines and construction sites.

"What we know currently in these plants is that there are very high injury rates,"

Please see MEAT page B2

INDEX TO BUSINESSES

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

A	F	S
AAC Technologies Holdings.....B10	ForRent.com.....B9	Samsung Electronics..B3
ADT.....B3	Geisinger Health System.....B6	Sanderson Farms.....B1
Alphabet.....B4	Goldman Sachs Group.....B1,B5	Scripps Networks Interactive.....B4
Amazon.com.....B3	Greenwoods Asset Management.....B10	Sky.....B1
Apollo Global Management.....B3	J	Sony.....B3,B10
Apple.....B3,B10	JD.com.....B3	SunEdison.....B3
AT&T.....B3	J.P. Morgan.....B5	T
B	TIAA.....B9	TPG.....B9
Blackstone Group.....B3	JD.com.....B3	TransUnion.....B5
C	M	21st Century Fox...B1,B4
CBS.....B4	Microsoft.....B3	Tyson Foods.....B1
Citigroup.....B1	Murata Manufacturing.....B3	V
CoStar Group.....B9	N	Verizon Communications.....B3
D	NXP Semiconductors..B3	Viacom.....B4
Deutsche Bank.....B9	O	Vivint Solar.....B3
Discovery Communications.....B4	Oceanwide Asset Management.....B10	Volkswagen.....B4
Dow Chemical.....B2	P	Volvo Car.....B2
Dow Corning.....B2	Pinpoint Asset Management.....B10	W
DowDuPont.....B2	Providence Equity Partners.....B9	Walt Disney.....B4
E	Q	Y
Equifax.....B5	Qualcomm.....B3	Yelp.....B4
Erste Group Bank.....B5	Z	Zeal Asset Management.....B10
Gerspach, John.....B1		
Gorain, Seamus Mac..B5		

INDEX TO PEOPLE

B	J	R
Breen, Edward.....B2	Josey, Ronald.....B9	Reinhart, Carmen.....B5
Brown, Michael.....B1	L	Rogoff, Kenneth.....B5
C	Liveris, Andrew.....B2	Rombouts, Jeroen.....B5
Choy, Chris.....B10	M	Rose, Jonathan F.P.....B9
F	Michalski, Mark.....B6	S
Fairbank, Richard.....B5	Müller, Matthias.....B4	Schwartz, Harvey..B1,B5
G	P	Smith, Richard.....B5
Gamble, John.....B5	R	U
Gerspach, John.....B1	Painter, Stan.....B2	Unnithan, Rekha.....B9
Gorain, Seamus Mac..B5	Regan, Rebecca.....B9	W
		Werner, Joel.....B10

California Wants Say on Emissions

BY MIKE SPECTOR

California officials, long advocates of demanding clean-air regulations, said they have been sidelined from discussions in recent months between the Trump administration and auto makers that are angling for relief from stringent fuel-economy standards.

The Golden State's clean-air officials hold considerable sway in setting emissions standards requiring auto makers to sell vehicles that get increasingly better mileage. California holds an Environmental Protection Agency waiver that allows the state to set its own tougher regulations than many other states follow.

California's Air Resources Board and other state officials were dismayed when the Trump administration reopened a review of standards earlier this year, and have vowed to fight changes. Since then, they have openly wondered when they will join discussions about possible revisions. A Trump administration official contacted CARB Chair Mary Nichols on Monday to discuss inclusion of the agency in future talks, a person familiar with the matter said.

Auto makers want to tweak current regulations while keeping California on board, lest they face conflicting standards across state lines.

California's rule makers were influential architects behind the regulations currently on the books, agreeing to a single national standard that called for ambitious targets on reducing emissions and reliance on gasoline. They also want to spur electric-vehicle sales. CARB spokesman David Clegern had no immediate comment on the call to Ms. Nichols. He has said that the agency had "not been involved in discussions" aimed at re-thinking U.S. rules.

California's initial absence from discussions could add to consternation among state officials as the Trump administration and auto-industry representatives seek their agreement on possible changes to current regulations. Gov. Jerry Brown in March called the administration's decision to reopen the emissions review "an unconscionable gift to polluters."

The EPA review was undertaken with the Transportation Department as a way to analyze the feasibility of regulations first set in 2012 and reaffirmed in January by the Obama administration, just before President Donald Trump's inauguration.

Those regulations, governing emissions and often expressed in mileage terms, expect auto makers to sell vehicles averaging roughly 50.8 miles a gallon, or 36 mpg in real-world driving, by 2025. The review faces an April deadline, affect-

Burning Fuel

Fuel economy of vehicles sold in the U.S. has hovered around 25 mpg amid cheap gasoline.

Source: University of Michigan Transportation Research Institute
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ing regulations set for as soon as 2021.

Getting California's buy-in is crucial as it and other states adopting its standards represent roughly 40% of the U.S. car market. New York's attorney general and other top state law-enforcement officials wrote to EPA Administrator Scott Pruitt earlier this year vowing to take the agency to court if U.S. standards are weakened. California lawmakers earlier this year enlisted former Obama administration Attorney General Eric Holder to fight potential legal battles.

Representatives of car companies have attended at least a dozen meetings with either White House or EPA officials in Washington to discuss their concerns, said people familiar with the matter. The Trump administration decided to hear from individual auto makers on compliance plans before approaching California officials to start a second phase of the discussions, one of the people said.

The plan was to get a handle on auto makers' concerns first before hearing from California officials, and the intention wasn't to freeze the state out, this person said.

An EPA spokeswoman said technical staffs at both agencies have met. "We are happy to meet with any and all interested stakeholders, including states," she said.

Auto makers, which lobbied the Trump administration to reopen a so-called midterm evaluation of standards, contend future targets are lofty amid cheap gasoline that is spurring demand for pickup trucks and sport-utility vehicles. Sales of electric cars are less than 1% of total U.S. industry sales.

"A lot has changed since 2012," said Julia Rege, environment and energy director at Global Automakers, a Washington lobbying group representing foreign auto makers with U.S. operations, during an EPA hearing this month.

—John D. Stoll contributed to this article.

BUSINESS & FINANCE

DowDupont Alters Breakup Plan

BY DAVID BENOIT

Two weeks after its formation, **DowDuPont** Inc. is altering its plan to splinter into three companies, bringing to an end the threat of a fight with as many as four activist investors.

The company, formed by the union of Dow Chemical Co. and DuPont Co. on Aug. 31, has long planned to split into separate companies focused on agriculture, specialty-chemical products and materials. The plan was to break up over 18 months.

The new plan moves businesses with more than \$8 billion in annual revenue from the materials spinoff, which is to house the legacy Dow operations and be named Dow, into the specialty-chemical concern.

The move will separate into parts what had been **Dow Corning**, a pioneer in silicone technology that was taken over by Dow last year, and put some of it into each of the specialty and materials companies. Previously, the silicone business was to be housed entirely in the new Dow, which Dow executives argued was the best fit; that represented the crux of the debate with the activists.

Both the investors and Dow executives appear to have gotten at least some of what they wanted. DowDuPont shares



Ex-Dow CEO Andrew Liveris is DowDuPont's executive chairman.

were up 2.5% late Tuesday on the news, first reported by The Wall Street Journal.

Shareholders, including activists Trian Fund Management LP, Third Point LLC, Glenview Capital Management LLC and Jana Partners LLC, had pressed for a dramatic reshaping of the breakup, particularly as it relates to the silicone business.

Dow Chief Executive Andrew Liveris had said in a July interview with the Journal that "noisy shareholders" were focused too much on short-term results, but added that he was open to any outcome that produces value. Dow executives believe the growth in silicones since Dow took over Dow Corning is evidence of the sales and research opportuni-

ties created by putting the two companies together.

On Tuesday, Mr. Liveris said he fully supported the changes.

Meanwhile, the investors each applauded the moves, the result of a five-month review led by consultants at McKinsey & Co., which talked with 25 of the biggest shareholders.

"It takes guts for board members to admit they need a do-over, and we're happy the board members here took the time to listen to shareholders and improve their spinoff plans," Jana founder Barry Rosenstein said in an email.

Glenview founder Larry Robbins, who rarely publicly criticizes companies, said in an interview the end result of the review was evidence the "noisy" shareholders were

onto the right conclusion.

The new Dow will house products aimed at packaging, infrastructure and consumer care and now have roughly \$40 billion in annual revenue, the people said. The specialty-chemical business will focus on electronics and imaging, transportation, construction and nutrition, with some \$20 billion in revenue.

The agriculture business, with about \$14 billion in revenue, will remain the same.

The review process included directors who made site visits to several company plants and sought to incorporate changes to the markets and the company's portfolio in the nearly two years since the roughly \$60 billion merger and the split were announced in December 2015.

Mr. Liveris, who is executive chairman of the combined company, is in charge of setting up the new Dow, though he will retire next summer.

DuPont's Edward Breen, now CEO of DowDuPont, is in charge of establishing the other two companies and has yet to declare his post-split plans. On a conference call with analysts Tuesday, Mr. Breen left open the possibility of further breakups down the road for the specialty business, which investors and analysts have suggested.

—Dana Mattioli contributed to this article.

MEAT

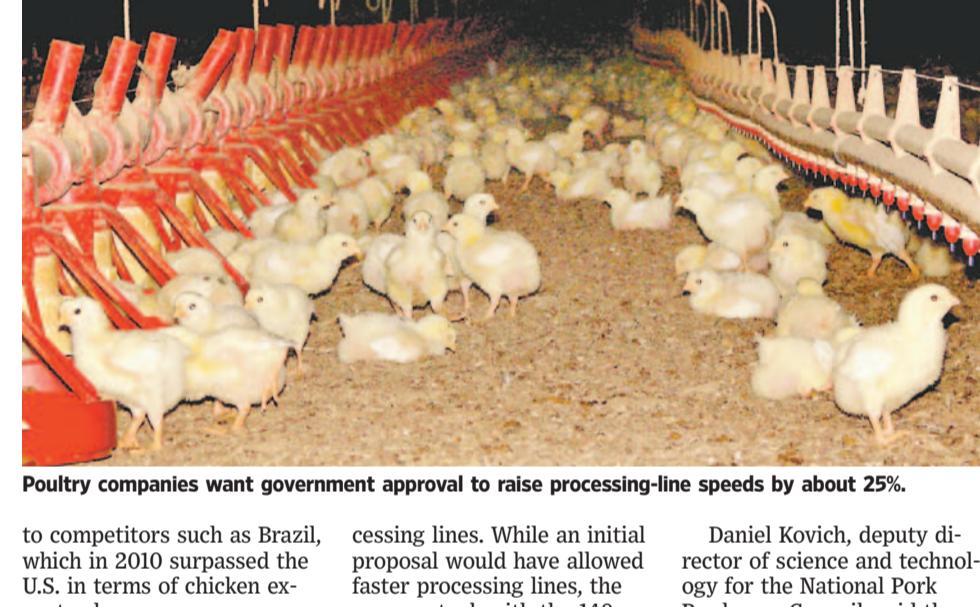
Continued from the prior page
said Celeste Monforton, a professorial lecturer at George Washington University who researches worker safety. "I have no reason to believe that increasing line speeds is somehow going to make things better."

Meat-industry officials argue that poultry plants already running at the higher speeds—under a pilot program now in its 10th year—have shown fewer instances of carcass contamination, while helping plants run more profitably and saving money for the USDA's meat-inspection division.

