

GLOBAL 500: THE WORLD'S LARGEST COMPANIES

FORTUNE

ASIA PACIFIC EDITION
NUMBER 8

AUGUST 2018 FORTUNE.COM

THE U.S. ECONOMY
WILL SLOW.

THE BULL MARKET
WILL END.

HERE'S WHY—
AND WHAT YOU
SHOULD DO NOW.

THE
END
IS
NEAR

THE
END
IS
NEAR

THE
END
IS
NEAR

+ THE MOST INFLUENTIAL DISRUPTERS UNDER 40

JUSTIN THOMAS



” ถ้าใครอยากเล่นกอล์ฟ ”

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PERFORMANCE
SETS A NEW
STANDARD,
YOU'VE MADE
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Types of Business

- Manufacturers and wholesalers focusing on import and/or export of goods using ships entering and departing from ports
- Foreign-Invested Enterprises (FIEs) intending to run manufacturing companies that can create new volume of cargoes
- Businesses responsible for (un)loading, transportation, storage and exhibition of cargoes, or logistics-related businesses supporting abovementioned businesses
- Ship suppliers, logistics facilities developers, companies renting logistics facilities, and businesses supporting the work of companies being operated in the Hinterland

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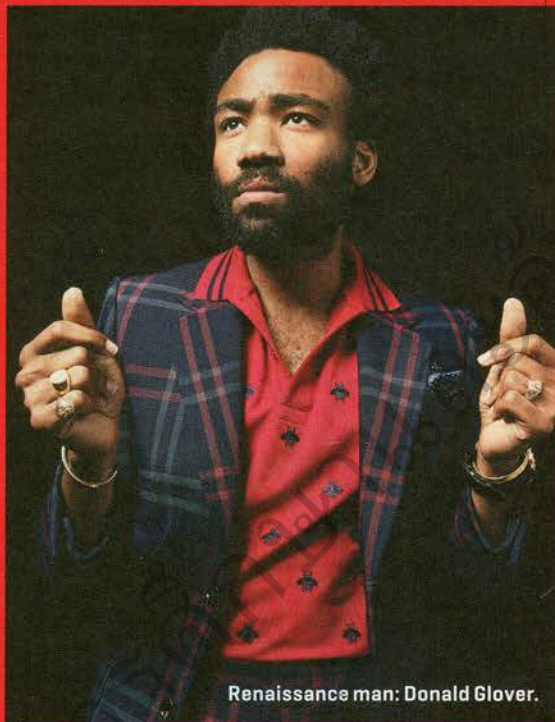
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The Nature
Conservancy 



THE BUSINESS CYCLE IS TURNING

MAYBE YOU READ HIS SURGICAL ANALYSIS of GE in our June issue, aptly titled “What the Hell Happened?” Or perhaps you’re familiar with his probing and cogent feature stories on Intuit, P&G, Wells Fargo, or Kraft Heinz in recent months. But if you’ve read any of these stories (and hopefully, you’ve read them all), you already know that nobody in the business press today dissects companies quite as deftly as Geoff Colvin does.

In this issue, though, we asked Geoff, a *Fortune* senior editor-at-large, to dig into something much bigger than any one company. We asked him to dissect the U.S. economy: to scrutinize its balance sheet, examine its business model and current management, and do the kind of thoughtful, 360-degree risk analysis that Geoff does so well.

The result is our cover story, and a sobering message for anyone who thinks that our aged economic expansion can last forever: It won’t. (See “The End Is Near,” on page 40.) The business cycle is just that, a cycle, and even after an extraordinary 110 months of nonstop growth—the second-longest expansion in 164 years of measuring—a change in tide is inevitable. And it’s probably coming sooner than most think.

What will precipitate this one, Geoff argues, is a combination of fundamentals and fomenters—factors that have been straining the economy for some time, along with more recent developments that compound the effects of the former. Debt is high up on both lists: Our borrow-and-spend Congress has found a dangerous kinship with today’s multitude of overleveraged companies; corporate America’s net debt-to-earnings ratio is at the highest level in 15 years, as Geoff reports.

The Trump administration’s outright hostility to immigration, likewise, further constrains the growth in America’s demographically challenged labor force. And the specter of an escalating trade war, petulant fights with long-standing allies, and rising interest rates and oil prices are combining to slow trade and investment even more.

As for when all this will lead to a recession—or, for that matter, affect the stock market—that’s anybody’s guess. As Geoff points out, we could easily end up with a “melt-up” in the market before we get a meltdown. But, as you’ll see in our cover story, the signs are abundant that we’re headed that way.

This issue of *Fortune*—which includes our annual Global 500 ranking (please see page 67)—also brings a related reminder to the business community: U.S. companies face more competition today than ever. A decade ago, America was home to nearly a third (153) of the world’s 500

largest companies by revenue, which together account for a stunning \$30 trillion in revenue or 38% of global GDP. Our share is now a quarter (126).

Over the same 10 years, meanwhile, China boosted its own representation on this venerable list from 29 companies to 111.

None of the above, of course, should make anyone think that America has lost its innate entrepreneurial energy or competitiveness. For proof, just spend a few minutes going through one of *Fortune*’s favorite economic indicators—our 40 Under 40 list (please see page 52). From triple threat writer-actor-director Jordan Peele to Sunrun CEO Lynn Jurich, who has outmaneuvered Elon Musk in the fight to dominate the U.S. solar market, America is brimming with creative and ambitious disrupters.

You can be sure that advantage won’t go away—no matter when the business cycle turns.

CLIFTON LEAF
Editor-in-Chief, *Fortune*
@CliftonLeaf

THE
WORLD IN
⑦
PAGES

BRIEFING



The Supreme Court: Coming to a Cubicle Near You

The country's highest court has been changing the workplace—and, in its more conservative incarnation, could alter it still further. By Jeff John Roberts

THE COURT

THE CONSERVATIVE GRIP on the Supreme Court is set to be cemented for a generation if President Trump's nominee, federal appeals-court judge Brett Kavanaugh, navigates his Senate confirmation hearing. The arrival of Kavanaugh, who is ideologically further to the right than outgoing Justice Anthony Kennedy, would influence many aspects of U.S. society—not least the rules governing American workplaces.

As the court wrapped up its most recent >>

BRIEFING

▷▷ term, it delivered a pair of decisions that effectively expanded employers' leverage over their employees. In *Janus v. AFSCME*, Justice Samuel Alito wrote for a 5-4 majority that speech protections in the First Amendment mean that government workers cannot be compelled to pay union dues, since that could force them to financially support political stances they didn't agree with. *Janus* will hurt the coffers of public unions, which fight for worker benefits and protections and support candidates who do the same.

In a blistering dissent, Justice Elena Kagan accused the majority of "weapon-

izing" the free speech clause for political ends. Indeed, *Janus* is one of many recent rulings that define freedom of expression in ways favorable to corporations. Others include the 2014 *Hobby Lobby* decision, which gave a religious exemption to employers who objected to covering birth control in their health care plans. As for Kavanaugh's record, it strongly suggests that he supports this view of the First Amendment (see sidebar).

While these rulings have generated considerable Sturm und Drang, another recent Supreme Court case, on class action lawsuits brought by employees, packs a broader

punch. In a 5-4 ruling, in May, the court held that companies are free to include clauses in employment contracts that force workers to use arbitration rather than courts to enforce their rights—a decision with implications in areas ranging from pay disputes to workplace sexual harassment.

"This is great news for those of us who believe in freedom of contract, and who think the remedy for an unsatisfactory job is to quit and get another," says Walter Olson, a legal scholar with the libertarian Cato Institute. Labor advocates oppose the arbitration clauses, in part because they result

in sealed settlements that can keep shady practices under wraps. Craig Becker, general counsel for the AFL-CIO, argues that while employees can pursue cases with state and federal agencies, these agencies are understaffed and don't present the same deterrent as a potentially costly lawsuit. Congress could change the arbitration law, but that would likely require both a Democratic Congress and a Democrat in the White House.

The paper trail suggests that Kavanaugh supports employers' rights to enforce contracts like these—effectively making him the sixth vote in a powerfully pro-business bloc. Knowing that the high court will be a bulwark against frivolous lawsuits will free up companies to be more nimble in hiring the people they need and removing nonperformers.

Still, even as employers enjoy the most power they've had in half a century, they may be hesitant to exert it too forcefully. That's because they also have to answer to an even more powerful body: the court of public opinion. And at a time of sluggish wage growth and simmering economic insecurity, there's no telling how that court may rule if business overplays its hand.



IN KAVANAUGH'S PAST RULINGS, CLUES TO HIS VIEWS ON BIG BUSINESS

SEAWORLD OF FLORIDA



PEREZ

Decided April 2014

Kavanaugh was the lone dissent in a case involving a SeaWorld trainer killed during a killer-whale show. The court upheld a ruling that SeaWorld violated workplace safety standards. But Kavanaugh, in a scathing dissent, likened the whale show to a dangerous sport such as football or boxing, where the participants know the risks.

VENETIAN CASINO



NLRB

Decided July 2015

Writing the opinion of the court, Kavanaugh asserted that the Venetian Casino in Las Vegas did not violate labor laws by requesting that police issue citations to union workers demonstrating on its private property. Kavanaugh wrote that the casino had a First Amendment right to petition the government in that matter.

AGRI PROCESSOR



NLRB

Decided Jan. 2008

Agri Processor, a meatpacking company in New York, refused to recognize the formation of a workers union because undocumented migrants it employed had voted for unionization. [The company fired the workers soon after.] Kavanaugh agreed that NLRB protections do not apply to the undocumented.

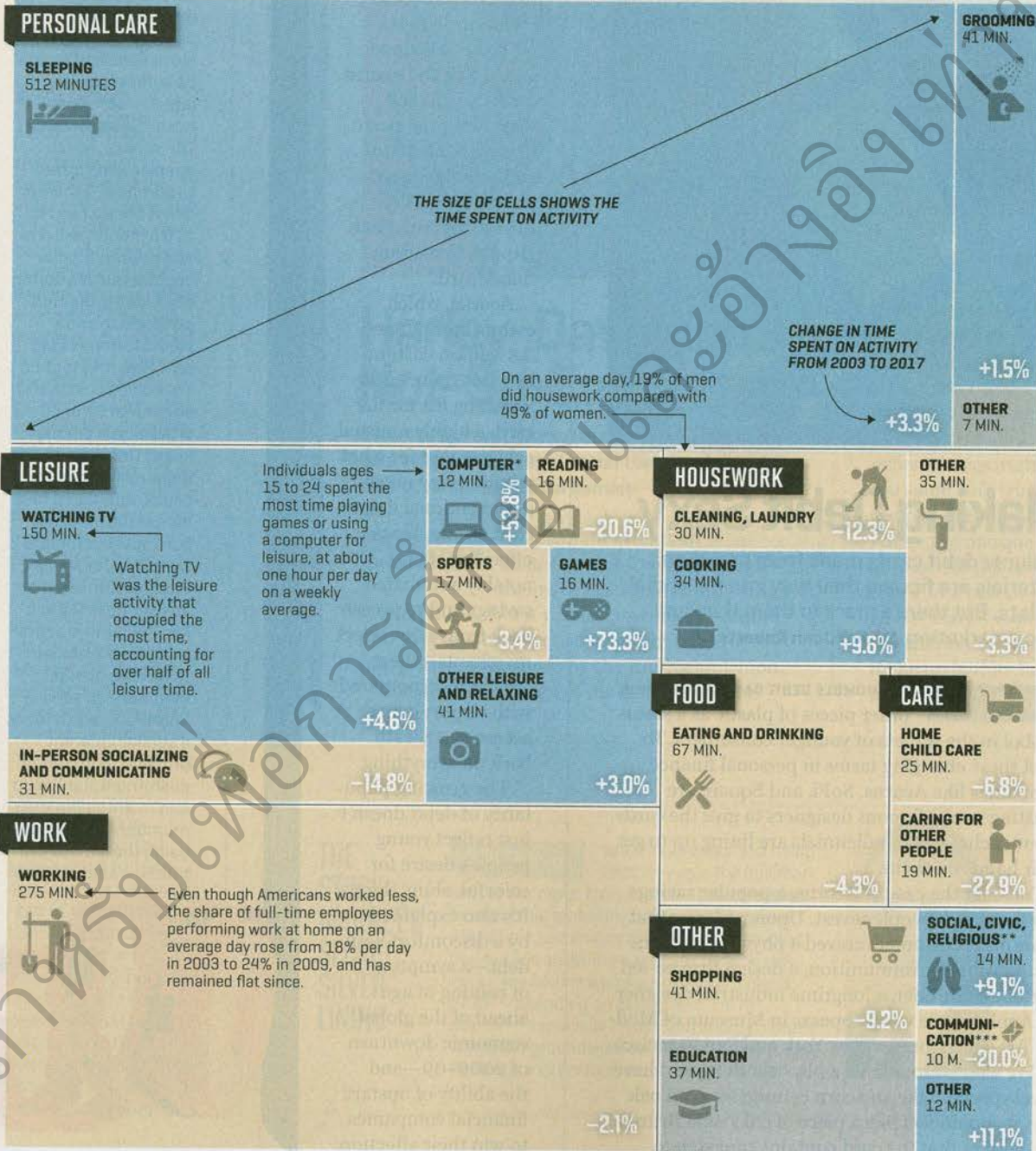
ANALYTICS Seeing Trends in the Data

HOW AMERICANS SPEND THEIR TIME

Time spent on various activities by Americans 15 and older during a regular weekday in 2017.

■ INCREASE IN TIME SINCE 2003 ■ DECREASE IN TIME ■ NO CHANGE

AMERICANS ARE TRADING LONG HOURS at work for more screen time at home. According to the Bureau of Labor Statistics, Americans worked fewer hours during the week in 2017 than in 2008 but spent more time bingeing on TV shows at the expense of socializing. People in the U.S. are also getting less active time during the week, though at least some have listened to Arianna Huffington, because time spent sleeping is up.



NOTE: ALL ACTIVITIES INCLUDE TRAVEL TIME * USED FOR LEISURE BUT EXCLUDING GAMES ** ORGANIZATIONAL, CIVIC, AND RELIGIOUS ACTIVITIES *** PHONE, MAIL, EMAIL



Making Debit Sexy

Designer debit cards made from premium materials are finding their way into millennial wallets. But there's more to them than just fancy marketing. **By Jeff John Roberts**

CARD CACHET

THE HUMBLE DEBIT CARD is eclipsing other pieces of plastic as a status symbol in the wallets of younger consumers. To meet these changing tastes in personal finance, companies like Acorns, SoFi, and Square are enlisting world-famous designers to give the cards a new cachet—and millennials are lining up to get their hands on them.

Consider the case of Acorns, a popular savings app that helps people invest. Upon realizing that many of its customers craved a physical card, the company hired Ammunition, a design firm co-led by Robert Brunner, a longtime industrial designer for Apple whose work appears in Museum of Modern Art collections in New York and San Francisco. “We wanted to deliver a physical thing and have it feel special. Like an acorn coming from an oak tree, it should feel like a piece of oak,” says Brunner, adding that the card contains tungsten to

make it denser.

He's not kidding. A sample card inspected by *Fortune* proved to be significantly heavier than the Chase Sapphire Reserve, an upscale credit card known for its heft. Brunner added that the Acorns card's weight and sleek design is meant to impart a sense of status in the same way as the Chase card or the American Express Centurion “black card.”

Acorns, which counts more than 3.5 million customers, says there's now a waiting list for the card, a highly unusual achievement for what remains very much a conventional debit card. While Acorns offers benefits—notably automated savings and 10% cash back from a few select merchants—these are modest compared with airport lounge access or 3% cash back on everything.

The growing popularity of debit doesn't just reflect young people's desire for colorful, shiny things. It's also explained by a discomfort with debt—a symptom of coming of age ahead of the global economic downturn of 2008–09—and the ability of upstart financial companies to win their affection.

HAIL MARY

WILL MOVIEGOERS PASS ON SURGE PRICING?

AS INVESTOR CONCERNS grew amid dwindling cash reserves, MoviePass had to do something. Its latest order of business? Surge pricing. The service, which enables subscribers to purchase a theater ticket once a day for \$10 a month, will now add a surcharge for popular movies during peak hours. Gearing up to see the new *Mission: Impossible* on a Saturday night? That could cost you an additional \$2 to \$6. While surge pricing keeps the supply and demand for Uber in check, additional fees defeat the main reason most customers signed up for MoviePass, says investment adviser Ross Gerber. MoviePass has a similar business model to flexible fitness membership service ClassPass, and it faces a similar inherent problem: Both rely on customers signing up and maintaining their memberships but not using the service too much. —ARIC JENKINS





DNA DILEMMA

WHO OWNS YOUR GENES?

THE LONG-AWAITED arrest in May of the infamous "Golden State Killer" ignited fervent debate about the potential privacy threat of DNA ancestry services. And though the case is already slipping into history, the debate is lingering, threatening the popularity of services like 23AndMe and AncestryDNA.

Investigators solved the cold case by rifling through GEDMatch, an open-source database of genetic information.

While there's certainly value in understanding more about potential hereditary diseases or finding lost relatives, privacy advocates fear some users of genealogy services aren't making informed decisions about their most valuable information.

"I'm worried that people don't fully understand the potential risks of reidentification, law enforcement agencies getting that data, and of genetic discrimination," says Joel Reynolds, postdoctoral fellow of bioethics at the Hastings Center. "This is very high stakes."

—MONICA RODRIGUEZ



Harley-Davidson's Not-So-Easy Rider

Few things can drown out the exhaust of a hog, but a presidential tweet might be one of them. By Daniel Bentley

TARIFF WOES

THE CLASSIC AMERICAN bike-maker Harley-Davidson faced the ire of President Trump when it announced that it would move some production overseas in response to tit-for-tat tariffs imposed on U.S. goods by the European Union. It's the second edge of the tariff sword for

Harley, 35 years after President Reagan used a 45% import duty on Japanese bikes to save the Milwaukee-based company.

Trump said customers will punish Harley-Davidson, but that's unlikely to come to fruition. Bikes for the domestic market will still be made in the U.S., and despite an aging customer base and sagging sales, the company still maintains incredible brand loyalty.