Overall, the industry's illness and injury rate has fallen 81% from 1994 to 2015, and many sped-up functions would be performed by machines, the National Chicken Council said in its petition to the USDA.

The Washington-based trade group said boosting processing-plant speeds aligns with President Donald Trump's regulatory-overhaul agenda and his goal of expanding domestic manufacturing.

Running plants more efficiently, the group said, would help the U.S. reclaim international chicken-meat sales lost



Poultry companies want government approval to raise processing-line speeds by about 25%.

to competitors such as Brazil, which in 2010 surpassed the U.S. in terms of chicken export sales.

The USDA in 2014 revamped its process for inspecting U.S. poultry plants, aiming to ensure the safety of about 9 billion chickens processed for food annually.

That plan entailed new steps for processors to prevent contamination, requiring companies to test products multiple times—though it drew criticism for pulling some USDA inspectors away from directly supervising pro-

cessing lines. While an initial proposal would have allowed faster processing lines, the agency stuck with the 140-bird cap after public push-back.

Last June, the USDA submitted for internal review what is expected to be a similar revamp to pork-plant oversight. Pork-industry officials expect updated rules to allow pork plants to operate at faster speeds—up to 1,300 hogs per hour, versus about 1,100 currently—that have already been tested at some U.S. plants.

Daniel Kovich, deputy director of science and technology for the National Pork Producers Council, said the meat industry wouldn't speed up their plants without first taking steps to ensure food and worker safety, and animal welfare laws would still apply.

Union officials, academics and some USDA inspectors plan to oppose potential speed increases. "No one benefits but industry," said Stan Painter, a USDA meat inspector for more than 30 years and chairman of a food inspectors' union.

FOX

Continued from the prior page
had raised questions about whether it would give one organization too much power in the British media.

Mr. Murdoch and his family are major shareholders of both Fox and News Corp, which owns a number of British newspapers such as the Times of London, the Sunday Times and the Sun, the U.K.'s best-selling tabloid. Fox already owns 39% of Sky. It is seeking to buy the other 61% for £11.7 billion (\$15.4 billion). News Corp also owns The Wall Street Journal.

Ms. Bradley said Tuesday she decided to ask the CMA to review the merger on plurality grounds, but also said she was now "minded to" refer the deal to the same regulator for a different reason: to determine whether Fox held a "genuine commitment to broadcasting standards." The "minded to" characterization is used by the government to signal an official intention, but

it isn't binding.

Ofcom, Britain's media regulator, had previously recommended against a referral based on adherence to British broadcasting codes, including rules for TV content and considerations like fairness and privacy.

The culture secretary specifically cited a determination made earlier this year by Ofcom that Fox didn't have adequate compliance procedures in place to broadcast Fox News in the U.K. until after regulators raised the issue. At the time, Fox said it was "pleased that Ofcom recognizes that Sky, under full 21st Century Fox ownership, would remain a fit and proper holder of broadcast licenses."

Ofcom didn't specify which procedures were lacking. Fox last month stopped broadcasting Fox News in the U.K., citing low viewership.

Ms. Bradley also cited questions of corporate governance in the wake of the sexual-harassment scandals at Fox News.

The unit's top executive, Roger Ailes, resigned last year

as chairman amid a company probe related to multiple sexual harassment claims against him. Mr. Ailes, who died earlier this year, denied any wrongdoing.

21st Century Fox has said the company had no knowledge of sexual-harassment allegations against Mr. Ailes or settlements of those complaints until former Fox News anchor Gretchen Carlson filed a lawsuit against Mr. Ailes.

A U.K. official cited questions of corporate governance in the wake of scandals.

POUND

Continued from the prior page
interest rate steady when it announces its latest policy decision Thursday, but George Buckley, an economist at Nomura, said he believes the BOE could push up borrowing costs as soon as November. Other

economists think a move early next year is more likely.

The BOE's soft-growth and high-inflation dilemma contrasts with the landscape faced by central banks including the U.S. Federal Reserve and the European Central Bank, which are instead facing a puzzling mix of robust economic growth yet surprisingly

weak inflation.

The U.K. figures come after Prime Minister Theresa May's government late Monday won a Parliamentary vote on a critical piece of domestic legislation needed to put Brexit into effect.

Her plan still faces significant hurdles in the months ahead, when lawmakers will

get a chance to review and potentially amend her proposals more thoroughly. Negotiations between London and Brussels on the terms of Britain's divorce, meanwhile, have made only limited headway, and are due to resume later this month.

—Toby Luckhurst contributed to this article.

TECHNOLOGY

Owner Sizes Up Vivint For IPO

By DANA MATTIOLI

Blackstone Group LP is preparing for an initial public offering or sale of smart-home technology company Vivint.

Blackstone recently invited investment banks to pitch for a dual-track process that could lead to an IPO or sale of Vivint, people familiar with the matter said. A deal could value Vivint at more than \$3 billion, or \$6 billion including debt, some of them said. The latter would be about three times what Blackstone paid for the company five years ago.

Vivint sells smart locks, security cameras, burglar-detection systems and other such items and services. Demand for connected homes, cars and other gadgets is rising as the functionality of hand-held devices improves and consumers spend more time on them.

Last year, **Qualcomm** Inc. agreed to buy rival **NXP Semiconductors** NV for about \$40 billion, a deal that would give the tech company more exposure to the automotive industry, a major area of growth for chip and software providers.

Home security has been a lucrative niche for private-equity firms lately.

Apollo Global Management LLC last year bought Vivint competitor **ADT** Corp. in a nearly \$7 billion deal, and is already preparing an IPO that could value the company at well over \$15 billion, including debt, The Wall Street Journal has reported.

Two years after it bought Vivint in 2012, Blackstone took sister company **Vivint Solar** public.

Last year, the maker of solar panels terminated a planned merger with **SunEdison** Inc. after SunEdison's board began investigating claims from both a former and a current employee challenging the accuracy of SunEdison's financial disclosures.

Private-equity firms often run a dual-track process when they are ready to exit an investment, in part because it can give them more leverage with potential acquirers. Their preference is usually to sell the entire company, if they can get the right price, an outcome that may be all the more desirable now given recent volatility in the IPO market.

Microsoft Executive Joins Rival

By LIZA LIN

SHANGHAI—In a blow to **Microsoft** Corp., a top cloud-computing executive in China has been hired by **JD.com** Inc., the Chinese e-commerce company that is ramping up its cloud-services business.

Samuel Shen, a Microsoft veteran of 24 years and the former general manager of its cloud and enterprise business in China, took the job as president of JD.com's cloud unit, the Beijing-based company said in a statement Tuesday.

Mr. Shen had led Microsoft's China cloud service, known as Azure, since 2015. He was also chief operating officer at Microsoft's Asia-Pacific Research and Development Group, where he led Microsoft's development strategy in big data and the so-called Internet of Things.

Microsoft didn't respond to a request for comment.

Cloud platforms, which provide data storage, computing and networking resources over the internet, reduce the need for on-site servers. Foreign companies such as Microsoft and **Amazon.com** Inc. provide services in China through joint ventures with local partners.

The cloud unit of Alibaba Group Holding Ltd. is China's biggest provider of these services with about 40% market share. Microsoft has about 5%. JD.com's market share was too small to be ranked in a recent IDC survey.

Battery Maker Aims to Power Up

After purchase of Sony unit, Japan's Murata sets course for capacity expansion

By TAKASHI MOCHIZUKI

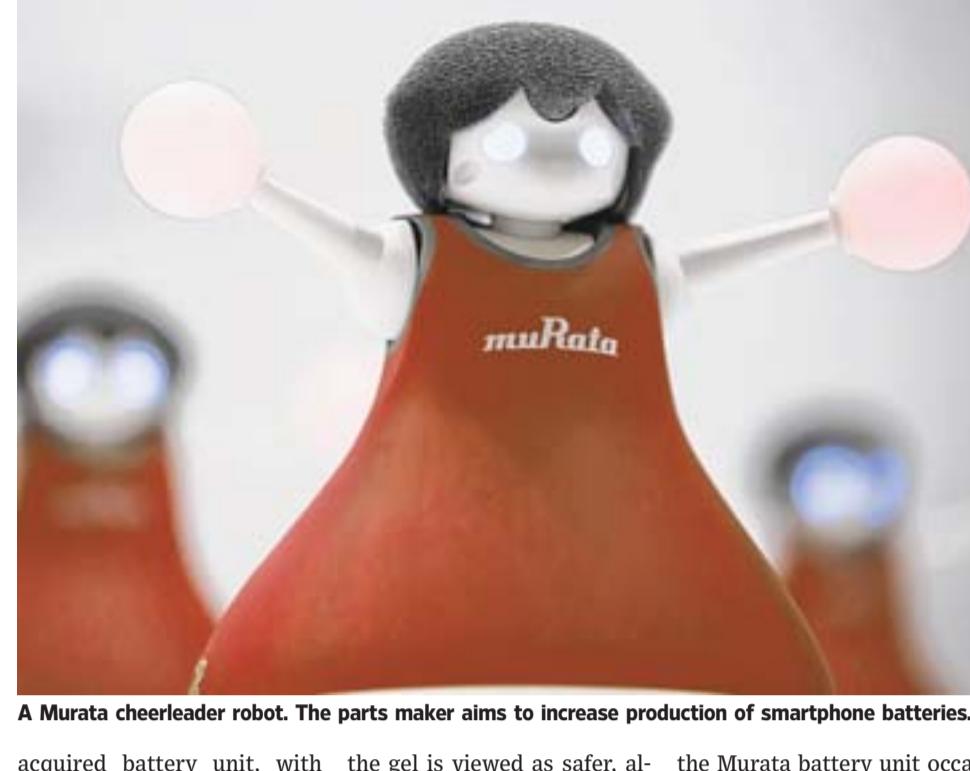
KYOTO, Japan—A new phone-battery push by one of Japan's biggest parts makers is likely to increase competition among the companies that power smartphones from **Apple** Inc. and **Samsung Electronics** Co.

Murata Manufacturing Co. on Sept. 1 completed its roughly \$160 million acquisition of **Sony** Corp.'s battery division, which introduced the first commercial lithium-ion battery a quarter-century ago. The parts maker's president, Tsuneo Murata, said he plans to boost capacity in hopes of luring "a North American customer," a phrase often used by Japanese suppliers in the sector when referring to Apple.

Tiny parts from Murata that control electricity flow, among other functions, are already found in most smartphones, including Apple's. In its annual supplier report, the iPhone maker lists 24 Murata factories, including 14 in Japan.

"We are already doing big business with a North American customer, and we believe their trust in us is high," Mr. Murata said during an interview Monday, ahead of Apple's introduction of its new iPhones on Tuesday. "We will respond to such expectations by investing actively."

Murata has said it would spend more than ¥50 billion (\$457 million) over the next few years to beef up the newly



A Murata cheerleader robot. The parts maker aims to increase production of smartphone batteries.

acquired battery unit, with about half of the sum going toward increasing production capacity for batteries used in smartphones and tablets.

Batteries can make or break a smartphone based on safety and their ability to pack a lot of charging power in a small space. Samsung had to pull its Galaxy Note 7 smartphone last year after consumer complaints that the phones caught fire.

The former Sony unit now owned by Murata is known for using a gel instead of a liquid in the part of the battery where charged particles flow. Mr. Murata said the battery drew greater interest from smartphone makers after the Samsung incidents because

the gel is viewed as safer, although it tends to reduce charging speed.

"The industry is paying more attention to the safety aspect of the battery instead of focusing on storing more energy in the same space," said Mr. Murata, the 66-year-old son of the company's founder.

In its push to win more Apple business, Murata faces competition from Amperex Technology Ltd., a Hong Kong-based unit of Japan's TDK Corp., as well as South Korea's LG Chem Ltd. Current iPhones, including those released Tuesday, use batteries from those two companies, people familiar with the supply chain said.

When it was part of Sony,

the Murata battery unit occasionally supplied Apple for the iPhone but never became a major supplier, engineers at the unit said.

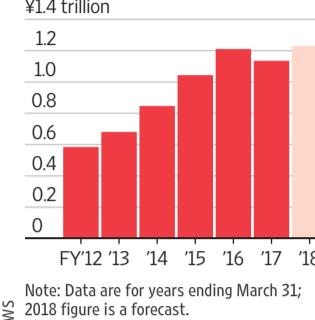
"When at Sony, the unit wasn't able to do business it could have done because of the capacity issue," Mr. Murata said. "We won't hesitate in making such investments."

Samsung had been using TDK batteries for some of its products, including the Galaxy Note 7, but switched to those made by the former Sony unit after last year's recall, said people familiar with the supply chain.

Samsung said in January that the fire problem was caused by the battery pack and that no issues were found

Sales Call

The spread of smartphones has helped boost revenue for Murata Manufacturing.



Note: Data are for years ending March 31; 2018 figure is a forecast.
¥1 trillion = \$9.14 billion
Source: the company

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with the handset and its software. A TDK spokesman said the company can't comment on issues related to its customers.

Mr. Murata said capacity would start rising next year and he was willing to accelerate the \$457 million investment plan depending on market conditions. "Customers are demanding that we boost supply as soon as possible," he said.

The company has plenty of financial muscle: With annual sales of more than \$10 billion, Murata sports a market capitalization of about \$34 billion.

Still, Mr. Murata expressed caution about relying too heavily on smartphones. The company wants to reach new customers such as the makers of connected cars and power tools, he said.

The company also says its batteries and systems could help homeowners store and use electricity generated by rooftop solar panels.



The theater sits on a hill on the new \$5 billion Apple Park campus in Cupertino, Calif., and hosted Tuesday's product launch.

Steve Jobs Theater Makes Debut

By CHRISTINA PASSARIELLO

CUPERTINO, Calif.—**Apple** Inc. on Tuesday accompanied its annual ritual of new product revelations with a different kind of unveiling, the first public look inside the Steve Jobs Theater on the technology giant's new campus.

Apple welcomed nearly 1,000 guests to the glass-walled auditorium named after Apple's co-founder at the \$5 billion Apple Park, which has been under construction for years. Work on the site reached a crescendo in recent months to ready it in time for the iPhone event, amping up anticipation for a product launch that is critical to Apple's future.

This year's event featured a pricier new smartphone dubbed the iPhone X with advanced new features to mark the product's 10th anniversary.

Cloud platforms, which provide data storage, computing and networking resources over the internet, reduce the need for on-site servers. Foreign companies such as Microsoft and **Amazon.com** Inc. provide services in China through joint ventures with local partners.

The cloud unit of Alibaba Group Holding Ltd. is China's biggest provider of these services with about 40% market share. Microsoft has about 5%. JD.com's market share was too small to be ranked in a recent IDC survey.

as well as two updated versions of last year's iPhone 7, a new version of the Apple Watch and other items.

In recent years, Apple hosted its September event in rented venues around the Bay Area because it had outgrown its longtime headquarters nearby Apple Park.

That drifting from its roots coincided with what some observers have called a period of relative stagnation in which Apple had no new breakthrough products, and made incremental changes to its cash-cow smartphone.

Apple hopes that centralizing its teams on the campus will lead to closer collaboration—and the iPhone event was the grand kickoff.

"We've been waiting for this for a long time," says Carolina Milanesi, an analyst with Creative Strategies who attended the Tuesday event.

iPhone X ditches the device's popular home button and Touch ID, the fingerprint sensor used to unlock the phone.

To unlock the iPhone X, users raise it, look at it and allow the facial-recognition system called Face ID to verify their face.

Apple marketing chief Phil Schiller said Face ID learns a user's face, even if the user changes hair style, wears

"Will [the campus] make a difference to how Wall Street sees Apple? Of course not, but there is excitement and the atmosphere will be different."

The Steve Jobs Theater is situated on a hill on the new campus, overlooking the main ring building that is designed to house Apple's core divisions.

Outside, the smell of fertilizer mixed in with mulch permeated the air from the landscaping that has taken place this summer.

From the exterior, the theater's metallic carbon-fiber roof appears to levitate over the 20-foot-tall glass cylinder. The stage, seating and other exhibit space where guests can play with Apple's new devices are all located underground.

Steve Wozniak, who co-founded Apple with Mr. Jobs in the 1970s, was one of the guests Tuesday. His immediate

reaction was, "Wow, this is not normal," he said.

He said the design reflected Steve Jobs's Apple, capturing his design instincts.

Its primary use will be for product launches, said Dan Whisenhunt, Apple's head of real estate and development. It also will host seminar talks, small concerts and meetings led by Apple executives that can be simulcast everywhere on campus.

The last two September events have taken place at the Bill Graham Civic Auditorium in San Francisco, a larger space that allowed Apple to invite 2,000 people, including school groups. While the smaller Steve Jobs Theater means cutting the guest list in half, "this venue gets us back to the sweet spot," Mr. Whisenhunt said.

—Tripp Mickle contributed to this article.

hasn't kept the same appearance for three years.

The iPhone 8 and 8 Plus feature what Apple billed as a new design, made of glass on front and back, as well as louder speakers, faster processors and upgraded cameras. All three handsets offer wireless charging and feature new gyroscopes and accelerometers to improve augmented-reality experiences on the devices.

It's Time For an Update To Watch

By WILSON ROTMAN

The Apple Watch got its second major update since its spring 2015 launch. While it still has the same recognizable rounded-square shape, the \$399 Watch Series 3 now connects directly to cellular networks, as expected. It doesn't require an iPhone, or even a Wi-Fi network, to function.

Apple says the new Watch has a new processor that is 70% faster and a custom wireless chip for Bluetooth and WiFi. The device has a barometric altimeter for measuring things such as flights of stairs. Apple intends for it to be used for new skiing and hiking apps.

Like the previous Watch Series 2, the Series 3 has built-in GPS to track running and other long-distance workouts. For people who don't want the cellular version, there is a Series 3 without it for \$329.

An Apple Watch that connects to a 4G LTE wireless network means people can go longer without needing to carry an iPhone. You can make calls, stream music and talk to Siri.

The cellular connectivity is packed in tight, facilitated by a tiny electronic SIM card—not removable, but software configurable. The end result is that the Series 3 case is the same size as the Series 2 case, said Jeff Williams, Apple's chief operating officer.

Apple hasn't fully decoupled the Watch from its smartphone master. You still need an iPhone to configure the apps on the device. In fact, the phone number is the same as your iPhone.

New software makes more use of the heart-rate monitor built into all Apple Watches. Users will get more heart-rate data on demand and see a picture of their heart rate throughout the day.

Other features were introduced in June with Apple WatchOS 4, which goes to all Apple Watch customers on Sept. 19. People can preorder the Apple Watch Series 3 on Sept. 15; it will be available in stores Sept. 22.

AT&T Inc. and **Verizon Communications** Inc. say adding Apple Watch Series 3 to your service plan for number sharing will cost \$10 a month.

MANAGEMENT

WORKAROUNDS

Optimistic Gen Z Is On the Job Now

As the postmillennial smartphone generation begins joining the workforce, bosses would be wise to prepare for young technophiles with an inclusive view of the workplace and a hunger for employers whose values reflect their own.

That is according to a new survey conducted in July by EY at the International Intern Leadership Conference, the business consultancy's annual gathering of interns. The survey of 1,600 Generation Z respondents, born in the mid-1990s or later, aimed to gauge the group's perspective on the future of work, said Larry Nash, the company's U.S. recruiting leader.

The survey's findings suggest the cohort places a priority on "building something better and leaving something better for future generations," Mr. Nash said. "They want to have a purpose in their work."

Gen Z's optimism has been reflected in other surveys. This year Goldman Sachs Group Inc. surveyed 1,700 of its summer interns and found the vast majority planned to get married or form domestic partnerships and have children. Some 83% also expected to buy a house by the time they were 40 and 63% planned to buy a car by age 30.

The cohort born in the mid-1990s thinks AI and robotics will enhance their work.

The consulting firm BridgeWorks estimates that Gen Z accounts for 61 million people in the U.S.

Mr. Nash said managers intent on attracting and retaining these young workers should find ways to take advantage of their talents and understand their career values.

Generation Z's inclusiveness is an asset employers can leverage, Mr. Nash said. More than three-quarters of those surveyed said their ability to work well with people from different backgrounds and cultures set them apart from older workers.

These young workers seek out employers with similar values and opportunities to make a difference in their work, Mr. Nash said.

Mr. Nash suggested providing these young workers with the opportunity to give back to their communities and use their skills in a philanthropic way. Some 27% of respondents assigned priority to devoting time to their communities when looking for an employer, according to the survey.

An affinity for technology is another Generation Z trait. In contrast to fear among older workers that automation will cost them their jobs, Generation Z is excited about artificial intelligence and robotics, with three-quarters of respondents saying they expect new technology to spur an evolution of human work. Two-thirds think it will increase their productivity, and more than half think it will allow them to focus on more-valuable work. "This is a generation that grew up being comfortable with technology right away," Mr. Nash said.

—Francesca Fontana

VW Chief Contends With Scandal

Matthias Müller says he is trying to accelerate change at the auto maker

By WILLIAM BOSTON

WOLFSBURG, Germany—Almost two years after U.S. authorities said Volkswagen AG had been cheating for a decade on emissions tests, Chief Executive Matthias Müller urges workers at a town-hall meeting to be ready for rapid shifts in the auto industry.

"But how can you make sure that the leading executives change?" asks one of the 300-odd employees attending the event.

"You're asking the hardest question," Mr. Müller responds.

Since becoming CEO in September 2015, the former Porsche boss estimates he has spent as much time managing the emissions-cheating crisis as managing the business.

In the U.S. alone, the affair has cost the company nearly \$25 billion in fines, penalties and compensation, and litigation in other countries is expected to drag on for a decade.

The company pleaded guilty to criminal charges in the matter, and two Volkswagen employees in the U.S. have pleaded guilty to conspiracy to defraud the U.S. government and to violate U.S. environmental law.

One has been sentenced to just over three years in prison, and another awaits sentencing.

In an interview, Mr. Müller, 64 years old, talked

about managing the emissions crisis, new competition, and shifting political winds.

Edited excerpts:

The Wall Street Journal: It's been two years since the allegations were made public. How would you grade VW's progress so far?

Mr. Müller: There is still litigation that hasn't been resolved yet. We've reached agreements with the U.S. We have agreements with England, South Korea, the Germans and Europeans. Overall, I think we managed the process well.

WSJ: When it comes to changing VW's corporate culture, how far have you come?