While Harley has struggled to attract young American riders who prefer lighter and quieter bikes for urban transportation, the same isn't true in the rest of the world where the marque still carries the cool factor of a pair of Levi's. Harley expects international sales to make up half its business by 2027.

THE STOCK MARKET'S SECRET SILVER LINING

HIDDEN BULL

YES, TRADE WARS and rising debt threaten the bull market [as our cover story explains]. But **Richard Turnill**, chief global investment strategist at BlackRock, sees signs of the next bull in what businesses are doing today. Tax cuts, Turnill says, "are fueling a pickup in capital expenditures"—spending on equipment and research—"especially in tech and energy." That's laying the groundwork for a future stock surge. Read more at Fortune.com. —MATT HEIMER



RETAIL

H&M'S
HEAP OF
TROUBLE

A massive pile of unsold merchandise threatens the fast-fashion purveyor's profitability and reputation.

By Phil Wahba

HENNES & MAURITZ has a \$4.1 billion problem on its hands: It's not selling its fast fashion fast enough.

The Swedish company stunned investors in June when it reported "stored goods," i.e., unsold inventory, had risen to almost 20% of sales in the quarter ended May 31, up two percentage points over a year



H&M:
languishing
in overstock
limbo.

earlier, despite efforts to tame the overstock beast. [As a comparison, Gap Inc.'s inventories represent 13% of sales.] It was the seventh straight quarter things got worse on that front and a setback, given H&M's goal of getting that figure down to 12% to 14% of sales next year.

The result has been a dent in profits [operating

profits fell 3.3 percentage points to 11.6% of sales] and an impediment in getting new product to stores.

The retailer's inventory problems go back to its relatively late start in e-commerce, which has made merchandising more complicated compared with a stores-only business. [Rivals like Zara who were earlier to the

web can quickly shift languishing items online.]

Managing stocks can seriously help boost profits: In their last quarters, Kohl's and Macy's reduced their inventories by five and seven percentage points, respectively, and both saw gross profits increase as a result.

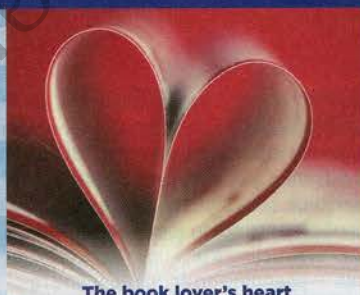
Efficient stockkeeping enables retailers to be less bogged down by products stuck on store shelves when they could more easily be sold online or in another location. It also avoids excessive discounting which can be a drag on margins.

Inventory management may not be glamorous or sexy, but it is now the front line in the retail wars.

Pulmonary hypertension puts unbearable stress on the heart.



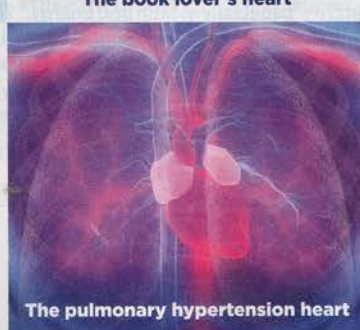
The food lover's heart



The book lover's heart



The lover's heart



The pulmonary hypertension heart

Often misdiagnosed - as asthma, for example - Pulmonary Hypertension (PH) can cause death from heart failure. There is no cure. But at the Pulmonary Hypertension Association, we're giving hope to PH patients and caregivers.

Learn how you can help at
www.PHAssociation.org



Pulmonary Hypertension Association
We're putting our heart into finding a cure.



The Last Straws

A problem polluter, but one easy to replace, the humble plastic drinking straw's days are numbered. By Beth Kowitt

REDUCE, REUSE

IN A MOVE INTENDED to cut back on waste, Starbucks has joined the growing number of companies eliminating plastic straws from its locations.

By 2020, Starbucks says it will replace the 1 billion plastic straws it uses every year with recyclable strawless lids or straws made with alternative materials like paper and compostable plastic.

The cost of these alternatives is not insignificant—paper straws cost up to eight times as much as plastic ones. But that charge seems to be worth it for Starbucks, a company that tries to project a progressive image.

In July, Seattle—Starbucks' home market—banned restaurants from using plastic straws and

utensils. The ordinance is a reflection of a broader global movement to cut back on plastic usage as consumers become more aware of its environmental impact—particularly its role in polluting the world's oceans. Several other U.S. cities have already implemented similar bans or have proposed legislation in the works.

Straws are a small contributor to the overall plastic problem, but they are an easy item to eliminate since most people don't require a straw to consume a beverage.

It's an environmental trend that has gained traction quickly: Companies, such as food service operator Bon Appétit Management, Alaska Airlines, Ikea, and SeaWorld have already banned plastic straws, and McDonald's is currently testing a nonplastic alternative.

Starbucks has come under fire from environmental groups in the past because its paper cups are hard to recycle—a problem not unique to Starbucks. In March, the company committed \$10 million to help develop a fully recyclable and compostable hot cup.

TICKED OFF

They're the size of a pinhead, but ticks are an expensive problem for the United States.



2X

The number of tick-borne illnesses in the U.S. doubled in less than a decade to 48,000 in 2016.

9

There are 202 drugs considered to be in short supply by the FDA, nine of which are used to treat tick-borne diseases.



82%

Lyme disease represents the overwhelming majority of tick-borne illnesses.



\$50 M.

Grant money awarded through 2017 by the CDC to five universities studying vector-borne diseases.

—MCKENNA MOORE

FOCUS

PRACTICAL
EXPERTISE

TECH

ELON MUSK'S MOST EXCITING COMPANY IS BORING

Literally. The Boring Co., currently at work drilling in Southern California, aims to create what the public sector sometimes cannot: cheap mass transit.
By Carson Kessler

Musk peeks inside a Hyperloop track door at SpaceX offices in Hawthorne, Calif.



UNDER THE WARM ASPHALT of West Los Angeles, beneath bumper-to-bumper traffic and swaying palm trees, Elon Musk is searching for answers. There, a boring machine named Godot may soon grind away at a 2.7-mile tunnel to run below Interstate 405, a key reason that L.A. retains its crown as the U.S. city with the worst traffic.

The tunnel currently awaits a permit, and Angelenos may be waiting a while before it's complete. (Paging Vladimir and Estragon.) But Musk, who spends his days juggling CEO roles at electric-auto maker Tesla and aerospace outfit SpaceX, has something to prove. Practically speaking, the Bel Air resident wants easier transit between his homes and the SpaceX campus in Hawthorne, 17 miles to the south. From a theoretical standpoint, Musk hopes to demonstrate that subterranean, supersonic public transit isn't just a futuristic fantasy but a realistic solution for what ails many of America's busiest (and most cash-trapped) metropolises.

Enter Musk's cleverly named Boring Company. It has announced projects to connect Baltimore with Washington, D.C. (a 35-mile span), and downtown Chicago with O'Hare International Airport (a 17-mile stretch). In Chi-town, the Chicago Express Loop promises to ferry passengers from one end to the other in 12 minutes—far less time than the usual 25 to 90, depending on the mode of transportation. This Loop—not to be confused with Hyperloop, an ultrafast, regional version—boasts electromagnetic pods that each fit 16 passengers and can reach speeds of 150 miles per hour. It plans to transport nearly 2,000 people an hour in each direction, with cars departing every 30 seconds to two minutes.

But it's not just technology that the Boring Co. is bringing to the table. Unlike other urban projects of this size, no government funding is necessary to realize the Chicago project: The Boring Co. promises to privately fund the entirety of what will likely be a multibillion-dollar effort. And thanks to a City of Chicago request for proposals, the plan has a complete go-ahead from officials—unlike the L.A. and D.C. projects, which face some time in legal limbo. That makes the Chicago Express Loop the Boring Co.'s first sizable victory and strongest validation from a city government to date, in what could be a path forward for future advancements in public infrastructure.

"Let's face it—federal support for urban rail projects is not likely to bounce back anytime soon," says Joe Schwieterman, director of DePaul University's Chaddick Institute for Metropolitan Development. "Cities will be left to fend for themselves, making it critical that they remain open to private-sector collaboration."

Major U.S. cities face a chronic shortfall in capital investment dollars. With 35,000 daily passengers projected to move

INVESTIGATION



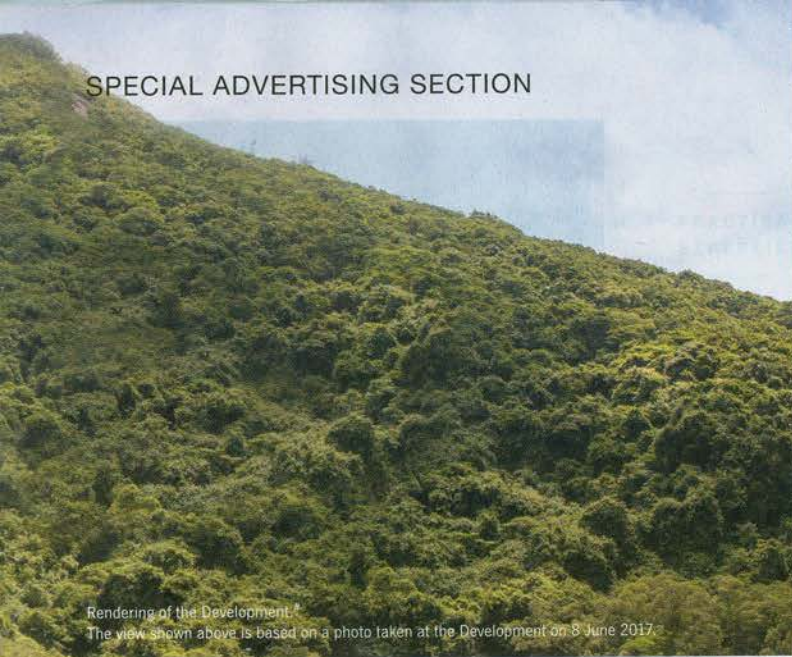
A rendering of the terminus for the Boring Co.'s Chicago Express Loop linking the city's downtown area with O'Hare International Airport. It could take as little as four years to build.

between the airport and downtown in 2045, Chicago is left with little choice but to leverage the private sector—and take a chance on Musk—to fill mobility gaps. But there are risks to placing public projects in private hands, warns Yonah Freemark, the urbanist behind *The Transport Politic*. In Chicago, for example, residents remain in the dark about the technical and economic feasibility of the Boring Co. project.

"The public sector is allowing the company to move forward with this project without actual consideration from the public," Freemark says. "That should be concerning for people who want to be involved in the transit future of their communities."

Elsewhere, regulatory hurdles and governmental requests—such as for environmental analysis and public hearings—have stifled the progress of Boring Co. projects in California and Maryland. "The signal systems, federal approvals required to put people on these vehicles, and the need for elevators and ventilation shafts when digging long distances beyond the surface—those are really big questions that are going to need answers," Schwieterman says. (The Boring Co. declined to comment.)

Still, Musk bores ahead. If he is successful in Chicago, elected officials across the country might be inclined to take a similar leap of faith. After all, if Musk can shoot for Mars, what's a little bedrock between friends? **■**



Rendering of the Development.
The view shown above is based on a photo taken at the Development on 8 June 2017.

HONG KONG SOUTH | SECRET GARDEN

Mindful Living Discover nature blessed with luxury at 8 Deep Water Bay Drive

Green is the color of life lived in luxurious seclusion. The architectural ambition of Hong Kong Island South's new residential development, 8 Deep Water Bay Drive, is to show respect for nature by blending seamlessly with the surrounding hills. Clever architectural aesthetics harmoniously integrate inner and outer environments, while the natural protection of the mountains and unique geographical location provide the ultimate in lifestyle privacy. Discover a life of richness and clarity surrounded by the beauty of nature.

"Green, the most gorgeous of all colors."

Mountain Inspiration, Hong Kong Island's Only Feng Shui Forest

Located north of Mount Nicholson and Mount Cameron, 8 Deep Water Bay Drive is east of Violet Hill and south of Shouson Hill. It is also nestled next to the country parks of Pok Fu Lam, Aberdeen and Lung Fu Shan, which cover more than 700 hectares¹ — equivalent to approximately 36 times the area of Victoria Park².

Next door, the southern foot of Mount Nicholson shelters Hong Kong's only Feng Shui forest — Nam Fung Road Woodland. Dating back to Hong Kong's earliest days, the woodland features the greatest number of plant species in Hong Kong, including many of great conservation value³. Surrounded by

mountains and ensconced in rich greenery, 8 Deep Water Bay Drive is a haven of luxury providing a lifestyle of secluded serenity.

"When you respect nature, nature gives back the most precious gift."

A Melding of Architecture and Nature

Surrounded by lush greenery, 8 Deep Water Bay Drive has been designed to integrate with the natural environment. The Development's centerpiece - Metta Garden[∞] - was planned with perfect unity in mind, joining inner and outer habitats with a sublime simplicity that captures the serenity of nature in all its inspiring forms.

Inside, living and dining rooms are bright and spacious, with horizon views over green hills and

opulent gardens. Each apartment features a uniquely large double balcony opening out from the living room and master bedroom, providing an abundance of natural light and superb panoramic views[†] for precious moments of quiet contemplation.

"Flowers are the most brilliant neighbors."

A Secret Garden in Harmony with the Environment

The center of the development is home to Metta Garden[∞] which features bountiful screen trees and colorful gardens that afford residents a high degree of privacy and a superb leisure environment. Upon entering, visitors are flanked by Lily Pond[∞] and Iris Garden[∞], then come to Sylvan Walk[∞] and Aura Point[∞] with their abundance of trees and

Name of the Development: 8 Deep Water Bay Drive (the "Development") District: Shouson Hill and Repulse Bay Name of the street and the street number: 8 Deep Water Bay Drive The website address designated by the Vendor for the Development: www.8deepwaterbaydrive.com The photographs, images, drawings or sketches shown in this advertisement/promotional material represent an artist's impression of the Development concerned only. They are not drawn to scale and/or may have been edited and processed with computerized imaging techniques. Prospective purchasers should make reference to the sales brochure for details of the Development. The Vendor also advises prospective purchasers to conduct an on-site visit for a better understanding of the Development site, its surrounding environment and the public facilities nearby.

(1) Agriculture, Fisheries and Conservation Department - http://www.afcd.gov.hk/english/country/cou_lea/cp_sa.html (2) Leisure and cultural services department - www.lcsd.gov.hk/en/parks/vp/intro.html (3) Hong Kong biodiversity information system - www.nature.edu.hk/field_sites/aberdeen-nam-fung-road
[∞] Clubhouse and recreational facilities and the date of completion thereof are subject to final approval by the relevant government authorities. The opening hours and use of the clubhouse facilities are subject to relevant laws, land grant, deed of mutual covenant, terms of use of the clubhouse and the actual site condition. The clubhouse and recreational facilities may not be immediately available upon handover of the residential properties of the Development. The use or operation of some facilities and/or services may be subject to consent or permit issued by the relevant government authorities and may be subject to additional charges. All names of the clubhouse facilities contained in this advertisement/promotional material are provisional. They may not be the same when the clubhouse is open for use. Promotional names in the promotional materials will not appear in the preliminary agreement for sale and purchase, formal agreement for sale and purchase, assignment or any other title deeds of residential properties of the Development.
[†] The photo was taken at the Development. It has been processed with computerized imaging techniques and is for reference only.
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Rendering of Living & Dining Room of Unit B on 17/F, Tower 1.[#]
The view shown above is based on a photo taken at the Development on 28 June 2017.

lush, manicured greenery. Plants, including many local natural shrub species, are carefully selected and arranged in a plethora of varieties to form a miniature ecosystem that remains vibrant in every season. A separate farm area provides a place for the joy of growing green produce.

The clubhouse sits right by the garden with generous leisure space. Residents can indulge in a range of facilities designed to pamper the body and soul, including inter-connected 20-meter indoor and 25-meter outdoor pools, Jacuzzi, gym, lounge and more.^{**}

"Those who show nothing reveal much."

Privacy as Priority

At 8 Deep Water Bay Drive, the privacy of residents is paramount. Each unit features its own private lift lobby, with a direct connection to the apartment for maximum privacy.

All residences are equipped with air purification features in their VRV air-conditioning system, while enhanced soundproofing in floors and walls, and concealed pipes, provide significant sound reduction — guaranteeing the privacy and comfort of every resident.

In addition, security systems are advanced and discreet, with multi-layers of protection in place. Security officers are professionally trained by former members of the elite Special Duties Unit[®], giving residents the absolute best protection for complete peace of mind.

"Quality is in the details."

Presenting House Living in the Sky

Another unique feature of the project is its beautiful use of space. Combining the design concepts of both a house and apartment building, Nan Fung Group and Vervain Resources present "House Living in the Sky" — quiet and meticulously created space featuring all the benefits of apartment living

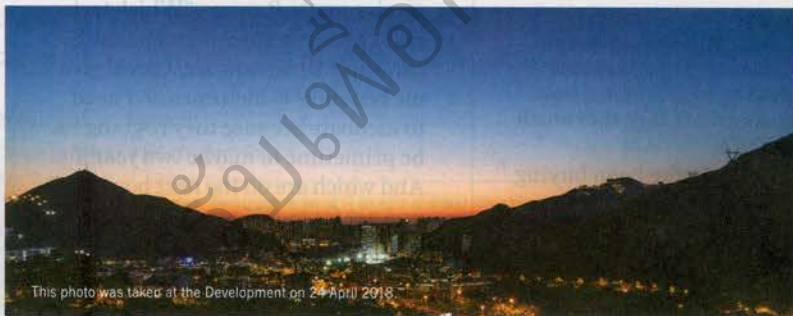
with the privacy and seclusion of a detached house.

Dining and living rooms offer superb views[†] at the front, while the bedrooms and adjoining family room are located at the rear, creating a clear separation of common and private realms while maintaining a social link between the two. Inspiration for the double balcony design was also drawn from free-standing homes, with the living room opening out onto a large balcony as a house opens onto a front yard. The master bedroom opens onto another ample balcony in the manner of a back garden, inviting the verdant beauty of nature into the home.

Nature and life are interdependent and mutually enriching. 8 Deep Water Bay Drive offers a total of 52 apartments. To live here is to walk as one with nature in both body and mind, embracing all things in a spirit of mindfulness, cultivating a life of joy and comfort.