Mr. Müller: That's very hard to quantify. We now have board responsibility for legal [compliance] and integrity. We've changed a lot of processes, not just technical but also organizational. I'd like to see an acceleration of the pace of change because such a large organization is sluggish.

WSJ: Before the scandal, your name was discussed for the CEO's job. What was your thought process as you were asked to leave Porsche and take up the reins at VW during the company's worst crisis?

Mr. Müller: The whole thing happened within 48 hours. But what do you do? You have to decide, and the choice was to remain in my comfort zone at Porsche and enjoy the next five years or try to help this company.

WSJ: How do you ensure



ALEXA VACHON FOR THE WALL STREET JOURNAL

that your 150 or so top-level executives aren't constantly suspected of wrongdoing?

Mr. Müller: This atmosphere of suspicion is something we are going to have to live with for a while. As long as these [investigations] haven't been cleared up, then there is a kind of blanket suspicion, and the public thinks the entire company is criminal.

The company is not criminal as a whole. Parts of the company engaged in criminal behavior.

WSJ: Volkswagen is now taking on tech giants. Why does a global auto maker have to run ride-hailing or car-sharing businesses?

Mr. Müller: We offer these services to avoid the risk of becoming a Tier 1 supplier for Google and Uber and others. The demand for mobility is changing; many people don't want to buy their own car. We still want them to come to us. If we lose the contact to the customer, that would be the beginning of the end.

WSJ: With Brexit and

"America first," is globalization at risk?

Mr. Müller: The prosperity that we enjoy, at least in the developed countries, is a result of globalization. The challenge is to ensure that the less-developed countries also benefit.

Going backward into isolation, which is the intention of Brexit, is certainly the wrong way to go.

WSJ: Fast forward to the end of your contract in 2020. If you were to leave then, what's the state of the company your successor would inherit?

Mr. Müller: It should be a company that has largely dealt with the diesel crisis.

[The scandal involved evasion of emissions requirements for diesel-powered vehicles.] There will still be litigation; that will probably take 10 years or so. The operating issues should be dealt with.

It should be a very successful company in a position to secure its core workforce and play a leading role in the new mobility field.

BUSINESS WATCH

YELP

Reviews Firm Says Google Broke Word

Online-reviews firm Yelp Inc. alleged that Google is breaking a promise it made as part of a 2012 regulatory settlement to not scrape content from certain third-party sites including Yelp, escalating its yearslong battle against the search giant.

Yelp said in a letter late Sunday to Federal Trade Commission Chairwoman Maureen Ohlhausen that Google is using Yelp photos for local-business listings in its search results, despite Yelp's formal request that Google not pull such content from its site. Google, the core unit of **Alphabet** Inc., didn't respond to a request for comment. The FTC declined to comment.

As part of a December 2012 settlement to end an FTC investigation into Google, the tech giant agreed to not use content, including photos and user re-



Discovery will be part of a nonsports television service.

views, from third-party sites that opted out of such scraping. Google's commitment lasts through 2017 and applies to a variety of its products, including its local-business listings.

"This is a flagrant violation of Google's promises to the FTC, and the FTC should reopen the Google case immediately," said

Luther Lowe, Yelp's public-policy chief.

—Jack Nicas

STREAMING

New TV Bundle Will Exclude Sports

People who are tired of pay-

ing for television-sports channels they don't watch will soon have a new option.

Cable channels owned by **Discovery Communications**, **Viacom** Inc., **AMC Networks**, **A+E Networks** and **Scripps Networks Interactive** will be part of a new streaming service expected to have a so-called soft launch in coming weeks, people familiar with the situation say. Subscriptions will cost less than \$20 a month.

The entertainment-focused service is meant to appeal to consumers who want a collection of nonsports programming. They will get a bundle of networks with nonfiction and lifestyle programming, children's fare and scripted dramas.

The precise list of networks to be carried isn't clear, though the media companies are expecting all their core channels to be part of it, the people said.

Discovery, in addition to its namesake channel, owns ID, TLC and Animal Planet, among oth-

ers. Scripps, which Discovery is in the process of acquiring, is the parent of such channels as HGTV and Food Network. Viacom's list includes Nickelodeon, MTV, Comedy Central and BET, and AMC and A+E each have their own suites of networks.

Left out will be major sports networks, including **Walt Disney** Co.'s ESPN, **21st Century Fox** Inc.'s FS1 and a host of league-oriented and regional channels.

But there is also plenty of high-profile entertainment programming that isn't part of the mix. To get it, cord-cutters would need an antenna to receive broadcast signals from ABC, **CBS**, Fox and NBC, and perhaps a subscription to another web-television for additional channels.

Sports programming has been the subject of intense debate in the media world, in part because those channels make up a significant portion of the average cable bill, with ESPN leading the way.

—Amol Sharma

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FINANCE & MARKETS

Goldman's Next Obsession: \$5 Billion

Firm aims to increase revenue by expanding in lending, improving trading performance

By LIZ HOFFMAN

After years of cutting, **Goldman Sachs Group Inc.** is in growth mode, though big questions remain over the future of its debt-trading arm.

A top Goldman executive on Tuesday detailed \$5 billion in additional revenue that Goldman could pull in over the next three years, from increasing its lending footprint to reversing declines in its fixed-income division.

The figure represents 17% of its revenue last year and would bring Goldman back to 2006 levels.

Goldman has struggled to replace lost revenue since the financial crisis, relying instead on cost cuts to boost margins. Tuesday's presentation outlined a path to increasing the top line, more of which—as much as half—could be pretax profits if Goldman can keep expenses down, co-Chief Operating Officer Harvey Schwartz said at an industry conference.

Its efforts "aren't hypothetical; they are already under



Lloyd Blankfein's Goldman Sachs is targeting \$5 billion in additional revenue in the next three years.

way," Mr. Schwartz said. He said the firm is "completely obsessed" with improving its returns.

Mr. Schwartz said the \$5 billion figure assumes the same middling market conditions of low growth, volatility and interest rates that have persisted for years.

"Our relative performance, in the long run, is totally within our control," Goldman's

chief executive, Lloyd Blankfein, said in a voice mail Tuesday to the company's 34,000 employees.

Keefe, Bruyette & Woods Inc. analysts said Tuesday that they remain "somewhat skeptical of [Goldman] management's ability to hit these revenue targets" because they require the firm to stretch beyond traditional strengths, expanding businesses such as

lending and asset management.

A big question mark looms over fixed-income trading, in which revenue fell 21% over the first half of the year. Commodities trading has been particularly challenged, with less than \$100 million of revenue over that period, The Wall Street Journal has reported.

Tough conditions are likely to continue into the third quarter, which Mr. Schwartz

said has been "pretty challenging."

Still, Mr. Schwartz said fixed-income revenue could increase by \$1 billion by 2020. His presentation included more detail than the firm has given in some other presentations, a possible acknowledgement that investors haven't been satisfied with previous explanations for the trading slump.

A priority is doubling down on corporate clients and "real-money" accounts like pension funds and insurers, which tend to keep trading in all kinds of market conditions.

Mr. Schwartz said there are 600 institutional clients for whom Goldman isn't a top-three broker, and that closing that gap could bring in \$600 million in additional revenue over the next three years. The Journal reported earlier this year that Goldman had been working with an industry consultant to take a deep dive on its market share with different types of clients.

Another effort is to win more business from corporate-trading offices, which Mr. Schwartz said could bring in another \$250 million. Goldman has shifted some corporate currency and commodities trading efforts into its

investment bank, working alongside industry specialists that call on companies.

In the latest action, Goldman plans to move Jeroen Rombouts, co-head of global currency sales, into a senior role in the investment-banking division, where he will line up alongside bankers pitching mergers, loans and stock sales, according to people familiar with the matter.

Those types of deals often throw off activity such as hedging a loan denominated in a foreign currency. Today, most of that business goes to big commercial banks such as J.P. Morgan Chase & Co. and Citigroup Inc. that are extending those loans. By adding trading specialists alongside investment bankers, Goldman hopes to capture more of it.

That dovetails with another growth priority: expanding the firm's lending footprint, which Mr. Schwartz estimates could bring in another \$2 billion in revenue.

Goldman plans to commit an additional \$28 billion of its own capital toward lending activities by 2020, Mr. Schwartz said.

That would represent about 3% of its total balance sheet, but increase its current loan book by about 40%.

Equifax Pushed to Ease Regulation

By MICHAEL RAPORT
AND ANNAMARIA ANDRIOTIS

Equifax Inc. was lobbying lawmakers and federal agencies to ease up on regulation of credit-reporting companies in the months before its massive data breach.

Equifax spent at least \$500,000 on lobbying Congress and federal regulators in the first half of 2017, according to its congressional lobbying-disclosure reports. Among the issues on which it lobbied was limiting the legal liability of credit-reporting companies.

That issue is the subject of a bill that a panel of the House Financial Services Committee, which oversees the industry, discussed the same day Equifax disclosed the cyberattack that exposed personal financial data of as many as 143 million Americans.

Equifax has also lobbied Congress and regulatory agencies on issues around "data security and breach notification" and "cybersecurity threat information sharing," according to its lobbying disclosures.

The amount Equifax spent in the first half of this year appears to be in line with previous spending. In 2016 and 2015, the company's reports show it spent \$1.1 million and \$1.02 million, respectively, on lobbying activities. While the company had broadly similar lobbying issues in those years, the liability matter was new in 2017.

Equifax's credit-reporting peers, **TransUnion** and **Experian PLC**, spent at least \$128,000 and \$690,000, respectively, on lobbying in the

year's first half, disclosure records show. They were lobbying on similar issues as Equifax, including liability.

In a statement Monday night, Equifax said it "works closely" with lawmakers and regulators "to ensure that we are communicating the benefits of credit reporting to the U.S. economy, as well as the effects of certain legislation on the financial system."

The company said it believes in "fair industry regulation and advocating for policies that protect consumers' rights."

The Equifax data breach revealed a slew of personal information—names, addresses, dates of birth, Social Security numbers and in some cases driver's license information—in one swoop. This made the exposure far broader than other hacks that revealed, say, a consumer's name and credit-card number.

"This one is a different animal in the sense of the nature of the information that

was breached," Capital One Financial Corp. Chief Executive Richard Fairbank said at a financial-services industry conference Monday. John Gamble, Equifax's finance chief, was scheduled to speak at the same conference, but canceled.

He and Equifax chief Richard Smith have spoken in recent days, though, with some analysts and investors, according to people familiar with the matter. In those conversations, the executives said the database that was hacked had retained consumer information going back five to 10 years, the people said.

That, the executives said, was part of the reason so many people were affected. They added that a portion of the affected database included people who had contacted the firm to dispute information in their credit reports, the people familiar with the matter said.

The executives said the company waited more than a month to announce the breach

in part because of the need to set up a website for affected consumers and decide on services for them, according to a person familiar with the matter.

Equifax has faced widespread criticism following its disclosure of the hack, both for the breach and for perceived flaws in its actions beforehand and response afterward. Several regulatory agencies have said they will investigate, and two congressional committees, including the Financial Services Committee, said they would hold hearings.

Equifax's political-action committee made contributions to 13 members of the Financial Services Committee during the 2016 election cycle, according to data from the Center for Responsive Politics. Among the recipients was Committee Chairman Rep. Jeb Hensarling (R., Texas), who received \$1,000. Last Friday, he called for his committee's hearing into the breach.