FOR MORE INFORMATION, PLEASE VISIT

www.8deepwaterbaydrive.com



This photo was taken at the Development on 24 April 2018.



Rendering of the Development and swimming pools. The view shown above is based on a photo taken at the Development on 8 June 2017.

[†] The relevant training contract of the guards has yet to be finalized and signed, and the training and provision of guards are subject to change from time to time. The Vendor reserves the right to change the training and provision of guards from time to time.

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[^] The photo was taken at the Development. It has been processed with computerized imaging techniques and is for reference only.

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CONVERSATION

Q+A

MR. 70 BILLION

We sat down with Pierre Nanterme, chairman and CEO of Accenture, to discuss how the master strategist is using tech to transform the company, No. 316 on this year's Global 500 list. Interview by Clifton Leaf

FEW COMPANIES have gone through a more vigorous digital transformation than Accenture. The professional services firm now derives 60% of its nearly \$37 billion in revenue from its digital, cloud, and security businesses—up from 32% about three years ago. The man behind that metamorphosis? Accenture's dealmaking CEO, Pierre Nanterme. The bet has paid off: Since Nanterme became boss in January 2011, Accenture has delivered a total return to shareholders of more than 300%. *Fortune* sat down with the 58-year-old Frenchman in the spring to learn where he thinks business is headed next. Here are edited excerpts from that conversation.

FORTUNE: Accenture has invested some \$5 billion in 90 acquisitions over the past five years alone. How can one business manage that much integration?

Nanterme: First, we've been buying only very good companies. What do I mean by good companies? They're making money. I prefer to pay the price for a company that's already profitable and growing rather than a cheaper one that's neither. Second, we buy only companies sharing our values. So we've put maximum scrutiny on compliance ethics in the acquisi-

tions. And third, we set a very specific integration protocol. It doesn't mean we're not going to fail. But I would say so far, so good.

Investors seem to be saying the same thing: Your stock is on a tear. Since I arrived, we've created \$70 billion in market cap. You could call me "Mr. 70 Billion."

There's our headline. You've led Accenture through its own digital makeover—and have been a tech evangelist to your clients. What new technology will be most transformative in the coming years?

For us, the aim is not to focus on what the technology of the 22nd century will be. Our interest is in how technology can leverage people *now*. So our first job is to understand these new technologies. Our second, which is very important, is to understand *when* they're going to be relevant and effective for an industry. You need to understand the maturity curve of these technologies. Our third job is to understand the use case—and that will vary a lot by industry.

How will artificial intelligence transform industry?

We think it's more helpful to think of "artificial intelligence" as "applied intelligence." The questions I receive most often are, "Which technologies are mature enough that I can apply them now and they'll give me benefits? Which ones do I need to incubate because they're going to be primetime in maybe two years? And which are on the next horizon and not for me?" Our clients don't want to be pioneers.

Where do A.I. and other buzzy technologies fit on that spectrum?

Machine-learning algorithms and analytics are here and now. Blockchain, for many industries, is tomorrow. Quantum computing is the day after tomorrow. **■**

HELP SAVE THE DIVE MASK

The coral reefs where we dive need help. Overfishing, careless tourism and climate change are putting reefs and people's livelihoods at risk. From the Coral Triangle to the coastlines of Africa and Australia's Great Barrier Reef, WWF is promoting responsible tourism and pushing for protected areas and responsible fishing. Help us look after the world where you live at panda.org



Tubbataha Reefs Natural Park, Palawan, Philippines.

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Friend in town,
dinner in fridge,
kids at practice.
Happiest hour.

- ✓ Shared Family Calendar
- ✓ Shopping & To Do Lists
- ✓ Meals & Recipe Box



Life, simplified.

Get Cozi. The #1 organizing app that serves up family life, neat.



TIME
WELL SPENT

Children play
cricket on the
sands of Cape Town's
Muizenberg Beach.

PASSIONS

TRAVEL



SOUTH AFRICA'S MOTHER CITY

Let our expert concierge guide you through Cape Town. By Adam Erace

FIRST-CLASS WINES, beautiful beaches, powerful history—how do you take it all in when visiting one of Africa's most vibrant and cosmopolitan cities? At the Silo, a new hotel perched atop the continent's largest modern-art museum, concierge Hoon Kim has a plan for your Cape Town trip. >>

PASSIONS

Emerging neighborhood: Woodstock

used to be quite industrial, with lots of factories, but it has become an area filled with interior designers, graphic artists, artisanal breweries, and contemporary galleries like SMAC and Whatiftheworld. There's a famous Saturday market at the Old Biscuit Mill, which started Woodstock's renaissance a few years back. We call it the Brooklyn of Cape Town.

Best new restaurant:

At the very cool Janse & Co., chef Arno Janse van Rensburg is all about local produce. The food is experimental and creative—I recently had a sensational grilled leek dish with cream cheese and almonds—but it's not fine dining. The restaurant is very simple, with dark walls and candles on the tables. There's a wonderful courtyard, too; sometimes I go there just for a nice glass of chilled wine.



[1] A weekly food market in Woodstock. [2] Guests enjoy the infinity pool on top of the Silo hotel.

**Urban escape:**

Franschoek—Afrikaans for “French corner”—is about an hour from Cape Town and is known as the culinary capital of South Africa. It's where the Huguenots first settled around 1600 and today is home to some of the country's best restaurants and wine estates. Everything in this quaint town has a French feel, which is really weird and wonderful in the middle of South Africa. Haute Cabrière is a family-owned boutique wine estate here.

Beach break:

Because of melting icebergs from the South Pole, the South Atlantic Ocean surrounding Cape Town is actually colder in the summer than in the winter. Most people here prefer suntanning to swimming, but surfing is definitely very popular. Camps Bay and Clifton Beach are famous surf beaches, but I like Muizenberg Beach on the southern coast for its sand and milder water temperatures.

Locals' secret:

Reverie Social Table is a proudly South

African farm-to-table eatery located in the quirky Observatory neighborhood. The chef, Julia Hattingh, is young and ambitious; I've never seen anyone as passionate about local produce and wine. She creates the five-course menu around a rotating wine selection. It's served at a long table that accommodates maybe 12 people max, so you have to like sitting with strangers.

Must-have

souvenir: South Africa is famous for leather goods, especially ones made

from ostrich. Cape Cobra Leathercraft is a boutique whose owners, the Schafer family, make everything by hand, from belts to credit card holders to fabulous handbags, using very high-quality local leather.

Things to avoid:

Tours of Robben Island, where Nelson Mandela was imprisoned, are government regulated and not the best run. To learn about the painful memories of the apartheid era, try the District Six Museum instead.

THE
\$10,000
DAY

**We asked Kim to plan us a special, singular day in**

Cape Town: The day would begin with a dramatic, scenic helicopter trip over the Cape Peninsula, affording jaw-dropping views of the waterfront, Table Mountain, and the Cape of Good Hope. Upon the guests' return to the city, we'd whisk them off in a Maybach limousine for a tapas lunch at Chef's Warehouse Beau Constantia in the heart of

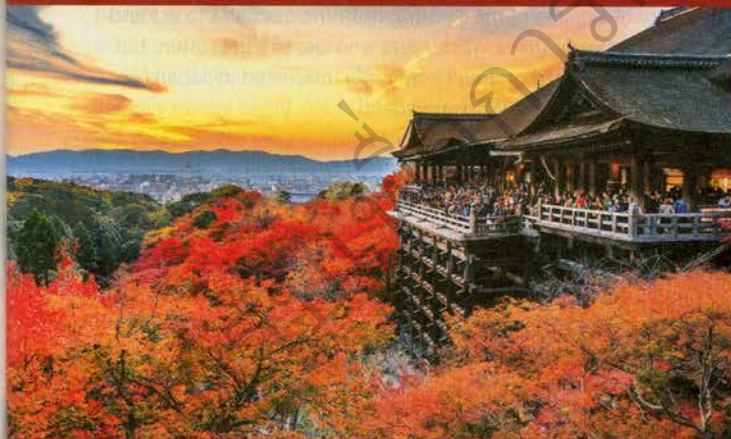
wine country. After lunch, guests would return to Cape Town for a luxurious sunset yacht excursion aboard the *Only One*, where, in between sips of South African bubbly and bites of gourmet canapés, they could go for a swim before zipping out for a spin around Table Bay. And to conclude the day: a relaxing full-body massage under the stars on the rooftop of the Silo hotel. ■

JAPAN

GLOBALIZATION'S HUMAN FACE

Prime Minister Shinzo Abe came to power in December 2012 on a self-imposed mission to revive Japanese growth through the three arrows of “Abenomics”—a combination of loose monetary policy, government spending, and growth through deregulation. Reviving the regions by recasting Japan as “a tourism-oriented nation” was among his promises.

Over the past five years, the number of inbound tourists to Japan has soared. And while the money those tourists spend is giving a healthy boost to the nationwide economy, the boom is also shining a light on some weaknesses in the country’s tourism industry. But if these bottlenecks can be addressed, Japan’s tourism industry can become a model for other sectors, showing them how to thrive in today’s global, data-driven service economy.



THE NEW TOURISM

Interview with Professor Noriko Yagasaki
of Toyo University's Department of
Tourism Management

PAGE S14

JAPAN | GLOBALIZATION'S HUMAN FACE

“A

ARGUABLY THE MOST TANGIBLE SUCCESS STORY IN

Abenomics”: That is how Jesper Koll, head of Japan for WisdomTree, an investment company, described the country's inbound tourism boom in *The Japan Times* in March. Well-timed supply-

side reforms, from the deregulation of visa rules to the increase of airport landing slots, fed into the Asian middle class's hunger for a new holiday destination, sparking a virtuous circle. Now tourist spending, which accounts “for the equivalent of almost 20% of the growth in Japan's consumer spending” since 2012, according to Koll, is reinvigorating economically anemic regions.

The raw statistics are impressive: Inbound tourist numbers doubled from 6.8 million in 2009 to 13.4 million in 2014, then doubled again to 28.7 million last year. The government recently upped the ante by doubling its own 2030 target to 60 million people. But will the next round of gains come as easily?

In *The Future of Japan's Tourism*, an October 2016 report published by McKinsey & Company, the consultancy identified several problems that could hamper Japan's smooth rise.

These include an overdependence on tourists from East Asia; “skewed regional distribution,” (i.e., the majority of tourists sticking to the classic “Golden Route” from Tokyo to Osaka via Kyoto); and airports and hotels bumping up against capacity constraints.

The preponderance of Asian tourists is a particular worry. Together, China and South Korea account for *more than half* of Japan's inbound tourists. In both cases, however, the bilateral relationship is difficult, and political flare-ups can cause visitor numbers to crash.

That is one reason the Japan National Tourism Organization (JNTO), the government-funded body responsible for promoting Japan as a destination, is working to build a more even balance of visitors. In February it launched “Enjoy My Japan,” a campaign designed to increase the numbers of European, North American, and Australian tourists, who accounted for a mere 11% of 2017's total. And bringing in more Westerners won't just reduce the risk of depending on a limited number of countries; it will also increase tourist spending, because Westerners—particularly Europeans—take longer vacations and thus spend more money than other nationalities.

Rather than advertising the usual, familiar attractions like temples, shrines, and Mount Fuji, the campaign showcases a variety of aspects of the country, from the outdoors to art and cuisine. “Our target is Westerners who like to travel often, but haven't yet visited or aren't especially interested in Japan,” says Satoshi Seino, JNTO president.

OPENING THE DOORS OF PERCEPTION

One invisible barrier cited by McKinsey as dampening tourists' interest in Japan is its supposed “lack of affordability,” a misapprehension dating back to the long-expired 1980s bubble economy. While flying to Japan inevitably costs more for Westerners than for nearby Asians, no one finds the country overpriced once they get there, Seino argues.

This view is seconded by Chris Kirkland, co-founder and CEO of Tokyo Cheapo, a travel website for people who want to wring maximum enjoyment from Japan's capital with minimum outlay. The site launched in 2012, when the yen was one-third stronger against the dollar, and Tokyo still topped Mercer's annual *Cost of Living Survey*. “No one had done a guide to Tokyo on the cheap. We saw an opportunity to fill that content gap,” Kirkland says. Appropriately enough, Kirkland's site—which now gets 1.5 million monthly page views—broke through with a cheeky, contrarian piece on how to spend three days in Tokyo for just \$100. He continues to wage war against “urban



“OUR TARGET IS WESTERNERS WHO LIKE TO TRAVEL OFTEN, BUT HAVEN'T YET VISITED OR AREN'T ESPECIALLY INTERESTED IN JAPAN.”

SATOSHI SEINO
PRESIDENT, JNTO

"NO ONE HAD DONE A GUIDE TO TOKYO ON THE CHEAP. WE SAW AN OPPORTUNITY TO FILL THAT CONTENT GAP."

CHRIS KIRKLAND
CEO AND CO-FOUNDER, TOKYO CHEAPO



legends" of astronomically expensive watermelons and \$500 sushi lunches that too often, he says, swamp the reality of the many affordable options Japan offers. Kirkland's audience, however, is not limited to cash-strapped youngsters. "Rich people are cheapos too. After all, no one likes to overpay," he says.

While Kirkland is chipping away at Japan's image being as prohibitively expensive, other web entrepreneurs are changing tourist behavior in different ways. Zurich-based Jan Knüsel, the founder of *Asienspiegel.ch*, a Japan-focused news and travel site, is introducing his Swiss-German audience to less-crowded alternatives to the Golden Route through a series of photo books. "The Swiss have a big appetite for the countryside and for hiking. They want to go to places where there aren't a lot of people," he explains.

Of course, Swiss-Germans represent JNTO's ideal demographic: Eager to get off the beaten track, they stay in Japan for up to a month, and, being accustomed to Swiss prices, don't find Japan at all expensive. "My customers spend money to get quality. In Japan they get it. That's why it's popular," Knüsel states.

REGIONS OF JAPAN, UNITE!

People like Knüsel are encouraging overseas tourists to visit lesser-known parts of Japan. And those Japanese regions are forming alliances to market themselves better. "Japanese prefectures used to promote themselves on an individual basis," says Seino. "It made no sense. Local authorities should try to work together."

This sort of cross-prefectural marketing is the responsibility of so-called destination marketing/management organizations (DMOs). In Japan, the best-regarded of these is the Setouchi DMO, which represents the seven prefectures that border the Setouchi Inland Sea in western Japan.

What distinguishes DMOs from the local tourist associations they replaced? Strong leadership and professional know-how versus a culture of equal say and well-meaning amateurism, says Tomohiro Muraki, chief marketing officer of the Setouchi Tourist Authority. "People in Japan recognized the need to bring in professionals to manage specific areas and their marketing," he says.

That professionalism is evidenced by the two multilingual, video-rich, and frequently refreshed websites that Setouchi DMO has developed to promote the Inland Sea area to tourists. The organization also created a strategic set of marketing themes, from cycling and cruising to art and food, around which it encourages local businesses to develop travel products and services. Uniquely, the Setouchi DMO has its own \$90 million fund to invest directly in tourism-related businesses. Its first investment? *Guntû*, a 19-room "boutique vessel" that offers luxurious cruises around Japan's Inland Sea.

But *Guntû* is the exception rather than the rule. "Most tourism-related businesses are small and don't have great marketing capabilities," Muraki says. That is why the Setouchi DMO helps local business by providing services like translation,

CONTINUED ON PAGE 57

"PEOPLE IN JAPAN RECOGNIZED THE NEED TO BRING IN PROFESSIONALS TO MANAGE SPECIFIC AREAS AND THEIR MARKETING."

TOMOHIRO MURAKI
CHIEF MARKETING OFFICER,
SETOUCHI TOURIST
AUTHORITY



CHANGING PERCEPTIONS

Fujio Mitarai has transformed **Canon** from a camera and office-equipment maker into a far more wide-ranging business. Now he wants the world to see the scope of the changes he has made.

WHAT WILL CANON LOOK LIKE BY 2020? It's an important question, because that is the year that will mark a full quarter-century since Chairman and CEO Fujio Mitarai first launched his Excellent Global Corporation Plan, a bold multiyear initiative to transform the Japanese camera and office-equipment manufacturer into one of the world's great and enduring companies. "By 2020, our business portfolio will have changed enormously," Mitarai says. "The company name will still be the same, but we will operate across a far broader domain than we did 15 or 25 years ago."

This under-the-hood transformation is not something that came about by accident. Mitarai became president of Canon in 1995, just as the great switchover from analog to digital was accelerating. "With cameras and office machines being digitized, replacement demand sparked off a boom. As a result, we enjoyed eight consecutive years of rising sales and profits," he says.

Mitarai did not let this success go to his head. He knew that the camera and office-equipment markets were mature even before digitization, and that, once the switchover had run its course, growth would inevitably slacken. Hence his decision to spend the boom years hunting for new engines of growth. "I wasn't just looking at random," he says. "I was looking for businesses that had links to our existing businesses."

A SERIES OF LATERAL MOVES

A series of major deals followed. One of the first steps in Mitarai's drive for lateral expansion came with the 2010 acquisition of Océ, a Dutch manufacturer of high-speed digital commercial printing presses. As a maker of printers and copiers, Canon already had a foothold in the printing industry. An advance into commercial printing—where digital printing could offer image quality comparable to traditional offset printing, plus the advantages of easily customizable small-lot orders—was a logical step.

Mitarai's next big acquisition took Canon into network cameras (network-connected cameras used for such purposes as surveillance, market research and factory automation), a field where the synergies with the firm's original camera business are obvious. Mitarai made Sweden-based Axis Communications, the global leader in network cameras, a consolidated subsidiary in 2015. Coupled with the 2014 acquisition of Denmark-based Milestone Systems, the frontrunner in video management software, this gave Canon an unbeatable combination of hardware, software, and analytics—and a worldwide sales network that propelled it to instant global leadership in a fast-growing industry.