Rep. Blaine Luetkemeyer (R., Mo.), chairman of the Financial Institutions and Consumer Credit subcommittee that directly handles matters relating to the reporting companies, received \$2,000. Also receiving \$2,000 was Rep. Barry Loudermilk (R., Ga.), sponsor of the bill that would place a \$500,000 cap on the statutory damages consumers could win in a lawsuit against the credit-reporting companies, as well as eliminate punitive damages against them entirely. Staff for Reps. Hensarling, Luetkemeyer and Loudermilk couldn't be reached for comment.



The company spent at least \$500,000 on lobbying in the first half.



Austria sold \$4.2 billion of a bond that doesn't mature until 2117.

Investors Go Long For Austrian Bond

By EMESE BARTHA
AND GEORGI KANTCHEV

Investors lined up Tuesday to buy an Austrian government bond that won't be repaid until September 2117, earning just 2.1% interest along the way.

It was the first public, century-long bond issued by a government in the eurozone—a currency union established 18 years ago.

Austria sold €3.5 billion (\$4.2 billion) of the megabond and received more than €11 billion of orders for it, according to one of the banks handling the deal. Superlow yields in the eurozone helped spur demand, investors said. Austria also sold €4 billion in more pedestrian five-year bonds Tuesday, which yield around minus 0.2%.

Extremely long bonds are unusual. Last year, Ireland and Belgium sold small century-long bonds in private placements, which are offered to a handful of buyers. Argentina and Mexico issued 100-year bonds in 2017 and 2015, respectively.

Longer-dated bonds tend to be popular with investors such as pension funds and insurance companies, which buy them to match their investments with their long-term liabilities.

Companies also have dipped into the ultralong debt market. In 2015, French state-owned railroad company SNCF issued a 100-year euro bond for €25 million, and power utility **Electricité de France SA** sold 100-year bonds in 2014.

For Austria, 100 years is a long time. The Austro-Hungarian empire collapsed 99 years ago, and Austria has since seen two independent repub-

lics. A tally of debt troubles from the 1920s to the 1960s by the academics Carmen Reinhardt and Kenneth Rogoff, lists five Austrian defaults plus a two-year period of hyperinflation.

The strong demand for ultralong debt is another indication that even as the European Central Bank is preparing to wind down its postcrisis stimulus measures, investors believe interest rates will stay low for a protracted period.

"Yields continue to be low and a 100-year bond is attractive in this environment, compared to what else is out there," said Seamus Mac Gorain, global rates portfolio manager at **J.P. Morgan Asset Management**.

Late last year, Austria sold a €2 billion, 70-year bond at a yield of 1.53%.

The long time until maturity and the low interest payments make the bond's value vulnerable to changes in interest rates. And because Austria doesn't issue its own currency, buying the bond involves a long-term bet on its ability to repay euros.

Because of those risks, longer-dated bonds typically pay investors a higher return, which has made these securities more popular when yields are low across fixed-income markets.

The €4 billion September 2022 part of Tuesday's issue was priced at a yield of minus 0.165%, while the €3.5 billion September 2117 part of the transaction was priced at a reoffer yield of 2.112%, said one of the lead managers.

The joint lead managers of the dual transaction were BofA Merrill Lynch, **Erste Group**, **Goldman Sachs International**, NatWest Markets and Société Générale CIB.

Hackers Take Special Interest in Wealthy

By VERONICA DAGHER

watch out for:

Email Vulnerabilities

Fraudsters may use the compromised Equifax data to not only open high-limit credit cards or take out loans in victims' names, Mr. Jones says, but also to hack into their email accounts to gather information so they can commit other crimes.

Using the details gathered from the breach, experts say hackers are likely to launch "phishing" attempts on their targets. With knowledge of a loan at a certain bank, for example, a hacker could craft an email about that loan that sounds believable and encourages the victim to either click a link that may infect their computer or sends them to a malicious website that gathers even more data that could be exploited.

How to respond: Use different, complex passwords for each of your accounts, security experts said. Don't use your Social Security number as any part of an online password or username.

Also, take caution with emails that appear to be from a legitimate financial institu-

tions. When in doubt, call that provider directly or log on to their website from a secure connection to check your accounts, security experts say.

Medical Fraud

Well-off victims may be at particular risk for medical fraud, too, said Michael Kaiser, executive director at the National Cyber Security Alliance. That is because they often have strong medical insurance and prescription-drug coverage.

A crook could use the information stolen in the breach to impersonate a victim and seek treatment from various doctors or specialists, potentially racking up high medical bills.

Meanwhile, the opioid epidemic raises the stakes for prescription-drug fraud.

Crooks could sell the information to individuals addicted to prescription drugs, including opioids, said Eva Velasquez, president of the Identity Theft Resource Center, a nonprofit group that helps victims of identity theft.

That person would then use the stolen information to buy prescription drugs under the victim's name using their

health insurance. The victim will often get the bill for any unpaid expenses and crook's use of the drug will be recorded into the victim's health records, she says.

How to respond: If you get bills or explanation-of-benefits forms that you don't recognize, call the billing office of the medical provider and your insurance company to challenge the charges, Mr. Kaiser said. Ask providers about any extra layers of security they have, including two-factor authentication, personal identification numbers and biometrics such as fingerprint readers, and take advantage of those features, Ms. Velasquez said.

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JOURNAL REPORT | INNOVATIONS IN HEALTH CARE

The Search to End the Scourge of Misdiagnoses

Researchers are finding new ways to make sure doctors make the right diagnosis

BY LAURA LANDRO

DOCTORS ARE developing novel solutions to make sure they come up with the right diagnoses.

A flood of new initiatives by researchers, physicians, health-care systems, nonprofits and malpractice insurers is yielding new insights and approaches. These include sophisticated computer programs, some that use artificial intelligence to help analyze and diagnose tough cases (see article below), and others that scan records for errors such as missed test results and appointments. Advanced technologies aren't just bringing the processing power of big data and machine learning to bear. They are also allowing more doctors to share their knowledge—including lessons they've learned from their own diagnostic mistakes.

Misdiagnoses are a leading cause of medical malpractice suits in the U.S., and they don't have simple causes or solutions. Most people will experience at least one diagnostic error in their lifetime, sometimes with "devastating consequences," according to a landmark 2015 report by the National Academies of Sciences, Engineering and Medicine.

For decades, inaccurate or delayed diagnosis has been "a blind spot in the delivery of quality care," said the report, which is broadly credited in scientific circles with inspiring the recent multipronged push for improvements.

"There is a huge opportunity to put knowledge and tools into the hands of clinicians to help them make a better or more timely and accurate diagnosis," says Janet Corrigan, head of the patient-care program at the nonprofit Gordon and Betty Moore Foundation, which is funding several projects to improve the accuracy of medical diagnoses.

Here are some of the most promising efforts:

SPOTTING MISTAKES

A Pennsylvania hospital is experimenting with the first formal computerized program to track, measure and analyze doctors' diagnostic mistakes—sometimes as they are happening. The Safer Dx Learning Lab is being implemented at Geisinger Medical Center, the flagship of **Geisinger Health System**, based in Danville, Pa.,

which has 13 hospitals, a health plan and a medical school. The project is funded by a Moore Foundation grant and is led by Hardeep Singh, chief of health policy, quality and informatics at the **Michael E. DeBakey VA Medical Center** and an associate professor at Baylor College of Medicine in Houston.

Once fully installed, the system will scan electronic medical records to identify patients who are experiencing potential or actual diagnostic mistakes or delays, based on certain clinical criteria, such as abnormal chest X-rays or CT scans for which there is no documented follow-up. Flagged records will then be reviewed for confirmation, analysis and further action.

"Knowledge from systematically analyzing missed opportunities in correct or timely diagnosis will inform improvements and create a learning health system for diagnosis," Dr. Singh says.

A 2013 study led by Dr. Singh reviewed 190 diagnostic errors detected by unexpected returns of patients after an initial primary-care visit. A large variety of common diseases such as pneumonia, cancer and urinary-tract infections were missed on the initial visit. Many errors were related to problems with medical history-taking, physical exams, ordering of diagnostic tests for further work-up and failure to review previous records. Other issues included clinicians failing to initiate referrals to specialists and failures in follow-up and tracking of diagnostic tests.

"We could ask the question in every patient diagnosed with cancer, was the appropriate diagnosis made in a timely fashion, or were there opportunities, on review, to have made this correct diagnosis earlier?" says Dennis Torretti, associate chief medical officer at Geisinger Medical Center.

Geisinger also is adding a confidential hotline reporting system where clinicians can call and leave a recorded message. Similarly, Geisinger will ask patients how it can do a better job related to diagnosis.

"We all see patients who had to see doctors several times before a diagnosis was achieved and had a feeling all along that something was being missed, or were discharged from the ER and felt the diagnosis didn't explain their symptoms," says Benjamin Hohmuth,



Dennis Torretti, second from left, Benjamin Hohmuth, second from right, and other Geisinger Medical Center doctors are developing a system that uses electronic records to improve diagnostic accuracy and identify patients who may be experiencing errors.

uth, principal investigator on the Safer Dx project and associate chief medical informatics officer at Geisinger.

HELP FROM AI

Many online tools have been developed to analyze symptoms and help doctors arrive at a diagnosis—with mixed results. Now a system that uses AI can synthesize opinions from many doctors into a single cohesive perspective.

The Human Diagnosis Project has developed an electronic consulting system that lets participating doctors enter a patient's background, symptoms, test results and other findings, then invites expert doctors to review the case, suggest a diagnosis and recommend next steps. Users can include specific questions, such as, "Does this patient need an MRI?"

As doctors post their responses, the AI-enhanced software combines and analyzes all the input, weighted by each doctor's relative expertise.

More than 6,000 doctors and 40 medical specialties have been building the system since 2014, backed by an alliance that includes medical schools, medical specialty boards and research experts.

The aim is "not only to deliver the best possible diagnosis for the patient at hand, but to form a record that doctors can draw on for similar cases in the future," says Shantanu Nundy, a primary-care doctor at Mary's Center, a community-health center in Washington, D.C., and director of the nonprofit arm of Human Dx.

"Generally, doctors can diagnose better than computers, but doctors supported by technology like this system could help improve the accuracy of clinical decisions across the

What Went Wrong

The leading causes of diagnostic errors in a sample of 583 physician-reported cases

Failure/delay considering diagnosis	110
Failure/delay ordering needed tests	63
Erroneous lab/radiology test reading	61
Too much weight to competing diagnosis	44
Failed/delayed follow-up of test result	42
Failure eliciting history data	40
Failure eliciting physical-exam data	37
Failure/delay reporting result	30
Clinician error in test interpretation	25
Technical error processing specimen/test	17
Inaccurate interpretation of history data	15
Inaccurate interpretation of physical exam	14

Source: Archives of Internal Medicine, Dr. Gordon Schiff et al.

THE WALL STREET JOURNAL.

board," says David Westfall Bates, professor of health policy and management at Harvard T.H. Chan School of Public Health and chief innovation officer at Brigham and Women's Hospital in Boston.

SHARING LESSONS

Another effort to improve practices and training, though not necessarily through a single tool, is a network in Massachusetts including Brigham and Women's Hospital; Crici, a Harvard-owned malpractice insurer; and the Boston-based second-opinion service Best Doctors. The network, known as Pride, short for Primary Care Research in Diagnostic Errors, plans to identify, analyze and classify diagnostic errors and delays with the help of electronic medical records, to develop and share interventions that can overcome diagnostic errors and delays, especially in primary care.