The move into network cameras was prompted by Mitarai's insight that, with the world's population growing fast and societies becoming ever more complex, people felt an increasing need for safety and security in their everyday lives. It was this same insight that prompted his largest purchase ever, the 2016 acquisition of Toshiba Medical Systems Corporation (now Canon Medical Systems Corporation) for \$5.47 billion (¥666.5 billion). Canon had been active in the health care industry since the company's founding in the 1930s, building a modest presence in digital radiography and ophthalmic diagnostic equipment. "We had always been drawn to the health care field, but we neither invested nor had good enough technology to become a serious player," says Mitarai. Toshiba was No. 4 globally in diagnostic

**"BY 2020,
OUR BUSINESS
PORTFOLIO
WILL HAVE
CHANGED
ENORMOUSLY."**

A new MRI system manufactured by Canon Medical Systems.



Canon and Océ are working together to drive the digitization of printing.



medical systems, with particular strengths in X-ray, CT (computed tomography), MRI (magnetic resonance imaging), and diagnostic ultrasound devices. The acquisition transformed Canon into a global contender overnight.

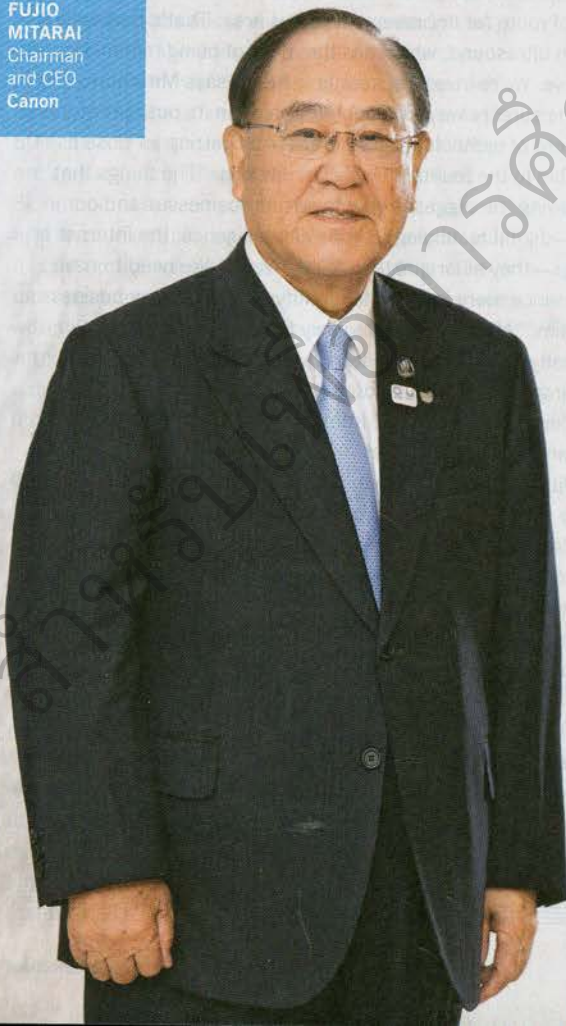
The last of the four new businesses in Canon's portfolio was, Mitarai admits, more of a happy accident than anything else. In 2007, the company acquired Tokki Corporation (now Canon Tokki Corporation), a Japanese company specializing in the development, production and sale of the vacuum-evaporation equipment used to manufacture organic light-emitting diode (OLED) panels. "We acquired Tokki because we wanted to change the screens on our cameras from liquid crystal displays to OLED. LCD screens can be hard to see in bright daylight, whereas OLED panels, which generate

their own light, are visible under any conditions," Mitarai explains. "But before we even got around to using OLED for our own devices, the smartphone boom took off."

The outlook for Canon Tokki remains extremely positive. With OLED panels starting to be used in televisions, Mitarai sees another major market coming into view. "We are ramping up our production capabilities," he says bullishly. "Canon Tokki is one of the few companies in the world that makes the equipment for this specific application."

Thanks to this flurry of acquisitions, Mitarai finally had his full portfolio of new businesses—or "growth engines" as he likes to call them—in place for fiscal year 2017. The resulting numbers speak for themselves. While Canon's existing businesses are growing at around 6%, the company's four new businesses—commercial printing, network cameras, health care, and industrial equipment—grew at a torrid pace of 105% in 2017. They currently account for 24% of Canon's overall net sales of \$36.1 billion (¥4.08 trillion). By 2020, the last year of Phase V in Canon's Excellent Global Corporation Plan, Mitarai is hoping to lift this share to 30%, even while raising annual sales almost 20% to a lofty ¥5 trillion.

FUJIO MITARAI
Chairman
and CEO
Canon



A TALE OF TWO STRATEGIES

How will Mitarai achieve these ambitious targets? The plan is to maximize the profitability of Canon's mature camera and copier businesses and use the cash they generate to invest further in new growth businesses.

In the mature businesses, higher profitability can be achieved by reducing costs on the one hand while producing higher-value-added products on the other, resulting in a better cost-to-sales ratio. Better procurement processes, the automation of production, and the placement of factories close to the markets they serve can all help drive costs down. As for creating higher-value-added products, Mitarai points out that even in mature markets, technology continues to evolve, meaning that new products with innovative functions still command a premium. For example, with interchangeable-lens cameras, a shift is underway from DSLR (digital single-lens reflex) cameras to mirrorless cameras,



An Axis network camera system in use at Malmö Central Station in Sweden

which are often smaller and lighter. "Mirrorless cameras are providing us with growth momentum," says Mitarai.

Canon is also gaining ground by focusing on areas where smartphone cameras are simply unable to compete. In compact cameras, that might mean the capability to take pictures of stars and planets in the night sky. With DSLR cameras, "It's all about integrated systems—offering the full range of equipment for different shooting needs, from journalism to art photography, delivering superior image quality and then providing the systems for transmitting those images," Mitarai says. In an overall mature market, these are the pockets of vigorous growth.

Systems play a similarly key role in the world of copiers. According to Mitarai, Canon's copiers are now far more than the name "copier" suggests. In fact, they are network-enabled devices that offer a host of functions beyond just copying and printing. "These are the sorts of solutions we need to provide: systems that meet the diverse needs of different organizations. It's no longer just about providing hardware, software capability is equally crucial," Mitarai says.

LONG-SIGHTED ACQUISITIONS

As Mitarai points out, software is also vital to Canon's new growth businesses. In the network camera field, for example, Canon possesses facial recognition technology capable of identifying an individual in the dark; software that can count crowds at a rate of 10,000 people in less than five seconds and software that, used in conjunction with an ultra-high-

resolution image sensor and optical technologies, can identify the tail livery on a flying airplane at 18 kilometers. "Software development is where the real competition is taking place," Mitarai reiterates.

It was precisely to boost these all-important software capabilities that Canon acquired Israeli company BriefCam Ltd. in July of this year. BriefCam's video content analysis software synopsis video, making it possible to review hours of footage in a matter of minutes. Users can then search through the synopsis video using such filters as size, speed, direction, and color to find precisely what they are looking for. "We are poised to make further big investments in the network camera business," says Mitarai. "Our aim is to build a broad presence, from law enforcement to market research."

Of course, in addition to generating cash for acquisitions, Canon's existing businesses also provide a deep reservoir of knowledge and know-how in optical and sensor technologies that can be profitably applied to the businesses it acquires, creating a virtuous circle. Medical devices are a case in point. Here, Canon is leveraging its image-processing technology to make images produced

by diagnostic equipment clearer and more readable. "There's a lot of room for improvement in this area. That's particularly true in ultrasound, which has the merit of being minimally invasive. We're investing heavily in R&D," says Mitarai.

One surefire way for Canon to maintain its position at the forefront of technological progress is by getting as close as possible to the fountainhead of innovation. "The things that are having the biggest impacts on our businesses and our lives—digital technology, artificial intelligence, the Internet of Things—they all originate in Silicon Valley. We need to have a presence there in order to identify promising new business domains," Mitarai says. Precisely for that reason, Canon is currently expanding its research division in San Jose and building a range of collaborative and joint R&D agreements with top U.S. universities, from Stanford on the West Coast to Harvard on the East Coast.

With its four new growth engines in place and Mitarai ready to make further acquisitions under the right conditions, the Canon of today continues to evolve. Public perceptions of the company, however, still lag reality. Mitarai, of course, has a strategy to bring them into alignment: "Our new businesses like network cameras and commercial printing still have an obvious link to Canon as it used to be. Going forward, we plan to invest more in building our health care brand. In that way, we can show the world that Canon is now about much more than cameras and printers, and actually covers a far broader business domain. With our new portfolio firmly established, our image will change." ●

JAPAN | GLOBALIZATION'S HUMAN FACE

CONTINUED FROM PAGE S3

online promotion, and e-commerce for a modest monthly membership fee.

CHALLENGES, VIRTUAL AND PHYSICAL

The fact that businesses need such support points to Japan's occasionally uneasy relationship with digital technology. "In Internet terms, Japan lags a long way behind," says Tokyo Cheapo's Kirkland, who partners with a variety of companies, including hotels and Wi-Fi rental services, and sees the difference between Japanese firms and their global counterparts up close. "It's behind in the quality of the content and the usability of websites."

But the people in charge of tourism promotion are now fully aware of the importance of digital marketing. JNTO, for example, is looking to put to use the data it collects via its websites and smartphone apps. Thanks to Japan's new departure levy on travelers, the government will have more funds for tourism promotion from next year. Beefing up its analytics and data capabilities is JNTO's top priority. "Many people use our website and app. Now we want to keep track of what they search for, where they actually go, and then target them with tailored suggestions of where to go next," Seino says.

The accommodations sector of Japan's tourist industry also has some catching up to do. While in major cities Western-style hotels are bursting at the seams with 80%-plus occupancy rates, with old-style Japanese inns, or *ryokan*, that figure is just 60%, falling to a mere 30% in some regions. Why are *ryokan* failing to appeal to inbound tourists? Seino points to their sometimes being old-fashioned and uncomfortable, particularly the bathroom facilities. In addition, rigid meal times and other standard customs can be off-putting. "These rules work with the Japanese, who are used to obeying, but not with Europeans. They want to go out at night, have a drink," says Asienspiegel's Knüsel. "But there is huge potential for *ryokan*, if they adapt."

INCREASING ACCESSIBILITY

Adapting is precisely what hotel management company Hoshino Resorts is doing. Through its KAI flagship brand, it has assembled a portfolio of 35 inns with hot springs that offer a stylish, modern take on a traditional Japanese concept. Indeed, with its different offerings, the company is actively shifting Japan's hospitality industry away from the old one-size-fits-all approach that characterized the postwar period, instead targeting numerous and diverse consumer groups. For instance, OMO, its latest hotel brand, offers funky, affordable city accommodation complete with "OMO Rangers," staff who accompany guests to local shops and restaurants that might otherwise be intimidating to

non-Japanese speakers.

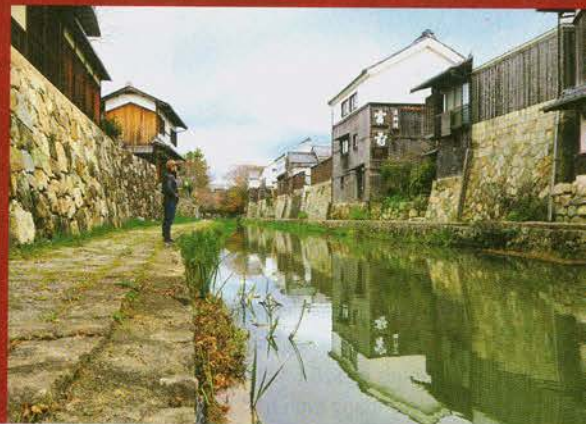
The commitment to making Japanese culture more readily accessible is crucial to the ongoing progress of Japan's tourism industry. At JNTO, Seino's personal hope for the next few years is, he says, that Japan's tourism "content" can be made even more attractive by opening up more sights, displaying them better, and providing easier-to-understand explanations.

Tokyo Cheapo's Kirkland takes the big-picture view. Because the tourism industry has to interface directly with overseas consumers who don't speak Japanese and are unused to Japanese customs, it stands on the bleeding edge of digitization and internationalization. As such, it is shining a bright light on some weaker areas of Japanese business, like English language skills and web design. Long-term, the tourism industry's experience could provide useful lessons for Japanese businesses when it comes to building bridges with the rest of the world.

In the old days, when Japan was focused on building up a world-beating manufacturing economy, the mantra was *Oitsuke, oikose* ("Catch up, then overtake the West"). Now, as the country stakes out its position in the new experience economy, it is once again catching up very fast. ●

OMIHACHIMAN: ONE OF MANY OFF-THE-BEATEN-TRACK DESTINATIONS PROMOTED BY BLOGGER JAN KNÜSEL.

(BELOW) GUNTŪ OFFERS LUXURIOUS CRUISES ON JAPAN'S INLAND SEA.



GETTING BETTER ALL THE TIME

Providing new value to society by contributing to quality of life has proved to be a winning strategy for **Asahi Kasei**.

DOES IT MAKE SENSE FOR ONE COMPANY TO SUPPORT

the manufacture of saris in India while producing hydrogen in Germany, automobile plastics in Japan and medical devices in the United States? For diversified chemical manufacturer Asahi Kasei, this globe-crossing, genre-spanning approach is proving spectacularly effective. Why? Because everything the company does is based on a clear mission: to contribute to life and living for people around the world.

"For 96 years, our business has evolved in response to a changing world, but the same values underpin everything we do," says president Hideki Kobori, pointing to the company's participation in the United Nations Development Programme's Business Call to Action alliance as one recent example. A sustainable cotton linter-based fiber Asahi Kasei has made for about nine decades, Bemberg has become a popular material

for scarves and saris in India. Now the company is proactively working to raise the skill levels of local industries, whether loaning equipment free of charge to Indian producers, dispatching engineers to provide weaving and dyeing advice, or supporting fashion designers' educations. "We're contributing all along the value chain," says Kobori.

Asahi Kasei's engineers help Indian linter producers raise quality.

This idealism is quite compatible with delivering robust numbers. In the fiscal year that ended March 31, 2018, Asahi Kasei posted a net income of \$1.5 billion (¥170 billion) on revenues of \$18.5 billion (¥2.04 trillion), both record highs. The company even hit the final-year income targets of its current three-year management plan one year early, hiking its dividend by a generous 42%. Values aside, what else is driving this outperformance? Partly it's external factors like a growing global economy, stable exchange rates, and firm prices for petrochemicals. But the major factor is a relentless focus on reinforcing the high-value-added global businesses where Asahi Kasei enjoys a competitive edge.

CARS DRIVE GROWTH

Asahi Kasei operates in three sectors: Material (53% of revenues), Homes (31%) and Health Care (15%). In the Material

sector, Kobori sees a particularly promising market in automobiles. Asahi Kasei produces a range of auto-related products, including textiles for seats and fibers for airbags, synthetic rubber for tires, and reinforced engineering plastics for car parts.

With electrification and autonomous driving, automobiles are undergoing a double transformation. To gain maximum benefit from these changes, Asahi Kasei set up a specialized Automotive Marketing Department in 2016, followed by the 2017 unveiling of AKXY, a concept car that showcases 35 items made with Asahi Kasei's auto-related products and technologies, thereby making them much easier to market. "AKXY symbolizes our passion for the auto business," Kobori says. "Through private showings and trade shows, we're building stronger customer relationships with car manufacturers and suppliers."

AKXY showcases something else too: Asahi Kasei's commitment to creating entirely new businesses. Among its products and technologies, the car features a compact, ultra-responsive CO₂ sensor that measures in-vehicle air quality. "Looking

"THE SAME VALUES UNDERPIN EVERYTHING WE DO."

HIDEKI KOBORI
President
Asahi Kasei





The AKXY concept car.

forward, such CO₂ sensors have the potential to be used in homes, offices, and factories to provide more energy-efficient air-conditioning and a healthier environment," Kobori says of the modules that Asahi Kasei co-developed with Swedish subsidiary Senseair AB.

Even excluding battery separators, the company's auto-related business was already worth around \$1 billion in fiscal year 2015. Kobori's target is to triple that figure by 2025. Meanwhile, he plans to maintain the firm's No. 1 position in lithium-ion battery separators by expanding production capacity and raising safety and durability levels.

THE BEST OF HEALTH

Health Care is the smallest of Asahi Kasei's three business sectors. But it's also the one expected to grow the fastest, with Kobori aiming to more than double fiscal year 2017's \$2.7 billion (¥296.3 billion) in revenue by 2025.

The company's focus is on pharmaceuticals and acute

critical care. In pharmaceuticals, the plan is to become a global pharmaceutical powerhouse with strengths in orthopedics and critical care. It recently launched two orthopedics drugs in Japan. One of them, Reclast, an osteoporosis drug administered only once per year, is particularly patient-friendly. Still, with recent changes to Japan's drug pricing system having dealt domestic profitability a blow, Kobori is looking to the global market for growth.

Enter Recomodulin, a critical-care agent on sale in Japan since 2008, which is in phase III clinical testing in the United States. "Provided we get approval, Recomodulin could be a blockbuster, generating \$1 billion annually. We're studying the necessary sales infrastructure now," Kobori says.

Meanwhile, sales of Boston-based subsidiary and acute critical-care specialist ZOLL Medical continue to perform strongly, growing at 15% per year over the past 10 years, with unique products such as the LifeVest wearable defibrillator leading the way. LifeVest is currently available in the United States, Germany, France, and Japan. Says Kobori: "Now we want to build LifeVest into a truly global product."

For the three years between fiscal year 2016 and fiscal year 2018, Kobori set aside \$6.35 billion (¥700 billion) for investment and acquisitions. With more than half of that money still unspent, big moves could yet be in store this year. "Our 2025 targets are revenues of ¥3 trillion and an operating income of ¥280 billion," Kobori says. "The progress of the current plan has been very positive. I'm thinking about raising the targets of our next management plan." ●

TRANSITION OF POWER

Asahi Kasei wants to create "a society of clean environmental energy." Hideki Kobori discusses demonstration projects in Germany that use an alkaline water electrolysis system to convert power from renewable sources into "green" hydrogen.

Why Germany?

The Germans are phasing out nuclear power as part of their national policy of transitioning to low-carbon, environmentally friendly energy.

What are your technology's advantages?

Output from solar and wind is inherently volatile and tends to generate surplus energy. Converting that surplus into hydrogen is an efficient way to deal with it.

Where did your system originate?

It's derived from the widely used membrane-process chlor-alkali electrolysis systems we developed.

How big is the system?

Our system is scalable to a world-leading 10 megawatts per unit.



Green hydrogen demonstration plant using Asahi Kasei's system in Germany.

POWER WITH PURPOSE

NGK Insulators has diversified from the power sector into auto ceramics, electronics components, and semiconductor manufacturing equipment. The common factor? Answering the world's needs.

TAKU OSHIMA
President
NGK
Insulators

WHAT ARE THE BIGGEST TRENDS SHAPING THE WORLD

economy right now? Things like renewable energy, artificial intelligence, the Internet of Things, urban pollution, and the emergence of a new consumer class in Asia would feature prominently on any list. And it's precisely because Japan-based ceramics manufacturer NGK Insulators addresses so many of these hot-button issues that the company logged record sales of US\$4.26 billion (¥451.1 billion) in fiscal year 2017—and expects both sales and operating income to rise another 10% this year.

More than 50% of NGK's revenue comes from automotive-related ceramics that clean exhaust and cut pollution. "We make particulate filters for gasoline and diesel vehicles, ceramics for catalytic converters, and sensors that detect nitrogen oxides," explains president Taku Oshima.

Oshima has reasons to be bullish on the sector: First, annual global car sales of 90 million are poised to rise as high as 110 million or 120 million units over the next decade, as more of Asia's new middle class takes to the roads; second, Asian nations are following Europe in adopting more stringent exhaust regulations; third, hybrid vehicles (which have conventional engines) are a realistic alternative to electric vehicles, which continue to face battery-related challenges. NGK's sales are increasing in line with overall automobile demand, and the company is investing US\$1.12 billion (¥119 billion) to expand its worldwide manufacturing capacity. The company is also making strategic preparations for electrification by developing technologies like ceramic-based solid-state batteries for EVs and hybrids.

INTERNET OF EVERYTHING

Technological trends are driving growth in NGK's semiconductor production equipment (SPE) business. Here Oshima sees two major tailwinds. "You have 3D memory chips that can store large amounts of data and increased communications speeds able to transmit it faster," he says. "In consequence, 3D memory chips are being used in more and more applications, many of which only existed as concepts before." He cites self-driving cars, which collect and analyze vast amounts of image data in real time, as an example.



THIS DELUGE OF NEW PRODUCTS REFLECTS A COMMITMENT TO INNOVATION.

This advance in technology is spurring semiconductor demand. Like the proverbial man who made a fortune selling shovels during the Gold Rush, NGK makes susceptors—which hold silicon wafers in place during the manufacturing of semiconductors—and precision components and assemblies.

Making semiconductors is not easy. The susceptors must be perfectly flat, maintain an even temperature when heated, and be strong enough to resist corrosive plasma gases. "We're the only company with the technology to satisfy the industry's stringent requirements," says Oshima. "We can barely keep up with demand and are currently investing US\$377 million (¥40 billion) to increase our manufacturing capacity in Japan and the U.S." In fact, the SPE business is performing so well that Oshima has just combined it with NGK's industrial processes segment to create a new process

technology business. Sales are expected to increase 16% this year.

It's a similar story of progress in the company's electronics business, where NGK is releasing a raft of new products targeting mobile communications and data storage. Last year, NGK started selling bonded wafers for surface acoustic wave (SAW) filters, which select the desired frequencies in mobile devices. With buoyant demand for mobile devices, sales of the wafers are to reach US\$94 million (¥10 billion) within three years. The company also began selling ultraprecise piezoceramic actuators for hard-disk drives. (The actuator moves the head arm, which reads and writes on the hard disks.) While consumers are switching to solid-state drives (SSDs), hard-disk drives remain popular with data centers because of their cost advantage. NGK expects sales to rise 20% per year.

ACHIEVING THE IMPOSSIBLE

This deluge of new products reflects NGK's long-standing commitment to innovation. In fiscal year 2017, the company achieved its target of generating 30% of total sales from new products—a level it intends to maintain by spending the equivalent of around 5% of sales on R&D.

NGK's original power business, which now accounts for 12% of total sales, is still going strong after 99 years. Ranked No. 1 globally, it produces high-spec insulators that it supplies to more than 100 countries worldwide. In this sector too the company continues to push the innovation envelope, with large-capacity sodium-sulfur (NaS) batteries—sold under the NAS® trademark—used to store and stabilize energy output from renewable sources.



NGK's semiconductor production equipment is in great demand.

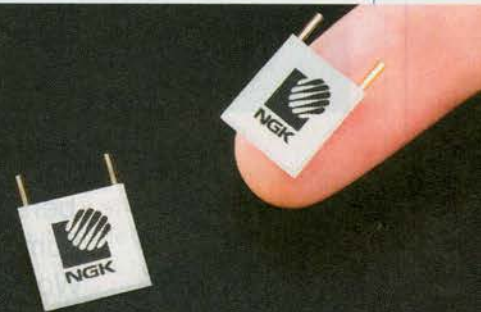
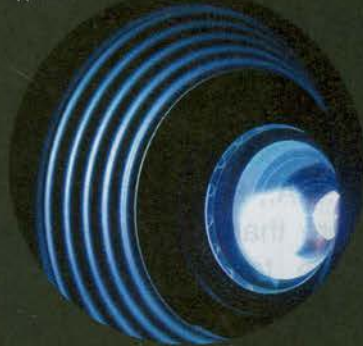
NAS batteries are already in use in some 200 locations worldwide; now Oshima sees the Middle East as a key market. Financially and environmentally, it makes sense for Middle Eastern nations to generate their electricity from the sun rather than oil. But since solar power can be generated only in the daytime, it has to be stored for night-time use. NGK's NAS batteries offer the perfect solution—as proven by the success of a 108MW installation in the searing heat of Abu Dhabi. The company is in talks with several countries for business to launch in the 2020s.

"People told us that it would be impossible to develop large-capacity batteries, but we pressed on—and we succeeded. That's what we do," Oshima says. "We look at the world, see what products are needed and develop solutions, even if it takes time to do so. We use ceramics technology to turn the impossible into the possible." ●

NGK INTENDS TO GENERATE 30% OF SALES FROM NEW PRODUCTS. HERE'S A SNAPSHOT OF TWO CLOSE-TO-MARKET INNOVATIONS. >

▼ **MERCURY-FREE LIGHT**

The United Nations' Minamata Convention on Mercury aims to reduce mercury pollution. To this end, business projectors with mercury lamps are being phased out. NGK is developing a substitute technology based on ultrahigh luminance lasers using gallium nitride (GaN) wafers. Automobile headlights are another application.



▲ **FINGERPRINT VERIFICATION**

Of the various batteries NGK has in development, a chip-type rechargeable battery is first in line for commercialization. Merits include a thickness of just 0.4 millimeters, resistance to heat and to bending, high energy density and direct solderability. It will be used to power fingerprint authentication in credit cards and Internet of Things wireless modules for connected devices.

Great taste to your table



Everything we do at Kikkoman is grounded in a history of more than 300 years of brewing soy sauce to a traditional recipe, using only the finest ingredients. As we grew into a global brand, we developed an open stance and a clear awareness of our social responsibilities, a philosophy that has helped us become known for establishing standards of good taste.

Everyday we work to realize this philosophy around the world, through contributions to local communities, environmental protection and cultural exchanges. These include our membership in the UN Global Compact to support human rights, labor and the environment, and the World Business Council for Sustainable Development. The success of this philosophy is appreciated around the world for its original taste and contribution to the enjoyment of good food. Production facilities in Japan, the U.S.A., Europe and Asia help support sales in more than 100 countries, and spread our message to every person who appreciates the special qualities of our products.



Kikkoman Corporation

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<https://www.kikkoman.com>

kikkoman[®]
seasoning your life

A SEASONED WORLDVIEW

Soy sauce maker **Kikkoman** shows that globalization can be a win-win, as long as companies strive to be good corporate citizens.

YUZABURO MOGI, HONORARY CEO AND CHAIRMAN OF

the board of Kikkoman, is making multiple trips to the U.S. this year. In June he was in Walworth, Wis., to celebrate the 45th anniversary of Kikkoman's first-ever overseas plant there. In November, he will be in Folsom, Calif., to mark 20 years of operations for the company's second U.S. plant.

It was Mogi who spearheaded the building of the Walworth plant—and thereby the internationalization of Kikkoman. The company now generates about 60% of sales and 70% of operating income outside Japan, and an estimated 60% of American families use soy sauce in some form. Should we therefore expect Kikkoman's U.S. sales to flatten out soon? "No," Mogi ripostes. "My take on that number is that there are still plenty of people yet to try our soy sauce!"

It should be no surprise, then, that Mogi is a keen advocate for globalization and free trade. "Domestic problems can prompt individual countries to turn against free trade," he says. "However, in the long run, world leaders have to choose free trade. Free trade is the mother of sustainable growth."

Mogi's vision of globalization is a benign one. When Kikkoman sets up factories overseas (it now has seven), it deliberately plants roots in the community. "We always try to be a good corporate citizen," explains Mogi. "We participate in the local economy by sourcing everything we can locally, by hiring local workers, and by making donations to local institutions." At the global level, Kikkoman's corporate citizenship involves promoting healthy eating.

Mogi's achievements have won him elder-statesman status in Japan's business world. So how does he rate the efforts of Prime Minister Shinzo Abe to reinvigorate the economy? As Mogi sees it, Abe has had some success in the areas of monetary and fiscal policy but needs to do more when it comes to structural reform. "The government has tried to promote deregulation, but they've not gone far enough," says Mogi. "Structural reform can cause pain, so some people will inevitably oppose it. The government needs to show strong leadership."

As things stand, Mogi sees Japan's economy continuing to grow, but at a subdued rate. Since he is also chairman of the Japan Productivity Center, he has clear ideas about how

YUZABURO MOGI
Honorary CEO
and Chairman
of the Board
Kikkoman



"THERE ARE STILL PLENTY OF PEOPLE YET TO TRY OUR SOY SAUCE."

Japan could boost its performance, particularly in the service industry, where productivity lags. The country should tackle both components of the productivity equation, he argues, using IT to boost labor efficiency while also raising prices. "Service is very good in Japan, but that's simply not reflected in prices," he says.

Mogi's no-nonsense attitude extends to his views on the digital economy, where he sees a tendency for people to think that the rules don't apply to them. "The basic philosophy for digital business and real-world business is the same," he says. "We all must provide products and services that meet people's needs. We must contribute to society both through our business activities and through something extra. We must all strive to be good corporate citizens." ●

A NEW TOURISM CHAMPION

T

oyo University's Department of International Tourism Management was established in the run-up to the 1964

Tokyo Olympics. Now, as Tokyo prepares to host the games for a second time, professor **Noriko Yagasaki** talks about Japan's ongoing transformation into a tourism superpower.

Is tourism a major industry for Japan?

Tourism is a large and important industry, yes. Inbound tourism is classified as an export industry because it brings in foreign currency. In order, Japan's biggest exports are automobiles, then chemical products; inbound tourist spending comes in at third place alongside semiconductors and auto parts. Of course, one advantage tourism has over

manufacturing is that there's no risk of hollowing out. Factories can always be moved offshore, but Mount Fuji is staying right where it is! Despite the scale of the tourism industry, its importance was only recognized quite recently.

What are the country's strengths and weaknesses?

Japan's greatest strength is the sheer variety of its attractions. We have oceans, mountains, wonderful natural scenery, a good climate, seasonal variety, cuisine, and culture. Such an extensive range of tourism resources is quite unusual. We truly have something for everyone.

Japan's weakness is not being fully aware of the splendid resources it has. Japanese sights tend to be set up to address the needs of Japanese

tourists, which means group tours on prearranged packages. The market for domestic tourists is worth ¥21.1 trillion, versus just ¥4.4 trillion for inbound tourists. Because the domestic market is so large and well-established, it's only recently that travel agencies and communities have woken up to the needs of inbound travelers.

Can you give us a snapshot of the tourists visiting Japan and how they differ?

Around 85% of the visitors to Japan come from Asia. Most tourists come from nearby countries. That's a basic rule in the industry, and it applies worldwide. In countries like France and the U.K., however, the percentage of visitors from nearby countries is closer to 60%. Japan's percentage is, thus,

CONTINUED ON PAGE S16



JAPAN NEEDS TO ATTRACT MORE TRAVELERS FROM THE U.S., EUROPE, AND AUSTRALIA, SAYS PROFESSOR NORIKO YAGASAKI.

JAPAN'S DIGITAL SHOWCASE

Toppan hopes that its digital archiving and display technologies will play a major role in transforming Japan into a leader in global tourism.

TOPPAN PRINTING STARTED AS A SPIN-OFF FROM

Japan's Ministry of Finance in 1900. Even now, 118 years later, the company still has links to government. As Japan seeks to attract 60 million visitors by 2030 and refashion itself into a so-called "tourism-oriented nation," Toppan is actively supporting the national strategy. "We're working with branches of government from the Cabinet Office to the Agency for Cultural Affairs and the Japan Tourism Agency," says Toppan president and representative director Shingo Kaneko.

That commitment can be seen at NIPPON GALLERY TABIDO MARUNOUCHI, a 2,000-square-meter central Tokyo exhibition space Toppan recently opened to showcase digital technologies that help Japan communicate its tourism resources more effectively. The target audience? Government agencies, local governments, and cultural institutions. "Japan has more than 2,000 years of history and a rich portfolio of cultural assets, but we're late starters when it comes to digital archiving and electronic museums," Kaneko says.

Perhaps the most spectacular of the technologies on show is virtual reality (VR). Toppan has created more than 100 VR titles and installed VR systems in 23 locations worldwide since 1997. The core technologies for VR and the digital archiving of cultural assets are the result of joint research with the University of Tokyo and other educational institutions. Recent VR titles include the Yomeimon Gate of Nikko's Toshogu Shrine (a World Heritage site) and a re-creation of Kyushu's Kumamoto Castle prior to 19th-century battle damage. VR makes it possible to not only "see" things that no longer exist but also to recreate things that cannot normally be seen, because they are high up or deep underground. The technology can help with the digitization of Japan's cultural assets, making them more widely viewable—and giving tourists a reason to venture off the beaten track. There's a commercial payoff, too: Kumamoto Castle's 2 million annual visitors used to just make a quick circuit and leave, producing little local economic benefit. Now a combined VR theater and tourist center make people stay longer—and spend more.

This tallies perfectly with the government's aim of using tourism as a catalyst to drive regional economic revival. "I recently hosted representatives from over 40 of Japan's pre-



SHINGO KANEKO
President and
Representative
Director
Toppan

TOPPAN IS A GROWTH-ORIENTED COMPANY IN A TOURISM-ORIENTED NATION.

ferences at the NIPPON GALLERY. We got a veritable avalanche of inquiries," Kaneko says.

MICE (meetings, incentives, conferencing, exhibitions) is another focus of the government's tourism

strategy. Subsidiary Toppan Travel Service is active in the MICE business, while Toppan's own marketing department was recently commissioned by the Tokyo Metropolitan Government to approach appealing venues about hosting MICE events. "Regional governments are looking at MICE seriously too. We can combine this trend with the digitizing of cultural assets to communicate Japan's attractions better," says Kaneko.

Outside Japan, meanwhile, Toppan is increasing its presence in fast-growing sectors. A flurry of capital tie-ups in Thailand, Indonesia, and India have expanded the company's footprint in flexible packaging in emerging markets, while an acquisition in Spain has provided Toppan with its first decor-materials factory in Europe. And after a 2016 takeover in Taiwan, Toppan is expanding the production of small, high-performance LCD panels for car displays, industrial equipment, and mobile payment terminals, for which demand is rising. Conclusion? Toppan is a growth-oriented company in a tourism-oriented nation. ●

A NEW TOURISM CHAMPION

CONTINUED FROM PAGE S14

very high. In part, that's because we have China on our doorstep. China's population of overseas travelers is 120 million people—nearly equal to the entire population of Japan! Korea, Taiwan, Hong Kong, and the USA round out the top five.

The biggest determinant of tourist behavior is not nationality. It's whether you're a first-time visitor or a repeat visitor. First-timers always take the so-called Golden Route from Tokyo to Kyoto and Osaka. You get the capital city, an ancient city, and a merchant city all linked by the bullet train, with Mount Fuji thrown in along the way for good measure. It's a global must-see by any standards. Repeat visitors, however, tend to go more off the beaten track and visit the regions.

Japan wants to attract 40 million visitors by 2020 and get them to spend more. Are these realistic targets?

With South Korea, we already get 7 million annual visitors from a population of just 51 million. With Taiwan, it's 4.5 million visitors from a population of 24 million. Any big increase in numbers will thus have to come from

more populous nations like China. Thai tourist numbers are also rising based on a population of 68 million. Indonesia has a large population—260 million people—but we need to make a special effort to accommodate travelers from there because of their religion.

The government's spending targets will be harder to achieve. First, Japan should try to increase the number of travelers from the U.S., Europe, and Australia, because they stay for longer and spend more. Second, we need to raise the prices of travel products and services.

Japan is looking into setting up integrated resorts. What exactly are they?

Integrated resorts are multifaceted resorts that combine convention facilities, entertainment, and hotels with casinos. They're another tool we can add to our tourism toolbox. Singapore and Macau are successful examples overseas. Because both places have rather limited tourism resources, they created these "artificial" resorts in a bid to boost their appeal. In Japan's case, we have many other attractions, so we don't need integrated resorts quite as much. What we can do is situate these resorts in

places that are not that well-endowed with tourism resources. I'm thinking of places like Hokkaido, Osaka, Okinawa, and Yokohama.

On a technical level, has Japan succeeded in building itself as a destination brand?

What are the components of Japan's national brand? I'd say they're things like economic power, technological prowess, trains that run on time, clean and tidy cities, and friendly people. To turn that national brand into a destination brand, we need to add on top the idea of Japan being a fun country to visit.