The network will disseminate

insights and lessons to doctors through forums, newsletters, journals and webinars.

Among the advances it hopes to deliver are screening tools to uncover issues related to drugs or exposures that can lead to missed or delayed diagnosis, such as patients who are on multiple drugs, or who may have been exposed to toxins on the job or at home.

It also plans to help doctors avoid ordering unnecessary and wasteful tests by developing "principles of conservative diagnosis," says Gordon Schiff, associate director of Brigham and Women's division of general internal medicine and quality and safety director at Harvard Medical School's Center for Primary Care.

Crici, meanwhile, is also funding a project overseen by Dr. Schiff to develop five tools to help avoid pitfalls that leave doctors open to malpractice claims. For example, studies have shown that as few as

40% to 50% of orders for colonoscopies result in patients' getting the test. In response, the project plans to develop and test "loop-closing" tools for electronically tracking doctors' recommendations of tests and procedures that aren't carried out.

BETTER THINKING

Some medical schools are creating programs to overcome pitfalls in thinking that can affect a doctor's diagnostic skills and become ingrained early in medical training.

The University of Pittsburgh Medical Center has developed videos of cases with actors posing as patients. The videos feature expert commentary, animation and Q&As. The aim isn't only to improve the clinical reasoning skills of new doctors, but to make them aware of the prevalence, causes and consequences of diagnostic errors, according to William Follansbee, director of the UPMC Center for Medical Decision Making and a professor of cardiovascular medicine.

In making diagnoses, doctors may rely on shortcuts or simple rules of thumb based on what they've seen in past cases, Dr. Follansbee says.

They may also anchor their thinking in an initial impression of a case or prematurely make a diagnosis before pursuing alternative possibilities.

The most important first step in making a diagnosis, Dr. Follansbee says, is to ask good questions.

"These might seem like common, simple questions we all know," he says, "but they are frequently overlooked."

Ms. Landro is a former Wall Street Journal assistant managing editor. Email her at reports@wsj.com.

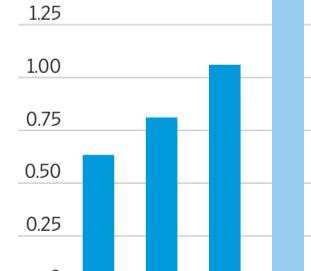
AI Holds Promise for Improving Diagnoses

With artificial intelligence, machines can see what many humans may have missed

BY NEIL PARMAR

More Brainpower

Global spending on artificial intelligence and cognitive computing systems in health care



*Projected

Source: Frost & Sullivan

THE WALL STREET JOURNAL.



Mark Michalski works on a deep-learning algorithm for making diagnoses at Mass General.

But a type of artificial intelligence known as deep learning could soon help medical experts pinpoint problems faster and more accurately, says Dr. Michalski, executive director of the Boston-based Center for Clinical Data Science at Massachusetts General Hospital and Brigham and Women's Hospital.

Deep learning includes algorithms, or computer programs, that search for, identify and analyze problems without direction from people, though many humans still guide the algorithms today. For months, Dr. Michalski has used hundreds of thousands of medical images to train a deep-learning system to detect pulmonary nodules and strokes, measure tumors and look for traumatic injury and fractures, among other tasks.

Now he's testing the system in his hospitals. The early results "are promising," he says. "The technology really does work."

More hospitals, universities and tech companies are training and testing systems that use AI, including deep learning, to see how they might be used to improve the medical diagnosis process. Most efforts today are focused on recognizing patterns in medical images

such as CT and MRI scans. IBM Research estimates that, based on file-storage sizes, images account for at least 90% of all medical data.

Some deep-learning systems also incorporate other information, such as medical reports or lab-test results. The more data that gets fed into these systems, experts say, the better they tend to perform as they compare a patient's medical information with data from thousands or sometimes millions of other patients.

This sector has grown in recent years. AI systems within health care brought in \$1.06 billion in revenue globally last year, up from \$811 million in 2015 and \$633 million in 2014, according to Frost & Sullivan.

a market-research firm. That is projected to increase as more AI-driven apps arrive.

"A lot of what we're doing right now is taking what has been proven in the lab and trying to commercialize it," says Steve Tolle, global vice president and chief strategist for IBM Watson Health Imaging.

Some tech companies working in this space are teaming up with health-care systems, academic medical centers and other partners to get access to medical data. Through these partnerships, experts say, deep-learning algorithms can become more accurate and ultimately help more clinicians.

IBM Watson Health, which launched in 2015, formed such a medical-imaging collabora-

tive last year to help doctors address different types of cancers and other diseases. The network, in which the health-care systems get to see results from tests run by IBM Watson Health, has expanded to 30 members from 15. One tool being worked on is a score indicating how confident the system is that something found is, say, a cyst or a tumor. Another tool would flag areas of concern that a physician might have missed.

"The goal is to scale the expertise of the clinician," says John Smith, manager of multimedia and vision at IBM Thomas J. Watson Research Center. "The computer can see a lot more data than any clinician can ever see."

There are certain limitations to these kinds of approaches, however. Some images, for instance, don't label areas to help machines identify what they are looking at.

Another hurdle is companies are competing to identify and recruit data scientists. GE Healthcare, for one, is working with some colleges to advance their curricula in science, technology, engineering and math.

There also are some security concerns in the health-care industry about companies accessing medical records and patient data. But there seems to be a greater worry about whether radiologists or other medical experts might get displaced by AI altogether.

Both health-care experts

and corporate executives say there is still an important role for people; it is still a person who makes a formal medical diagnosis. "What we're developing is a suite of applications to make them [people] more effective" through better diagnosing and treating patients, says Charles Koontz, chief digital officer of GE Healthcare.

Health-care experts and companies say most AI-assisted tools have helped doctors make faster decisions and consider more possibilities when making diagnoses. "There's no doubt it's more accurate," says Siddharth Saha, vice president of transformational health for Frost & Sullivan.

In December, a study published in the medical journal *JAMA* presented a deep-learning algorithm capable of interpreting signs in photographs of diabetic retinopathy—an eye condition that can cause blindness. It performed on par with ophthalmologists, according to researchers at Google, who co-wrote the study.

In the future, some experts argue that AI could improve the accuracy of diagnoses at smaller hospitals, including in countries where there may be shortages of doctors. Says Mr. Koontz, "We believe these applications will really improve outcomes in midsize hospitals, and quite frankly, in developing countries."

Mr. Parmar is a writer in Toronto. He can be reached at reports@wsj.com.

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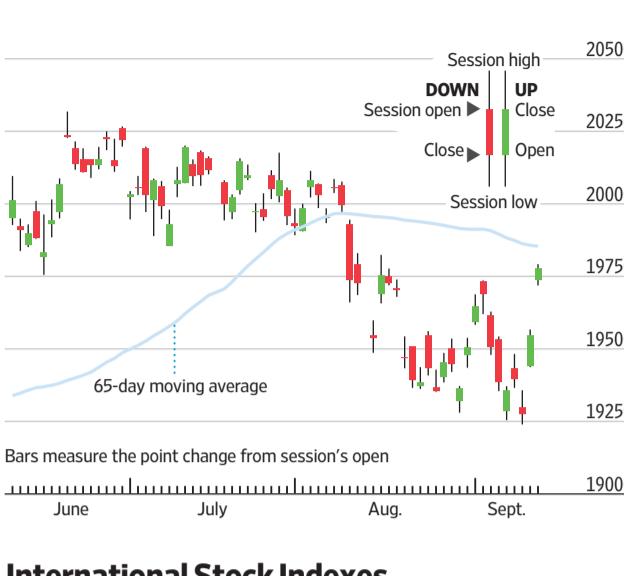
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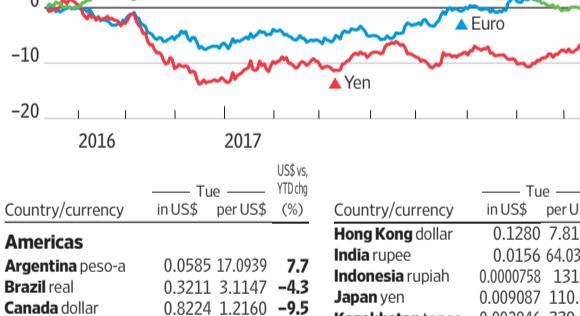
International Stock Indexes

Region/Country	Index	Data as of 4 p.m. New York time					
		Close	NetChg	% chg	52-Week Range	Close	YTD % chg
World	The Global Dow	2891.04	9.58	▲ 0.33	2386.93 - 2914.43	2891.43	14.4
	MSCI EAFE	1969.90	4.41	▲ 0.22	1614.17 - 1973.04	1973.04	14.8
	MSCI EM USD	1101.68	2.50	▲ 0.23	838.96 - 1102.88	1102.88	38.7
Americas	DJ Americas	602.40	1.99	▲ 0.33	503.44 - 602.52	602.52	11.5
Brazil	Sao Paulo Bovespa	74527.99	208.77	▲ 0.28	56459.11 - 75332.23	75332.23	23.7
Canada	S&P/TSX Comp	15145.68	105.38	▲ 0.70	14319.11 - 15943.09	15943.09	-0.9
Mexico	IPC All-Share	50485.77	126.45	▲ 0.25	43998.98 - 51772.37	51772.37	10.6
Chile	Santiago IPSA	3925.00	12.77	▲ 0.33	3120.87 - 3945.90	3945.90	21.8
U.S.	DJIA	22118.86	61.49	▲ 0.28	17883.56 - 22179.11	22179.11	11.9
	Nasdaq Composite	6454.28	22.02	▲ 0.34	5034.41 - 6460.84	6460.84	19.9
	S&P 500	2496.48	8.37	▲ 0.34	2083.79 - 2496.77	2496.77	11.5
	CBOE Volatility	10.58	-0.15	-1.40	8.84 - 23.01	23.01	-24.6
EMEA	Stoxx Europe 600	381.42	1.99	▲ 0.52	328.80 - 396.45	396.45	5.5
	Stoxx Europe 50	3104.10	14.43	▲ 0.47	2720.66 - 3279.71	3279.71	3.1
Austria	ATX	3282.95	22.41	▲ 0.69	2311.88 - 3289.71	3289.71	25.4
Belgium	Bel-20	3995.20	17.66	▲ 0.44	3384.68 - 4055.96	4055.96	10.8
France	CAC 40	5209.01	32.30	▲ 0.62	4310.88 - 5442.10	5442.10	7.1
Germany	DAX	12524.77	49.53	▲ 0.40	10174.92 - 12951.54	12951.54	9.1
Greece	ATG	810.75	4.69	▲ 0.58	548.72 - 859.78	859.78	26.0
Hungary	BUX	38076.88	181.03	▲ 0.48	27466.59 - 38163.73	38163.73	19.0
Israel	Tel Aviv	1412.60	8.57	▲ 0.61	1346.71 - 1490.23	1490.23	-4.0
Italy	FTSE MIB	22233.40	99.29	▲ 0.45	15923.11 - 22308.46	22308.46	15.6
Netherlands	AEX	526.58	2.62	▲ 0.50	436.28 - 537.84	537.84	9.0
Poland	WIG	64826.07	-50.49	-0.08	46599.79 - 65611.21	65611.21	25.3
Russia	RTS Index	1124.23	-2.51	-0.22	953.12 - 1196.99	1196.99	-2.4
Spain	IBEX 35	10336.20	13.60	▲ 0.13	8512.40 - 11184.40	11184.40	10.5
Sweden	SX All Share	566.01	2.44	▲ 0.43	489.12 - 598.42	598.42	5.9
Switzerland	Swiss Market	9053.62	71.39	▲ 0.79	7585.56 - 9198.45	9198.45	10.1
South Africa	Johannesburg All Share	56366.16	357.39	▲ 0.64	48935.90 - 56869.89	56869.89	11.3
Turkey	BIST 100	109129.65	-328.36	-0.30	71792.96 - 110530.75	110530.75	39.7
U.K.	FTSE 100	7400.69	-12.90	-0.17	6654.82 - 7598.99	7598.99	3.6
Asia-Pacific	S&P/ASX 200	5746.40	33.30	▲ 0.58	5156.60 - 5956.50	5956.50	1.4
China	Shanghai Composite	3379.49	3.07	▲ 0.09	2980.43 - 3385.39	3385.39	8.9
Hong Kong	Hang Seng	27972.24	17.11	▲ 0.06	21574.76 - 2804.61	2804.61	27.1
India	S&P BSE Sensex	32158.66	276.50	▲ 0.87	25765.14 - 32575.17	32575.17	20.8
Japan	Nikkei Stock Avg	19776.62	230.85	▲ 1.18	16251.54 - 20230.41	20230.41	3.5
Singapore	Straits Times	3235.69	7.18	▲ 0.22	2787.27 - 3354.71	3354.71	12.3
South Korea	Kospi	2365.47	6.39	▲ 0.27	1958.38 - 2451.53	2451.53	16.7
Taiwan	Weighted	10610.35	38.19	▲ 0.36	8902.30 - 10617.84	10617.84	14.7