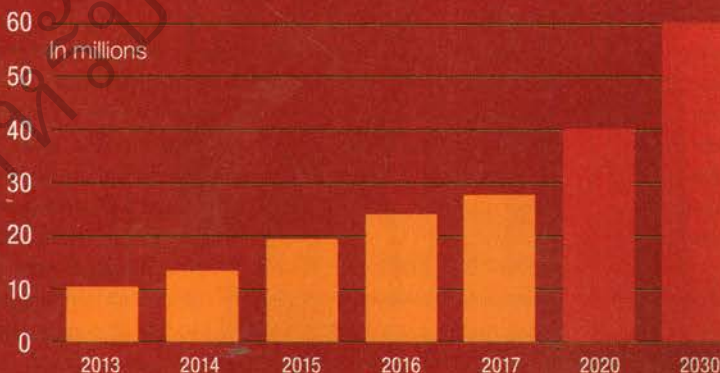
To build a strong destination brand, you need an internal brand. Why did the London Olympics succeed so well from a marketing perspective? Because its campaign was based around a single word: the "great" from Great Britain. Japan tried to do that but couldn't get consensus from the representatives of all the different tourism resources. As a result, Japan skipped the branding stage and went straight to promotion.

Did Japan learn anything else from the U.K. about how to leverage the Olympics?

From the moment Tokyo was picked as the 2020 host city by the International Olympic Committee, great efforts were made to study the London example. The Japan National Tourist Agency is doing a three-year campaign starting in 2018 and leading up to the Olympics. The Olympics is a mega event, but the number of overseas visitors actually goes down. The demand it creates is discontinuous. Right after the games end, it's important to make a big push to get regular travelers to come back. That's what the U.K. did. If you look at how the U.K.'s marketing spending breaks down, they spent 20% of their budget in the run-up to the games, 20% during the games, and 60% after the games. ●

AIMING FOR THE SUN

Japan inbound visitors under Prime Minister Abe



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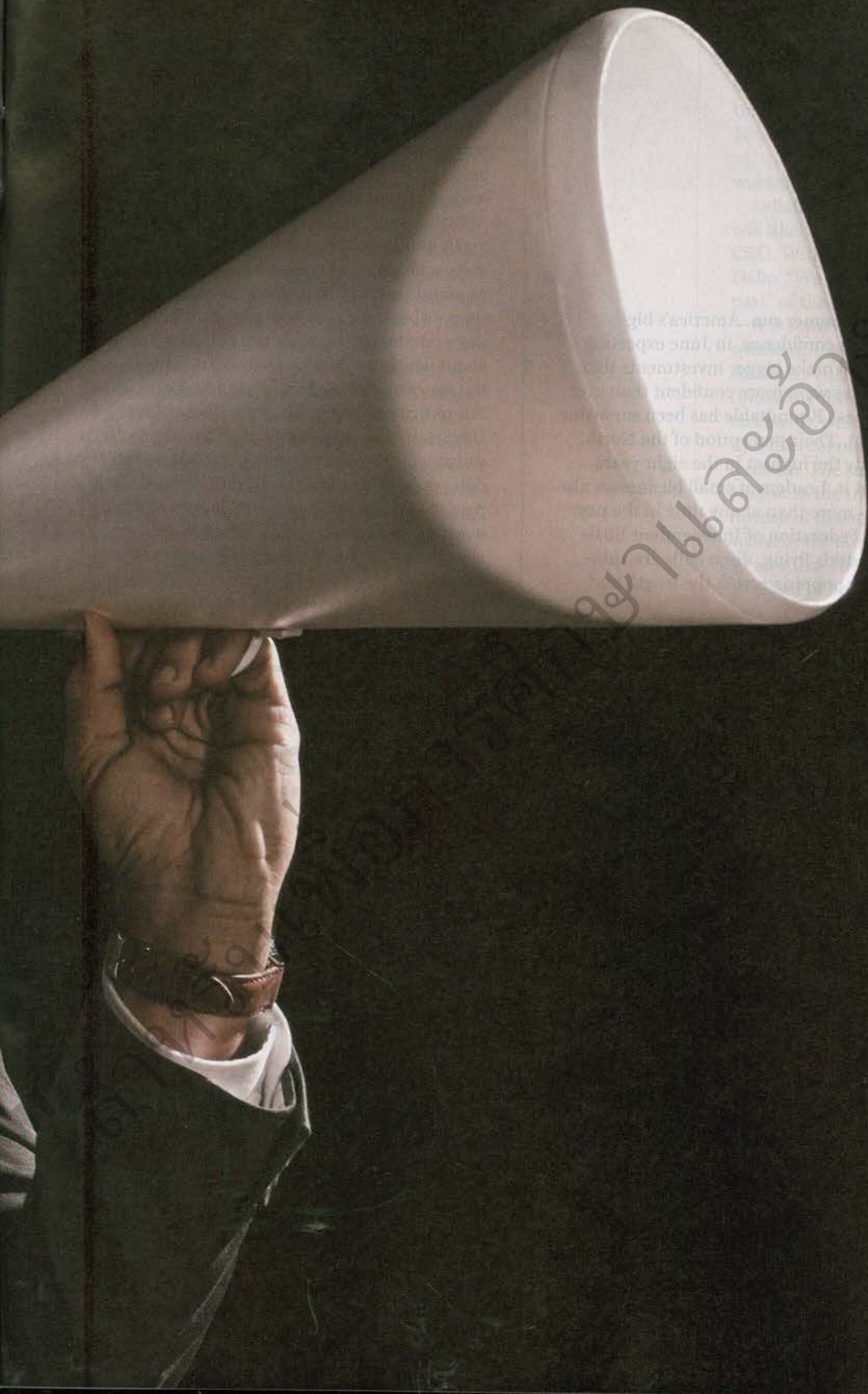


INVESTMENT
INSIGHTS

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THE
END
IS
NEAR





THE END IS NEAR

**THE
ECONOMY
WILL
SLOW.**



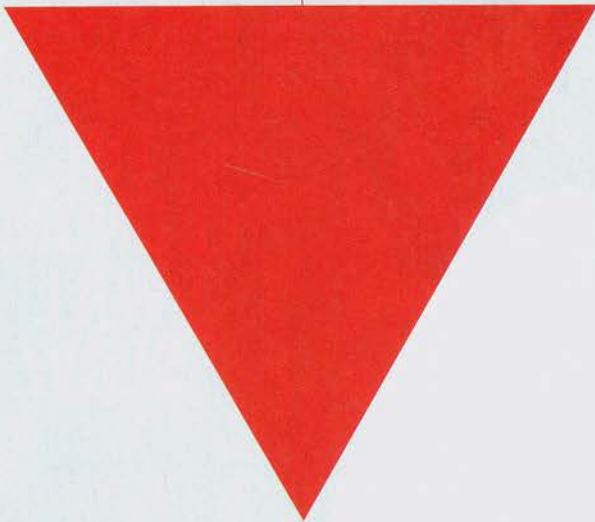
**THE
BULL
MARKET
WILL
EXPIRE.**



**HERE'S
WHY AND
WHAT
YOU NEED
TO DO
ABOUT IT.**

BY
**GEOFF
COLVIN**

▲ PHOTOGRAPHS BY ART STREIBER



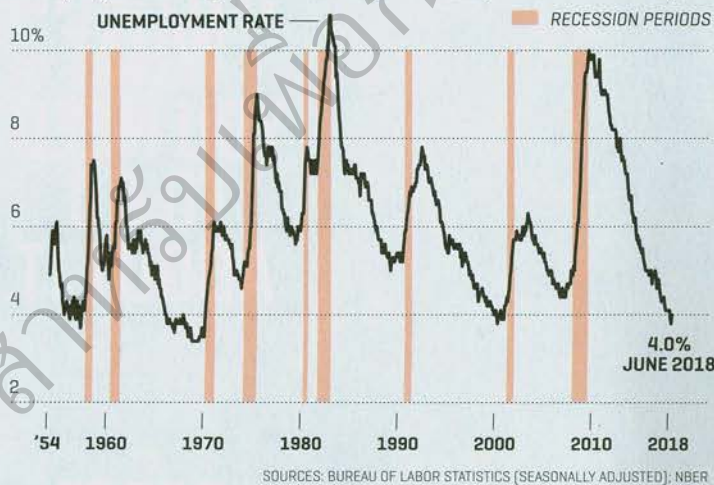
THE OPTIMISM IS BEAMING like the summer sun. America's big-company CEOs are bursting with confidence, in June expecting to take in even more revenue and make bigger investments than they foresaw in March, when they were more confident than ever before in the 15 years the Business Roundtable has been surveying them. CFOs are just as ebullient. Their perception of the North American economy was recently the highest in the eight years Deloitte had been asking about it. Leaders of small businesses also are brimming with optimism—more than at any time in the past 30 years, reports the National Federation of Independent Business. At least figuratively, confetti is flying, disco balls are spinning, and Champagne corks are popping across the length and breadth of American business.

It seems a shame to pull the plug on the dance music, so we won't, exactly. As of mid-July, forecasters were expecting the announcement of a knockout GDP growth number for the second quarter, and it wouldn't be surprising if the U.S. economy continued to grow impressively for at least a few quarters more. Unemployment is near historic lows, and better job prospects are drawing more workers back into the labor force. No wonder business leaders are confident.

Yet all these signs of economic strength mask fundamental realities that won't fade away and mustn't be ignored. The current economic expansion is much nearer its end than its beginning, as accumulating hints suggest—including the stagnating stock market, about which we'll say more in a bit. Already the concerns are pushing up long-term interest rates, which is bad for asset values. Uncertainty about the effects of a trade war is causing many companies to postpone action, dampening potential investment. Indeed, look past those disco balls and you'll see economic warning signs everywhere. A significant slowdown or even recession is coming sooner or later, and it's probably coming sooner than you think. It always does.

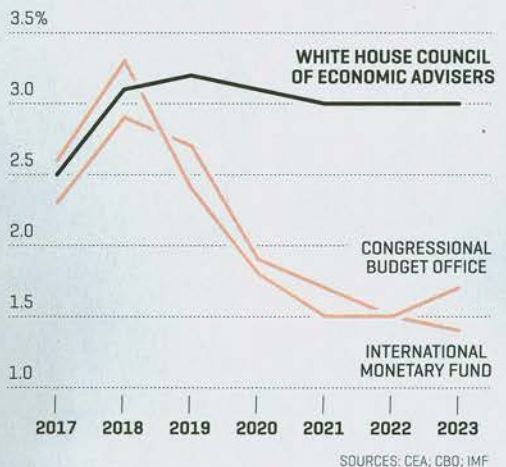
U.S. UNEMPLOYMENT

A trough in the unemployment rate has closely preceded every recession in the past 60 years. Of course, troughs can be identified only in retrospect, but history says further significant rate drops from today's lows seem unlikely.



U.S. ANNUAL REAL GDP GROWTH FORECASTS

Most forecasters expect only a temporary burst of growth from the tax cuts and spending increases. [White House economists are far more optimistic.]



A SEASONAL CHANGE IS COMING

▼ **LET'S START WITH THE OBVIOUS:** Economies follow cycles. Unlike with seasons or the moon or the ocean tides, the timing of the business cycle is never easy to predict. But at some point, economic activity reaches a temporal peak, then begins to contract until eventually it bottoms out and starts growing once more. A familiar sign that we're in the waning stage of the growing season, ironically, is that the economy overheats—think of it as an Indian summer: Companies push factories to produce more than their long-term sustainable output, pushing employees to work more overtime. Demand is so strong that inflation starts to increase, leading central bankers to raise interest rates, which causes asset values, including stock prices, to level off or fall. Ray Dalio, CEO of the world's largest hedge fund, Bridgewater Associates, writes, "That is why it is not unusual to see strong economies accompanied by falling stock and other asset prices."

All of that is happening now. The Congressional Budget Office finds that this year, the economy has begun overheating in just this

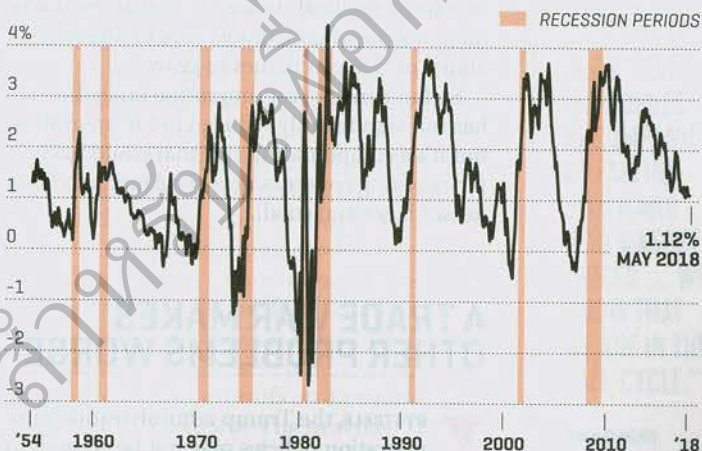
way, producing more than its sustainable long-term potential. The CBO predicted in May that as wages rose, more people who had left the labor force would come back to work, and, yes, that's just what happened in June. The labor market continues to be tight, with workers so confident that they're voluntarily quitting their jobs at the highest rate in 17 years. Meanwhile, employers will likely have to bid up wages in order to attract and keep good workers, hitting corporate earnings directly.

Inflation and interest rates are rising and will likely continue to do so, forecasts the CBO. With all those factors combining, says Dalio, "We know that we are in the 'late-cycle' part" of the business cycle.

It is somewhat remarkable, historically speaking, that it has taken this long to get here. America's current expansion is 110 months old (including the recovery period after the last recession), which makes it a marvel of longevity—the economic equivalent of a supercentenarian. The current growth run is the second longest in the 164 years for which the National Bureau of Economic Research has done the analysis; the average expansion has run a mere 39 months. The only one that outlasted this one lived to be 120 months old (1991–2001).

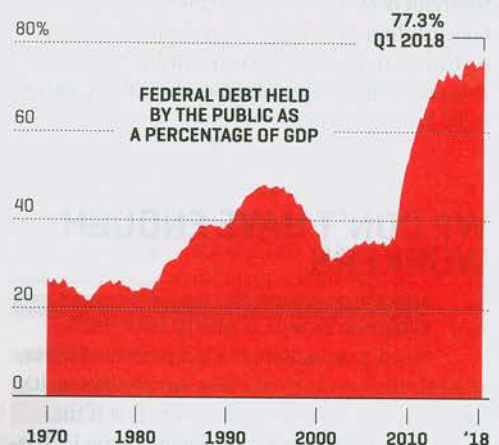
TREASURY YIELD CURVE

Yield curve "inversions," in which the yield on short-term Treasury securities exceeds the yield on long-term Treasuries, generally precede recessions. The curve is as close to inversion as it's been since just before the last recession.



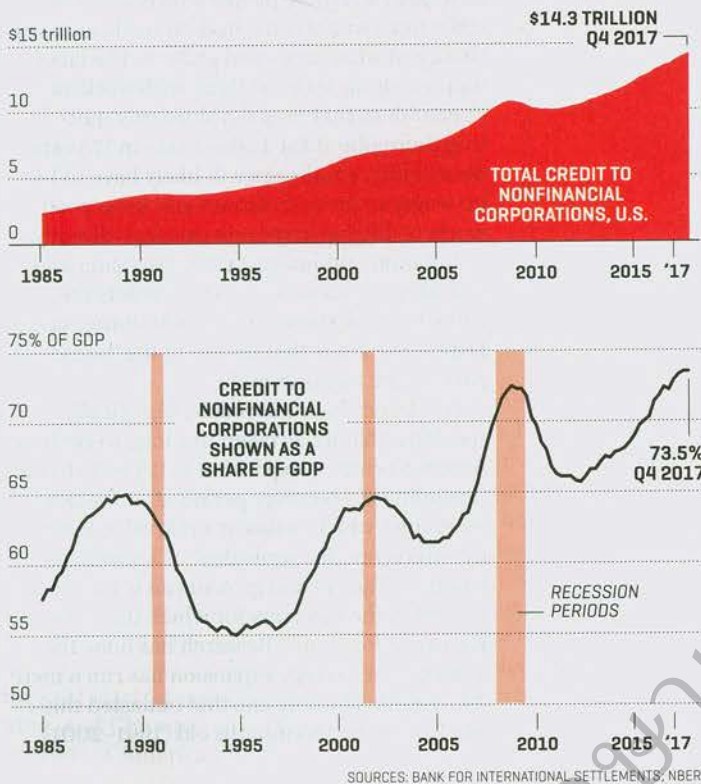
GROWTH OF FEDERAL DEBT

Debt held by the public is already larger as a percentage of GDP than at any time since World War II's aftermath. It's projected to reach 96% by 2027.



GROWTH OF CORPORATE DEBT

With interest rates low, companies have borrowed more as a percentage of GDP than ever before. As the falling rates of the past 35 years finally begin to reverse, companies may be forced to de-lever, reducing profits.



Old age isn't by necessity a death knell for an expansion—but then, there is something that tends to accompany it: When things start to break down, they break down en masse. Gerontologists call these tandem and often interlinked pathologies “comorbidities.” And in this economy, just under the skin, there seem to be plenty of them.

WE DON'T HAVE ENOUGH WORKERS

▼ **ECONOMIC OUTPUT** is pretty straightforward in concept: It's a function of labor, capital, and productivity. The simple fact is, it's hard for an economy to grow very fast if the labor force is growing very slowly, as the U.S. labor force is doing. In the 1970s, it increased at a

2.6% annual rate; now the rate is about 0.2%. One reason for this is that for many decades, Americans have been having fewer and fewer babies (the U.S. fertility rate dropped to a new all-time low last year). As the baby-boom generation continues to age and exit the workforce, the number of American-born workers will sharply decline. This past October, the Bureau of Labor Statistics projected that over the period of 2016 to 2026, there will be 11.5 million jobs created and a million fewer people in the workforce to fill them.

To counter that demographic drag, American companies have relied on an influx of people from outside the country. Immigrants accounted for 17.1% of the U.S. workforce in 2017, a percentage that has been rising for years. This critical labor force infusion, in fact, has been “as close to a free lunch as there is for America,” as Neel Kashkari, president of the Federal Reserve Bank of Minneapolis, put it earlier this year in an op-ed for the *Wall Street Journal*.