Source: SIX Financial Information/WSJ Market Data Group

Currencies

Yen, euro vs. dollar; dollar vs. major U.S. trading partners



London close on Sept. 12

US\$ vs. Country/currency

Tue in US\$ YTD chg (%)

Country/currency

Tue in US\$ per US\$ (%)

THE PROPERTY REPORT

Cheaper Homes Draw Cash

Investors shift toward sector as building boom in luxury homes pressures rents

BY KEIKO MORRIS

New York developer Jonathan F.P. Rose, founder and president of Jonathan Rose Cos., has raised a \$233 million real-estate fund dedicated to affordable housing, the company's largest such fund in a sector drawing more attention from investors.

The fund, which will acquire, improve and preserve affordable-housing properties, has secured commitments from about 125 investors, including the Ford Foundation, Deutsche Bank AG's Community Development Finance Group and an affiliate of Nuveen, the asset-management arm of financial-services giant TIAA, according to Jonathan Rose Cos. They were joined by other high net-worth individuals and family offices, pension funds, banks and nonprofit foundations, the company said.

One of affordable housing's biggest lures: steady income. After a seven-year luxury-apartment boom across the U.S., a surge in supply has slowed rental growth and pushed landlords to make deep concessions. Enormous demand for low-rent apartments continues to outstrip supply in cities across the country, making these investments low risk, said Mr. Rose. He estimates about 65,000 affordable units are built each year in the U.S., but 150,000 units are lost every year to buyers raising rents. Government programs to preserve housing offer tax subsidies and credits that also help lower costs.

That holds appeal for investors looking to remain invested in real estate without increasing their exposure to assets that might be richly priced. Developers looking to



Jonathan F.P. Rose says demand for low-income housing continues to outstrip supplies.

buy affordable properties without rental restrictions and boost rents also are entering the sector and cranking up competition.

"Real-estate developers are turning from luxury apartments and are eyeing this investment class, buying up a lot of units, repositioning and putting them out as market-rate units," said Rebecca Regan, executive vice president of the Housing Partnership Network, a cooperative of 100 nonprofit, affordable-housing developers, owners and community-development financial institutions.

In the affordable rental-housing market, properties are priced within the range of low- to moderate-income tenants, real-estate executives in the sector said. Rents at many of these properties are kept affordable for a certain time because of government incentive programs providing tax abatements, tax credits and rental subsidies. Some, however, are affordable without restrictions.

In some markets such as New York City, a supply surge has helped keep a lid on luxury rental prices, pushing some investors toward afford-

able-housing properties. Luxury condominiums bought as investments to be rented have exacerbated the situation, adding to the high-end rental supply and putting downward pressure on rents, said Bob Knakal, chairman of investment sales at the real-estate services firm Cushman & Wakefield.

Despite growing rent restrictions, some investors are turning toward affordable-housing investments out of necessity, Mr. Knakal said.

"They can still make some return, and it is the lowest risk of all property types because it's so easy to find people who want to live in those apartments," Mr. Knakal said.

The new fund, called the Rose Housing Preservation Fund IV LP, is well-positioned to compete with those other potential buyers because of the company's decades of experience and deep knowledge of the affordable-housing financial and regulatory world, Mr. Rose said.

As of July, the fund, which closed at the end of August, had made more than \$64 million in equity investments, including stakes in over 3,300 affordable apartment units

that were part of a larger \$500 million acquisition the company announced at the beginning of this year.

"We know how to put together preservation financing that helps us outcompete for properties we are trying to buy," Mr. Rose said.

The company's approach of using stable housing as a platform for social and health services also has given it a leg up in attracting the growing number of investors looking for measurable social and environmental results, Mr. Rose said. Earlier this year, the Ford Foundation announced it was committing as much as \$1 billion of its endowment to mission-related investments and cited affordable housing as an area of focus. The fund has also attracted banks looking to fulfill federal obligations to invest in the communities in which they do business.

"We view affordable housing initiatives as attractive financial investments offering steady cash flows while meeting the needs of an underserved market," said Rekha Unnithan, impact investment portfolio manager at TIAA Investments, an affiliate of TIAA's asset-management arm.

CoStar Pushes Ahead in Rentals

BY PETER GRANT

CoStar Group Inc., one of the world's largest internet real-estate data companies, is purchasing ForRent.com in a \$385 million deal that shows the rental apartment listing business is becoming the latest battleground in online property services.

Washington, D.C.-based CoStar is buying ForRent.com as part of its plan to list "every single apartment in the U.S. being marketed, whether it's someone's garage apartment up to the largest institutional property," said Andrew Florence, CoStar's founder and chief executive, in an interview.

CoStar got into the business of hooking up landlords with apartment hunters in 2014 when it purchased Apartments.com for \$585 million.

That deal added a new dimension to the company Mr. Florence founded in 1987, whose main business is providing commercial real-estate data services and a marketplace for sales of office buildings, shopping centers and other investment property.

CoStar's purchase of ForRent.com for \$350 million in cash and \$35 million in stock, expected to close later this year, will add scale to its apartment rental business, Mr. Florence said. Norfolk, Va.-based ForRent.com, which began listing apartments in 1982 with paper brochures distributed at supermarket checkout counters and other places, gets roughly eight million online visits a month and lists about 17,000 apartment communities, according to CoStar.

CoStar's Apartments.com lists more than one million apartments, including large rental communities and mom-and-pops who own as few as one rental unit. The Apartments.com network of apartment rental sites gets roughly 37 million visits a month, the

company says.

The real-estate industry was relatively late to adopt online technology. But in recent years real-estate tech businesses have gotten much more attention. Looking for a home has been transformed by listing services like Zillow Inc. and Realtor.com, which is operated by News Corp., owner of The Wall Street Journal.

CoStar dominates commercial real-estate information. Its database has four million properties, including more than 450,000 rental apartment buildings.

Real-estate data firm is acquiring ForRent.com for \$385 million.

Landlords have listed apartments online for more than a decade, partly on sites developed by newspaper owners worried about their loss of traditional print ads. In 1998, a venture of the Times Mirror Co., Tribune Co. and Washington Post Co. purchased the company that went on to build Apartments.com.

In recent years, large investors such as CoStar and Zillow began to make big bets on the business. There are 46 million rental households, up from 35 million in 2004, according to CoStar. Competitors also include RentPath Inc., which is owned by private-equity firms TPG and Providence Equity Partners LLC. Major players like Facebook Inc., Google and Craigslist also get an enormous amount of traffic from people looking for rental apartments.

"Competition is all about traffic," said Ronald Josey, senior analyst with JMP Group LLC. "The site with the most traffic typically wins."



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MARKETS

China Tech Bets Pan Out

Some hedge funds' returns exceed 20%; industry as a whole lags far behind

By LAURENCE FLETCHER
AND EMMA JOHANNINGMEIER

Hedge funds betting on China have chalked up some of the biggest profits of 2017 so far, fueled by concentrated bets on the technology sector.

But echoing concerns voiced in the U.S. about the relentless upward surge of the Nasdaq Stock Market, some fund managers are expressing worries about the Chinese tech sector's potential for overheating.

Among the hedge-fund industry's top performers globally this year is **Pinpoint Asset Management**, which runs \$1.9 billion and which gained 23% in its China fund through August. **Greenwoods Asset Management**'s \$1.6 billion Golden China Fund gained 30.4% this year to date. **Zeal Asset Management**, which runs \$1.1 billion, has gained 23% in its China fund through Sept. 8. Hong Kong-based **Oceanwide Asset Management**, which runs \$100 million, had gained around 35% in its Quam China Focus fund through August.

The gains stand out in a hedge-fund industry where strong returns have been hard to come by. Hedge funds globally are on average up just 3.9% this year through Sept. 8, according to data group HFR. Returns have been lackluster in recent years. Many blame this on huge central-bank stimulus, which has pushed up stocks across the board and can make it hard for managers to pick between strong and weak companies.

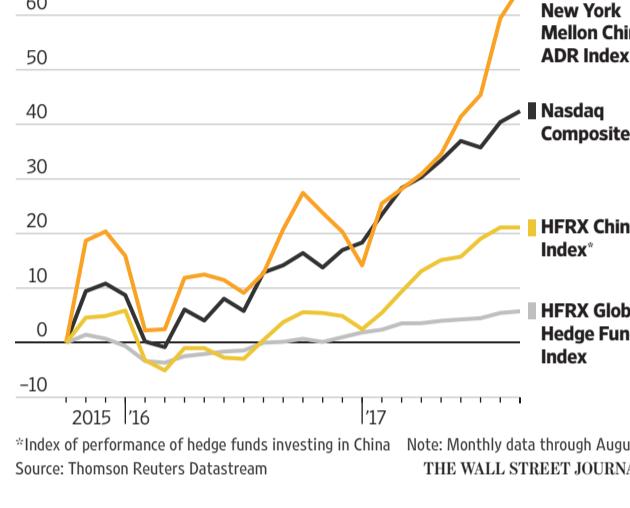
"Our largest exposure is in technology," said Chris Choy, Oceanwide's chief investment officer. Its Quam fund has a big position in the smart-



Makers of smartphone components have performed well.

Tech Tide

Total returns since September 2015



*Index of performance of hedge funds investing in China Note: Monthly data through August
Source: Thomson Reuters Datastream

phone-components sector, where it owns stocks such as lens maker Sunny Optical and Qtech, which makes camera parts for phones. It also has a large exposure to internet-platform stocks, with positions in Tencent, the fund's biggest holding, Alibaba and JD.com.