What's less widely understood is that there has actually been a global competition for this supplementary workforce. That's right: Other developed nations with declining birthrates likewise need new workers to help offset their armies of retirees—and America has been winning this battle, luring not just low-wage workers to fill jobs that native-born Americans aren't rushing to do but also scientists and entrepreneurs. (Witness the Silicon Valley billboards, bought by the government of America's northern neighbor, imploring techies with visa troubles to “Pivot to Canada.”) That's why President Trump's immigrant-hostile policy isn't just a political stance, it's also an economic one—and one that's almost sure to limit the ability of U.S. companies to grow.

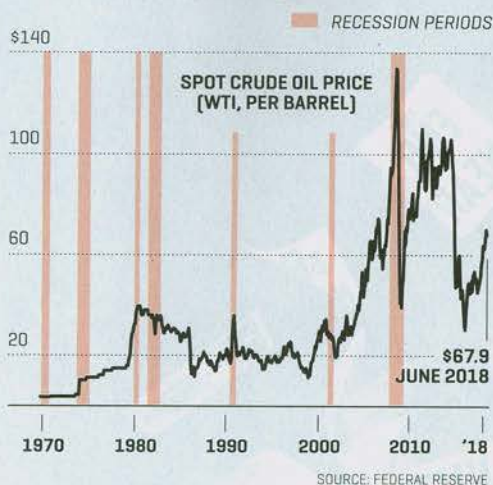
So far, America's immigration crackdown has not significantly reduced net in-migration, but it's a compounding risk that could have far-reaching consequences for American businesses large and small.

A TRADE WAR MAKES OTHER PROBLEMS WORSE

▼ **BY ITSELF**, the Trump administration's immigration policies may not be enough to stop growth in its tracks. But another federal

OIL PRICES BOUNCING BACK

Pricey oil is, on balance, good for the U.S., a major producer, but it will dent global growth, hurting the many U.S. companies with major operations abroad.



policy is making even more trouble at the border—this time with America's long-standing trading partners. Nascent trade wars with China, Europe, Canada, and Mexico—even if they don't last—have become yet another comorbidity for our aging expansion. U.S. companies that do most of their business abroad grew faster and were more profitable than the rest last year, just as in previous years, FactSet reports. Waging a trade war thus disproportionately hurts America's strongest engines of economic growth.

By the numbers, the trade-related skirmishes so far are insignificant in America's \$20 trillion-a-year economy. Even the tit-for-tat imposition of tariffs on \$34 billion of trade by the U.S. and China in early July will not, by itself, noticeably reduce GDP. Yet the effects could easily mushroom, in two intertwined ways.

First, even the biggest wars typically start with minor battles that spark an unstoppable cycle of escalation. In the current trade war, that appears to be underway. Hostilities with China began in March when President Trump imposed tariffs on aluminum and steel imports, only about \$2.7 billion of which come from Chinese producers. China responded with new tariffs on an equivalent amount of U.S. exports. The next day, Trump proposed tariffs on \$50 billion of Chinese imports; China proposed retaliatory tariffs the



"IT IS NOT UNUSUAL TO SEE STRONG ECONOMIES ACCOMPANIED BY FALLING STOCK AND OTHER ASSET PRICES ... WE KNOW THAT WE ARE IN THE 'LATE-CYCLE.'"

RAY DALIO
CEO, Bridgewater
Associates

day after that. On and on this went until the U.S. has now threatened tariffs on nearly all of America's \$500 billion of Chinese imports, and China has vowed to retaliate "at any cost."

As the stakes get higher, the rhetoric gets more bellicose. China is "threatening United States companies, workers, and farmers who have done nothing wrong," Trump said in June. China's Trade Ministry called the speech "blackmail." When the latest tariffs took effect in July, a Chinese Communist Party newspaper warned that "Washington has obviously underestimated the giant force that the world's opposition and China's retaliation can produce."

As public threats become more explicit, backing down from them appears ever less likely. That's how a piddling spat between the world's two largest economies, jointly the foundation of global economic growth, could become a historic trade war.

But the second way the current dispute could damage the U.S. economy doesn't even require that hostilities get worse. It requires only that people become less certain about where all this is headed. That effect—an "uncertainty shock," as Bank of America Merrill Lynch economist Michelle Meyer called it in a recent note—is happening already, and it worries the Fed. "Contacts in some Districts indicated that plans for capital spending had been scaled back or postponed as a result of uncertainty over trade policy," the Federal Open Market Committee reported from its June meeting, adding that "most participants"

GROWTH COMING FROM OUTSIDE THE U.S.

The trade war especially threatens America's most successful companies—those that get most of their sales from other countries.

EARNINGS GROWTH, Y-O-Y ENDING Q4 2017

COMPANIES WITH LESS THAN 50% OF SALES IN THE U.S.

12.0%

MORE THAN 50% OF SALES IN THE U.S.

17.4%

REVENUE GROWTH, Y-O-Y ENDING Q4 2017

COMPANIES WITH LESS THAN 50% OF SALES IN THE U.S.

7.0%

MORE THAN 50% OF SALES IN THE U.S.

10.5%

SOURCE: FACTSET



were concerned such uncertainty could depress “business sentiment”—confidence, that is—“and investment spending.”

Don’t expect much more clarity anytime soon. No one can predict where a large-scale trade war would lead. The last one occurred in the 1930s, when today’s intricate, light-speed global supply chains would have been nearly unfathomable. Which leaves business decision-makers only to wonder how all this shakes out.

Uncertainty prompts paralysis—and that’s no good for growth.

RIISING OIL PRICES WILL GUM UP GLOBAL GEARS

▼ **ANOTHER THREAT**—this one lingering just below the top news headlines—is the high price of oil. Recently around \$73 a barrel, it’s on balance a direct benefit to the U.S. now that America is a prodigious producer of

the fossil fuel—but expensive oil is also very likely to dent global growth, particularly since the strengthening dollar makes oil (wherever produced) yet more costly for other countries.

The Organization for Economic Cooperation and Development, an intergovernmental agency aimed at fostering economic growth worldwide, points to high oil prices as one of the main “risks that loom large.” And while a broad global slowdown may seem, to some, removed from U.S. interests, it would hurt America’s biggest companies and many of its smaller ones as well.

THE STIMULUS MAY PAD GROWTH FOR A WHILE...

▼ **THE SIGNS** of economic senescence and stress, as we noted, would seem to mirror the end of past business cycles. But there’s one big counterpoint, as we’ve all heard many

a time, and that's the recent federal tax cut and spending increases. That whammy of a stimulus, say some economists, will stave off any recession—and not only that, it will jump-start growth for years to come.

Indeed, the economy, by all traditional measures, seems to be growing smartly. After years of low-horsepower expansion, 2018 could be the best year for GDP growth in at least a decade. But don't count on the stimulus to keep stimulating.

Robert J. Gordon, the Northwestern University economist whose latest book is *The Rise and Fall of American Growth*, argues persuasively that America's "special century" from 1870 to 1970 represented "a singular interval of rapid growth that will not be repeated." Regular yearly GDP growth of 3%, once considered normal, is no longer sustainable, he says. Yet "old-fashioned fiscal stimulus" from tax cuts and a spending boost will produce a brief but powerful blast of growth—"3%-plus growth for at least a while" and "an average of 3% growth probably for the next four to six quarters." Then, he says, "the stimulus fades away." And it's back to the slow-growth new normal.

That, of course, assumes we'll get that short-term boost. We may not. The stimulus may not work as advertised for a number of reasons. First, fiscal fire-starters like tax cuts and spending increases are usually deployed at the bottom of the business cycle, not the top. They just don't add much oomph to an economy that's already growing, say researchers at the San Francisco Fed in a new study. The evidence suggests that "the true boost is likely to be well below" what many forecasters predict and could be "as small as zero."

Former Fed chairman Ben Bernanke foresees a more dramatic near future. The stimulus is arriving "at the very wrong moment," he said at a recent Washington policy discussion. (He declined an interview request.) "The economy is already at full employment." The stimulus "is going to hit the economy in a big way this year and next year, and then, in 2020, Wile E. Coyote is going to go off the cliff."

What's more, many companies are spending their tax bonus on share buybacks rather than investing it in operations. That may make shareholders happy for a while, but



ECONOMIC STIMULUS "IS GOING TO HIT THE ECONOMY IN A BIG WAY THIS YEAR AND NEXT YEAR, AND THEN, IN 2020, WILE E. COYOTE IS GOING TO GO OFF THE CLIFF."

BEN BERNANKE
Former Federal Reserve chairman

it's not going to stimulate economic growth over the long haul. Our take is that while the stimulus might extend this expansion, it's a lot like flooring the accelerator in a car. For a time, you go really fast, and it might even be thrilling—but pretty soon you run out of gas... or crash.

... AND THEN IT MAY MAKE THINGS WORSE

▼ **THE STIMULUS**, it's important to note, will have another effect as well: The accumulated federal deficit over the next decade will be \$1.6 trillion larger than it would have been without the recent tax cuts and spending increases, according to the CBO—and it will be larger still if various tax and spending provisions set to end are renewed by Congress, as seems highly likely. That's concerning for all kinds of reasons (as *Fortune's* Shawn Tully showed in "Deep in Debt," April 1, 2018). When the next recession inevitably arrives, Washington will be less able to apply the usual remedies of lower taxes and greater spending. If ballooning debt eventually spooks foreign investors into buying fewer Treasuries, rates will have to rise and federal interest payments will grow, expanding the debt even faster in a bad-news feedback loop.

MANY COMPANIES ARE ALREADY OVERLEVERAGED

▼ **WHILE MUCH** has been said about the growing menace of federal debt, trouble is brewing as well in a different and largely overlooked credit risk: corporate debt. Without many alarm bells sounding, the debt of nonfinancial companies has risen to 73.5% of GDP—an all-time high.

It hasn't been a problem so far because interest rates have been so low—which is a big reason companies borrowed so heavily in the first place. But as interest rates rise, the Goldilocks environment is darkening. Today's record corporate debt "would be a problem if rates are rising while the economy slows—a double whammy," says S&P Global

credit analyst Andrew Chang. That's exactly the scenario that is beginning to seem more likely. "People are aware of the risk but not quite behaving like an aware citizen," he tells *Fortune*. Investors in corporate bonds are getting nervous. Investment-grade corporate debt was the worst-performing category of debt investment in this year's first half.

Some debt holders try to comfort themselves by noting that U.S. corporations are sitting on nearly \$2 trillion of cash. But that reasoning faces two big holes. First, just 24 companies account for about half of that mammoth cash cache (led by Apple, with \$267 billion), yet they account for nowhere near half of America's corporate debt.

Second, corporate America's net debt—that is, debt minus cash—is still about 1.5 times Ebitda (earnings stripped away from interest, taxes, depreciation, and amortization). That would make it the highest debt-to-earnings ratio in the past 15 years. "Cash may be at an all-time high, but so is debt," says S&P Global's Chang, "and people aren't noticing the second part."

The situation is serious enough to grab the Fed's attention. Fed governor Lael Brainard, speaking in April, said, "Our scan of financial vulnerabilities suggests elevated risks in two areas: asset valuations and business leverage." Both risks involve corporate debt. Brainard noted that yields on corporate bonds are "low by historical comparison," meaning the bonds look awfully expensive. And business leverage, like that debt-to-earnings ratio, is "high relative to historical trends."

Got all that? Well, if not, maybe this comment from the Treasury's Office of Financial Research—the arm of the department that assesses U.S. financial stability—can bring home the message: "Nonfinancial business leverage ratios ... are flashing red on the heat map" of potential vulnerabilities.

Those trends trouble central bankers because all it takes is a single jolt, in some cases, to create a cascade of corporate havoc. As Brainard observed, "unexpected negative shocks to earnings in combination with increased interest rates" could hammer those bonds and the lenders who own them. If that happens, it won't just stress the bond market. The effects could ripple through the whole economy.

**WHEN THE
MARKETS AND
THE ECONOMY
INEVITABLY DO
TURN, IT WILL
BE, LIKE ALL
CHANGE, AN
OPPORTUNITY.**

RELIABLE INDICATORS ARE POINTING DOWN

▼ **FOCUSING ON DEBT** and its cost is wise because bond interest rates boast an excellent record of forecasting recessions—and they're close to predicting one now. When the yield on long-term (10-year) Treasury securities falls below the yield on short-term (three-month) Treasuries—an inversion of the yield curve—a recession is on the way. Over the past 50 years, this test has given no false positives or failed to signal a coming downturn. Yield curve inversion has always equaled recession, and the only question is how long it will be before the recession starts; on average, it's 10 months, though it took 16 months before the 2008–09 recession.

As of mid-July, the yield curve had not inverted, but it was getting close—closer than it has been since just before the 2008 financial crisis and recession, according to Haver Analytics.

Another highly reliable presage of downturns is surprising. It's a trough in the unemployment rate—counterintuitive because low unemployment shows that an economy is growing strongly. But super-low unemployment also means the expansion is pressing up against its limits. In the past 65 years, this indicator has never missed and has never called a false positive.

Complicating such a call is the fact that we can't be sure a trough has occurred until after the fact. Unemployment hit a 17-year low of 3.8% in May, then edged up to 4% in June as more workers rejoined the labor force looking for jobs. Whether that turns out to be a bottom won't be known for at least a few more months. For now, though, we can only say it's hard to believe we aren't at least very near one.

In addition to knowing which indicators are best at predicting recessions, we also know whom not to ask: economists. At least on this one task, they're terrible. Around the world, over long periods of time, the consensus of economists has consistently failed to predict recessions even a few months before they begin. Ned Davis Research finds that in the U.S., "economists, as a consensus, called exactly none" of the seven recessions since 1970. In fact, economists typically do not "forecast" a

recession until after it has started, and even then they initially understate the decline, revising their estimates until finally getting them right shortly before the recession ends. Economists are highly valuable in helping the rest of us understand how the economy works, but they're notably reluctant to predict downturns.

This is important to remember because it means the experts won't tell us a recession is coming until it's already here. Which means it's up to you to prepare for it. (For some help, see the sidebar "Where to Invest When the Party Ends" on the next page.)

ANALYSTS ARE IN FANTASYLAND

▼ **AGAINST THAT BACKDROP**, Wall Street analysts seem utterly clueless in their optimism. Consider that over the past 70 years, U.S. corporate profits have grown at a 5.6% compound annual rate. During the greatest bull market in history, from 1982 to 2000, they grew at 6.5%. Yet Wall Street analysts believe the profits of the S&P 500 companies will rage ahead at a searing 15% annual pace—not for a few quarters, but over the next five years.

One of the all-time great investors, John Templeton, said, "Bull markets are born on pessimism, grow on skepticism, mature on optimism, and die on euphoria." This sounds like euphoria, or what we might less politely term insanity.

Trying to call turns in the market is folly, and there's no telling how stocks might perform in the next six or 12 months. Even if today's prices are in fact far too high, the market need not plunge. It could just stagnate until profits eventually catch up with prices.

Two of the best investors alive think there's even a chance of a brief market leap before sanity returns. Ray Dalio is watching for "one last spurt in equities prices," which he considers a key element of "the classic top." Fund manager Jeremy Grantham, who spotted the dotcom and housing bubbles well in advance, calls it a "melt-up," a final, rapturous delirium of buying that signals a bull market's decisive end. See the last three months of 1999 for a dramatic example.

Exactly how and when a bull market will expire is unknowable, but signs are piling up that this bull market, now in its 10th year, has about run its course. Dalio and other sophisticated investors say they can't find stocks worth buying. CNBC's latest Millionaires Survey reveals that rich investors are moving out of stocks and into cash or near-cash investments. Nobel Prize-winning economist Robert Shiller of Yale regularly surveys investors on their confidence that stocks are not overvalued; the latest reading is the lowest since 1999.

Yet those Wall Street analysts are having none of it. "It's kind of like we're in 1928 at the moment," says Shiller. "There's still all this optimism and a sense that it would be unpatriotic to disturb it."

SO DON'T JUST BEWARE, PREPARE

▼ **FROTHY STOCKS**, economic indicators pointing down, financial stability flashing red, trade war, and more—it's a lot to worry about. It doesn't necessarily mean calamity is just ahead. For all we know, stocks could resume rising or even "melt up," as Grantham says. The economy may well grow impressively this year. But we don't have to look much further out to get more nervous. No one except the Council of Economic Advisers seems to think GDP can grow at 3% over the long term, and if the recent stimulus turbocharges growth, it does so at a price that will have to be paid afterward. The economic cycle hasn't been abolished; all evidence says we're in the latter stages of one. And we had better be ready for the next recession, because when it arrives, economists will not have predicted it.

When the markets and the economy inevitably do turn, it will be, like all change, an opportunity. Stocks will be on sale, and corporate managers should remember that the competitive order in any industry always changes more in adversity than in smooth sailing.

Clearheaded investors and leaders come through downturns fine because they confront reality early—and in the best of times, they prepare for the worst.

WHERE TO INVEST WHEN THE PARTY ENDS

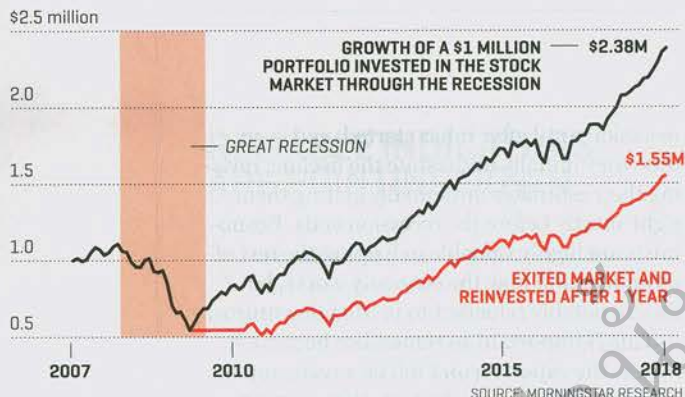
BY MATT HEIMER

THE LAST RECESSION coincided with one of history's worst bear markets in stocks. Between its peak in October 2007 and its trough in March 2009, the S&P 500 tumbled 56%, and shareholders worldwide endured a staggering \$11 trillion in lost market value.