"In three or four years' time, 5G will be launched. People will be upgrading their phones, which is good news for component makers," Mr. Choy said. "Some [stocks] have gone up twofold, but their

value will continue to go up." The huge returns mirror some of the gains seen on the other side of the Pacific in the U.S., where the Nasdaq Composite is up 19.5% this year through Monday and has doubled since early 2013. The tech-heavy Bank of New York Mellon China index is up 45.7% this year, compared with a more modest 8.9% rise in the broader Shanghai A-share index.

As in the U.S., tech's gains in China have raised concerns among some commentators

over whether gains in the sector represent a bubble.

Chinese tech stocks such as Baidu, Alibaba, Tencent and NetEase are consensus investments that "everyone, Chinese or not, owns," said Joel Werner, founder of Hong Kong-based Solitude Capital Management. His fund is up 57% this year, though he doesn't own such stocks.

He drew a parallel with U.S. stocks Facebook, Amazon.com, Apple, Netflix and Google. "They're consensus trades and driving the market globally," he said. He said such stocks are expensive and could be vulnerable to a macroeconomic shock.

However, Oceanwide's Mr. Choy, whose fund increased its exposure to tech in the final quarter of last year, said that the internet-platform sector is "very solid and sustainable."

He added: "Some of our peers are concerned about valuations. We do very in-depth analysis, and we think there is still a huge space [the companies] can develop their business." Mr. Choy is instead concerned about sectors such as domestic banks and property developers, which he believes could be hurt if problems develop in China's shadow-banking system.

Technology stocks have also helped drive gains at Pinpoint, which said it has been building a position in Alibaba, and at Zeal. A tough operating climate for industries including technology has meant that "some clear leaders have emerged while others have left the business," said a Zeal spokesman. These survivors "have grown in market share through industry consolidation. Further need to vastly invest in capital expenditure [has] decreased and so the companies are enjoying much stronger cash flow."

He said Zeal doesn't believe a "major bubble" has formed but said "there is a risk that some of the largest cap stocks are overheating."

Renewed Optimism Lifts U.S. Stocks

By MARINA FORCE
AND MICHAEL WURSTHORN

Major U.S. stock indexes closed at record highs Tuesday, as investors regained confidence after markets skirted several dire scenarios.

In the past week: Florida was spared from the catastrophic damage many had forecast from Hurricane Irma. U.S. refiners have ramped back up after Hurricane Harvey battered Texas, North

Korea hasn't appeared to have conducted further tests of its nuclear program, and Congress passed a bill to keep the government funded before a month-end deadline.

For many strategists and money managers, the market's ability to continue to rally even as these crises flare up and recede show how little it takes to keep the second-longest bull market in U.S. history alive.

Stocks suffered some of their steepest daily declines in recent weeks after North Korea flexed its nuclear capabilities, with the Dow industrials tumbling more than 200 points on three separate occasions.

But solid earnings growth—companies in the S&P 500 recently saw two consecutive quarters of double-digit growth for the first time since 2011—and economic expansion in the U.S., as well as abroad, have helped markets bounce back, they added.

"We're seeing investors come back into the market after we have a little bit of short-term volatility," said Tom Wald, chief investment officer of Transamerica Asset Management. "Stocks are where they are because of the recent earnings growth and expected earnings growth," he added. "But the biggest short-term risk now is simple profit-

taking."

The Dow Jones Industrial Average rose 61.49 points, or 0.3%, to 22118.86. The S&P 500 gained 0.3% to 2496.48, a second consecutive record close, and the Nasdaq Composite added 0.3% to finish at 6454.28.

In Europe, the Stoxx Europe 600 rose 0.5% to 381.42, led by gains in bank and financial-services shares.

Shares of banks and insurers helped lead the way in the U.S., reflecting an upswing in bond yields and investors' relief that storm damage likely wouldn't end up as burdensome as feared.

The S&P 500 financials sector rose 1.2%, and shares of Goldman Sachs Group, up 2.2% by late afternoon, added more than 30 points to the Dow industrials' gain.

Investors attributed financial firms' gains to rising long-term bond yields, which boosted the prospect that lenders will make more money on the difference between what they pay to get deposits and charge to lend. The KBW Nasdaq Bank index, a measure of big U.S. banks, rose 1.6%.

The yield on the 10-year Treasury note rose to 2.171%, according to Tradeweb, from 2.125% Monday. Yields rise as bond prices fall. Other assets considered to be havens during times of instability also were down. Gold prices declined 0.2%, and the yen fell against the dollar.

Shares of Apple, meanwhile, were down 0.5% in late trading after the company announced its latest batch of iPhones, as well as changes to its lineup of watches and television products.

Still, investors continued to weigh their latest bout of optimism against continuing concerns over lofty valuations and whether markets are overdue for a correction.

HEARD ON THE STREET

FINANCIAL ANALYSIS & COMMENTARY

WSJ.com/Heard

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New iPhone Won't Boost All Suppliers

It's the \$1 trillion question in markets: Will **Apple**'s latest iPhone be another hit? No matter the answer, investors might be wise to cool their bets on some of the U.S. tech giant's Asian suppliers.

On average, iPhone suppliers have outperformed the market by 7.2% in the six months before a launch, only to underperform by 3.9% in the three months after, according to the brokerage firm Bernstein.

Prelaunch excitement has certainly fueled the likes of Hong Kong-listed **AAC Technologies**, an iPhone-speaker supplier whose share price is up 46% in the past three months—even though analysts over that period have raised their earnings estimates for next year by only 9%, according to S&P Global Market Intelligence. About half of AAC's revenue comes from Apple, according to Bernstein.

A better iPhone bet may be component makers that take a smaller bite from Apple, but are riding the latest trends in smartphones. Take **Sony**, a supplier of iPhone image sensors: It gets less than 5% of its revenue from Apple, but should benefit from the continuing shift toward dual lenses in smartphone cameras.

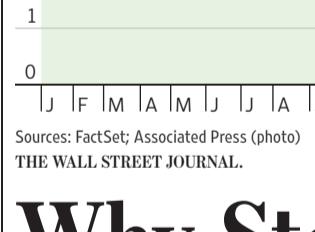
Similarly, Samsung Electronics, a leader in memory chips and display, should benefit as smartphones add more memory and sharper screens. Almost the sole supplier of screens using a technology called organic light-emitting diodes, Samsung is in a strong position.

As the hype around Apple's latest iPhone builds, investors should keep one eye on the likely winners and losers.

—Jacky Wong

One to Grow On

Market value of the ten largest companies in the S&P 500 Growth Index



Sources: FactSet; Associated Press (photo)



Large, rapidly expanding companies such as Amazon have been winners this year.

Why Stocks Are Rallying And What Could End It

The stock market just won't go down, despite geopolitical concerns, stretched valuations and an unpredictable president. Understanding why shares keep rising is one way to gauge how long the rally will last and what happens next.

The good news is there is a logic to the market's behavior, and that at the moment, nothing seems likely to alter its course. The bad news is things can turn quickly, and when they do, the decline could be severe.

The big winners this year have been huge, fast-expanding companies such as **Amazon.com**, **Facebook**, **Apple** and Google parent **Alphabet**.

So while the S&P 500 had risen 11% this year through Monday's close, the S&P 500 Growth Index, which is concentrated in companies with strong earnings and revenue growth, was up 17%. In contrast, the S&P 500 Value Index—which focuses on stocks with lower price/earnings, price-to-sales and price-to-book ratios—was up just 4%.

The 10 biggest stocks in the growth index increased 26% this year, according to

FactSet, adding about \$900 billion to the S&P 500's market capitalization, which stands at about \$23 trillion.

The gains make sense for two reasons. First, investors tend to favor fast-expanding companies in the latter stages of an economic expansion, which is where the U.S. is now. It is harder to generate growth late in the cycle after the easy gains have been made, putting a premium on companies that still exhibit strong profit gains.

Second, many of the big companies leading the rally do lots of their business abroad, where many countries are experiencing economic upswings. **Microsoft** and Facebook both draw roughly half their sales from outside the U.S. An added boost is the weaker dollar, which boosts the value of profits earned overseas.

For now, nothing seems likely to disturb this rosy scenario, which makes the gains self-reinforcing. Investors who want to beat the market need to plow cash into the shares of large-cap growth stocks. Passive investors who simply track the index are seduced by the mar-

ket's healthy gains and low volatility, and they boost their investments, pulling the whole market higher.

Those who chase performance will buy growth-oriented funds, which further drive these trends.

The love affair investors are having with big growth stocks could eventually set them up for big losses.

Stocks of large, fast-expanding companies have performed poorly when the economy starts to falter and the growth that investors were paying up for disappears.

That was how the growth-stock-driven rally of the late 1990s ended. In the six months that preceded the recession that began in March 2001, the S&P Growth Index fell by third and then fell by another third before hitting bottom in mid-2002.

It was a repeat of patterns seen in the 1960s.

What could cause the turn? A run of weak data or any event that makes investors question the U.S. economy's staying power. And if signs build up that an actual recession looms? History says it pays to get out fast.

—Justin Lahart

Gold Is Flashing Inflation Signal

Gold loves inflation while Treasury bonds hate it. So why are both having such a smashing year?

Prices of the precious metal have moderated a bit in the past few days, but remain near a yearly high. The yield on 10-year Treasurys, meanwhile, touched a yearly low late last week. These simultaneous trends are unusual. Gold prices normally rise when investors are worried about inflation; bond prices normally go up when the opposite is the case.

One possible factor in gold's surge is its role as a haven in times of geopolitical trouble. That seems overblown, though: Tensions in North Korea may be ratcheting up but a full-blown conflict remains a low probability. Worries about the region probably only account for about 15% of gold's 10% rise since mid-July, estimates Jeff Currie, head of global commodities at Goldman Sachs Group.

What seems more likely is gold investors are proving more sensitive to signs of global inflationary pressures.

Sure, most analysts expect another weak August inflation reading for the U.S. on Thursday, and continued tepid wage gains may bear that out. But there are plenty of reasons to expect steady, if not scorching, price gains in the West in the next 12 months. The most obvious is the U.S. dollar's decline this year, which has helped push up the price of all commodities, including gold.

A less appreciated factor is China, the world's largest goods exporter and biggest consumer of most industrial commodities. China's currency has risen sharply this summer, boosting the cost of

Chinese goods. Meanwhile, inflation has also remained stubbornly high within China, in part due to Beijing's campaign to shut down excess factory capacity in steel, aluminum and other industrial sectors.

A pricier yuan and costlier goods in yuan terms are a double whammy for foreign buyers of Chinese goods, namely, everyone.

An inflationary blowout remains unlikely. Chinese policy makers are starting to signal discomfort with the pace of the yuan's rise; the nation's central bank eased two-year-old restrictions on betting against the currency over the weekend. And slower growth in China's property market, which drives demand for everything from cement to steel to copper wiring, will likely begin to put a damper on things in the closing months of 2017.

Still, the bubbly sentiment in Treasurys in recent days risks underestimating the chances of higher prices to come. This time around, it's gold bugs whose inflation antennae may be better attuned.

—Nathaniel Taplin

People's Currency

Chinese yuan per dollar



Note: Scale inverted to show yuan's recent gains.

Source: CEIC

THE WALL STREET JOURNAL.