Still, as you mull the possibility of the next bear market, keep this in mind: Most investors who bailed out of stocks a decade ago regretted it later. (See "The Price of Panic.") Pulling money out of a declining market means having to decide when to jump back in to capitalize on a recovery. The number of investors who can correctly identify the beginnings and endings of bear markets can comfortably fit in a minivan, so most people flub this timing—which in turn is one big reason most individual investors underperform the markets.

A recent study from Morningstar frames the issue starkly. From 1997 through 2017, the S&P 500 returned 7.2% annually. But if you had been on the sidelines, for whatever reason, and missed the market's 30 best days—a tiny fraction of the 5,217 trading days during that 21-year span—your stock portfolio would have *lost* 0.9% annually.

The bottom line: In a market that has registered three times as many up years as down years over the past century, staying invested usually pays off over time. Still, even optimists say there are adjustments worth making today that could ease the pain of a crash.



THE PRICE OF PANIC

Research suggests that unless they had almost supernatural timing, investors who pulled their money out of stocks during the 2007–09 market crash saw their portfolios perform far worse than those who rode it out.

RECOVER YOUR BALANCE

MANY INVESTORS build portfolios around asset allocations based on their financial goals and risk tolerance—a target of, for example, 50% U.S. stocks, 25% international stocks, and 25% bonds. But because U.S. stocks have outperformed others by such big margins recently, those percentages are now out of whack for many, with American companies occupying more than their share of space. As the dollar peaks, consider selling some U.S. stocks and buying foreign ones. Even if an economic slowdown hurts markets globally, "you'll get more bang for the buck," says Stifel market strategist Barry Bannister.

It's worth rebalancing within your U.S. portfolio too: The blistering performance of tech stocks, combined with significant price declines in other sectors, may mean you now own a little too much of Silicon Valley. Mike Wilson, chief U.S. equity strategist at Morgan Stanley, cites utilities, telecom, and consumer staples as industries whose stocks do well at this stage of the economic cycle.

GET CHOOSY ABOUT DEBT


STEADILY RISING interest rates on nearly risk-free U.S. Treasuries

"create serious competition for riskier securities," says Isabelle Mateos y Lago, BlackRock's chief multi-asset strategist. So it's wise to reduce exposure to high-yield "junk" bonds, which pay higher interest because the issuing companies are on shakier footing, and to longer-duration bonds, whose prices can dip sharply when the economy is shaky. With even lowly money markets paying around 2%, short-term debt is "not a bad place to hang out," says Wilson.

WHEN TO PLAY IT SAFER

THERE'S ONE GROUP of investors who should ignore the "don't avoid stocks" rule. Kent Kramer, chief investment officer at Foster Group, recommends that people nearing retirement act soon and sell stocks, if necessary, to sock away one or two years' worth of living expenses in money markets and short-term Treasuries, and an added five to 10 years' worth in other bonds. You don't want to be forced to sell equities when stock prices are falling, Kramer explains—that's the bind that crushed many nest eggs during the Great Recession. That said, this advice doesn't count as "market timing": It's a wise move even when the outlook is rosy.

—With reporting by Lucinda Shen and Ryan Deraousseau



**CHILDHOOD POVERTY
CREATES
ADULT POVERTY
CREATES
CHILDHOOD POVERTY
CREATES...**

TODAY'S CHILDHOOD POVERTY MUST NOT BECOME TOMORROW'S.

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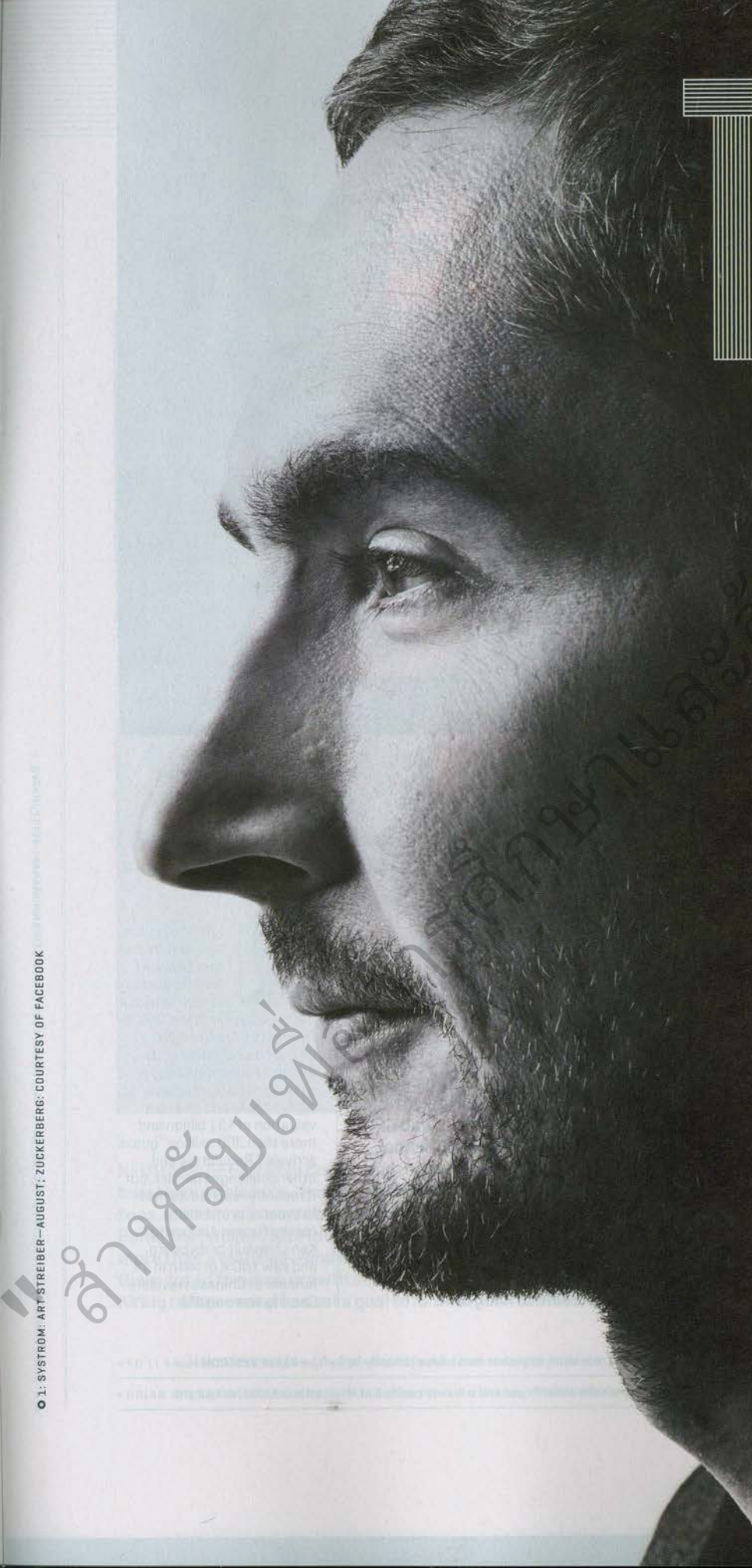
FORTY
UNDER
FORTY

2018

IN A YEAR WHEN SO MUCH SEEMS TO BE OUT OF CONTROL, it can be reassuring to remember that one constant in our world is innovation. As we assembled our annual list of the most influential young people in business, that truism shone through once again. This list always reflects broader business themes, and this year was no exception: We have a strong showing of names from China. We have innovators in A.I., e-sports, and fintech. And we have more women on our list than ever before. As always, we searched high and low for the most impressive barrier-breakers, inventors, and disrupters. There are 34 new names this year, as well as a handful of familiar names that keep getting bigger. Speaking of which, Mark Zuckerberg occupies the No. 1 slot despite Facebook's weathering the biggest crisis in its history—but in a sign of the company's shifting outlook, we had him share his space. Read on to find out with whom—and to meet the latest class of *Fortune's* 40 Under 40.

CONTRIBUTORS

Megan Arnold, Eamon Barrett, Kristen Bellstrom, Erika Fry, Leigh Gallagher, Jaclyn Gallucci, Robert Hackett, Aric Jenkins, Carson Kessler, Verne Kopytoff, Beth Kowitt, Adam Lashinsky, Polina Marinova, Radhika Marya, Ellen McGirt, McKenna Moore, Sy Mukherjee, Andrew Nusca, Aaron Pressman, Jeff John Roberts, Monica Rodriguez, Lisa Marie Segarra, Jonathan Sperling, Jonathan Vanian, Claire Zillman



KEVIN SYSTEM

34

Cofounder and CEO, Instagram

► LIST DEBUT: 2011

UNDER SYSTEM, the photo-sharing app has been on the upswing for a while, but in 2018 it took things to another level: It crossed the billion-user mark, introduced a new video-streaming feature, and is reported to be worth \$100 billion. It also seems to possess a Teflon-like force field, leaving it unscathed by the privacy crisis engulfing its parent company, Facebook. "Insta" users either don't know the two are related, or they're too addicted to care. Other notable events for Systrom (at left) include becoming a father and first-level Master Sommelier—all documented, of course, on Instagram.

MARK ZUCKERBERG

34

CEO, Facebook

► LIST DEBUT: 2009



The unsinkable Zuckerberg got through countless controversies this year, a maelstrom that would have capsized just about any other CEO. And yet despite privacy scandals galore, Russian *dezinformatsiya* run amok, and Zuck's being hauled in to testify before U.S. and EU lawmakers, Facebook continues to soak up billions in online advertising revenues, sending the stock ever higher. In July its founder surpassed Warren Buffett to become the world's third-richest person. Still, the CEO faces ongoing fallout from the biggest missteps in the company's history, along with an even graver threat: that younger users now view Facebook as the social network for their parents.

2. LOGAN GREEN & JOHN ZIMMER

34, 34

Cofounder and CEO; cofounder and president, **Lyft**

► LIST DEBUT: 2014



Zimmer was warned he was leaving a "sure thing" when he quit Lehman

Brothers to help Green with a carpooling website called Zimride. Months later, Lehman collapsed, but Zimride morphed into Lyft, making the duo two of the most successful entrepreneurs of the past decade. This year, the No. 2 ride-hailing service behind Uber has surged, benefiting from its arch-rival's troubles: Over the past year, Lyft's valuation has doubled to \$15 billion, and its U.S. market share jumped from 20% to 35%. Next up? Bike-sharing.

3. WANG XING

39

Cofounder and CEO
Meituan Dianping

► NEW



Wang attempted Twitter-, Facebook-, and Friendster-like

startups, but none were as successful as the Groupon-inspired firm he launched in 2010, now one of the largest "unicorns" with a valuation of \$30 billion. Its 2015 merger with Dianping added meal delivery, hotel bookings, movie tickets, and more, a combination Wang has called "Amazon for services." This year he added bike-sharing to that list with the acquisition of China phenom Mobike; now the company is gearing up for a \$60 billion IPO.

DHIVYA SURYADEVARA

39

Executive vice president and chief financial officer, **GM**

► LIST DEBUT: 2015

SURYADEVARA MADE HISTORY when it was announced she would become GM's first female CFO this fall, making the auto giant one of only two *Fortune* 500 companies led by a female CEO and CFO [the other is Hershey]. After growing up in Chennai, India, she moved to the U.S. to attend Harvard Business School. She joined GM in 2005 and worked her way up to CEO of GM Asset Management, adding VP of finance and treasurer to her role in 2015. In recent years, she's played a key part in GM's stake in Lyft and divestiture of Opel, and in SoftBank's investment in Cruise, GM's self-driving unit.

5. BRIAN CHESKY

36

Cofounder, CEO, and head of community, **Airbnb**

► LIST DEBUT: 2012



It was 10 years ago next month that Chesky, Nathan Blecharczyk, and Joe

Gebbia traveled to the DNC in Denver to introduce their offbeat home-sharing idea. Experts said it would never work, but the trio persevered, and today Airbnb claims a valuation of \$31 billion and more than 300 million "guest arrivals." Regulatory and other challenges persist, but it recently reached its first full year of profitability, named former AmEx chief Ken Chenault to its board, and saw 100% growth in its number of Chinese travelers. Coming soon: an IPO.

FUN FACTS

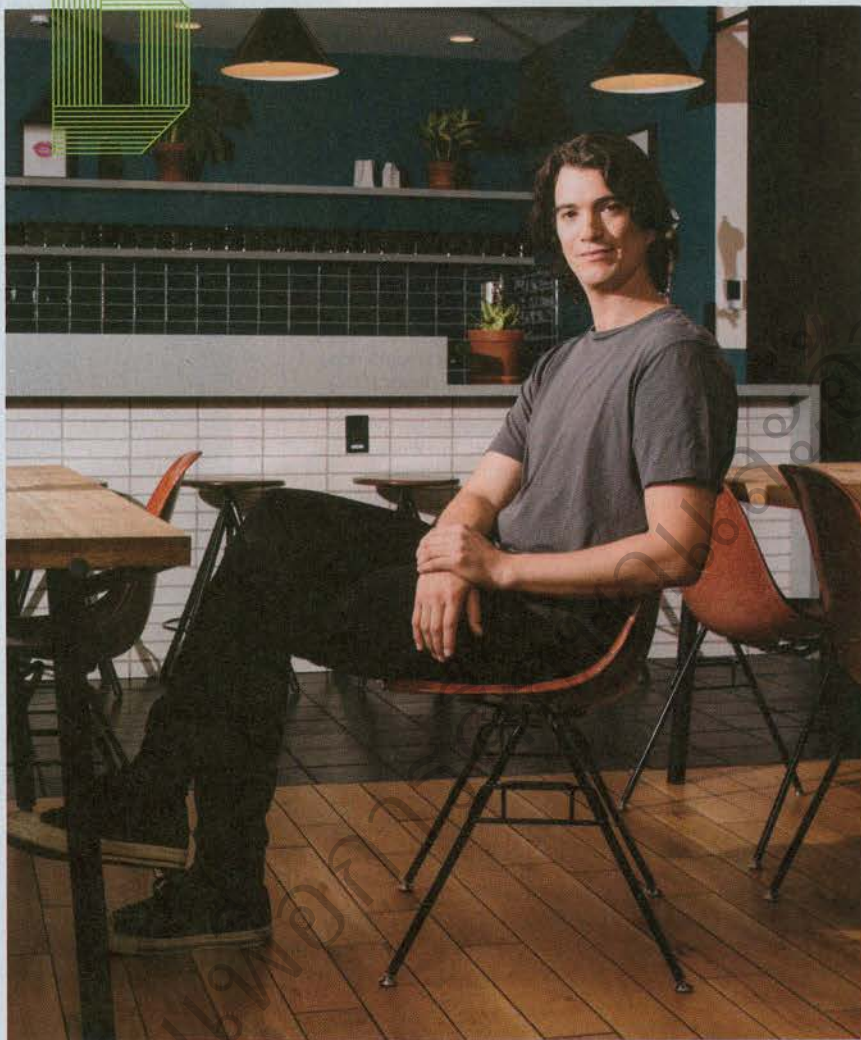
► JOHN ZIMMER and LOGAN GREEN commute to and from work together most days [usually by Lyft]. ► KEVIN SYSTRON is a self-professed amateur mixologist and recommends the elderflower and whiskey cocktail at Manhattan's Uchu restaurant.



ADAM NEUMANN ³⁹

Cofounder and CEO, **WeWork**

▶ LIST DEBUT: 2015



NEUMANN BEGAN with one shared office space in Brooklyn, but his vision quickly burst into a colossus. WeWork is closing in on 300 locations in more than 70 countries, and there's news of a recent mega-round of venture funding, led by SoftBank, that would value the company at \$35 billion. Skeptics insist WeWork is no more than a glorified—and wildly overvalued—real estate play, but Neumann tunes them out to focus on growth and social impact. His company has been a leader in hiring refugees and has set a goal to hire 5,000 in the next five years.

▶ XU LI says the executive he most admires is Berkshire Hathaway vice chairman Charlie Munger.

▶ BRIAN CHESKY in Airbnb's very early days thought that someday, if the company did everything right, maybe hundreds of people would use it.

CHINA TECH PIONEERS

7. XU LI ³⁶

Cofounder and CEO
SenseTime

▶ NEW



The first unicorn to emerge from Hong Kong, SenseTime—often referred to as the world's most valuable A.I. startup, with its valuation of \$4.5 billion—was founded in 2014 by a group of academics at Hong Kong University. They brought in Xu, a Ph.D. in computer science with expertise in computer vision, to commercialize the idea. Xu has led SenseTime to the forefront of facial recognition tech, providing solutions for surveillance systems—the Chinese government is a big customer—as well as more than 700 corporate clients.

ZHANG YIMING ³⁵

CEO
ByteDance

▶ NEW



Fast-rising ByteDance owns Toutiao, China's most popular news app with more than 700 million users; it also bought short-video app Musical.ly for \$1 billion last year and used it to revamp its own version, Tik Tok, which became the world's most-downloaded nongaming iPhone app in the first quarter of 2018. Next up: Zhang is said to be mulling a Hong Kong IPO that could value the company, which has had a private-market valuation of \$20 billion, at more than \$45 billion.



8

DREW HOUSTON, 35
COFOUNDER
AND CEO,
DROPBOX

DANIEL EK, 35
COFOUNDER
AND CEO,
SPOTIFY

KATRINA LAKE, 35
FOUNDER
AND CEO,
STITCH FIX

The IPO Trio

Thirty-five appears to be the magic age for this group, each of whom led his or her company where many other startups are not—into the public markets—in the past year. With the IPO of her online retail and styling company last November, Lake became not only the sole woman to take a tech startup public last year, but also one of the youngest female founders ever to lead a company into the public markets. [And those markets have cheered: Stitch Fix stock has more than doubled.] For his part, after 11 years of running his popular cloud-storage company, Houston took Dropbox public in March; shares jumped 40% on opening day and are up 13% since. And in true disrupter form, Ek, more than a decade after founding the streaming music pioneer, chose an unorthodox route with a direct listing of Spotify's stock, circumventing Wall Street and all its expensive infrastructure.

9. WHITNEY WOLFE HERD 29

Founder and CEO
Bumble

► NEW



When is a dating app more than a dating app? When it's Bumble, Wolfe

Herd's startup turned cultural phenomenon. The woman-first swipe app has acquired some 34 million registered users and an estimated \$100 million in revenue since its 2014 launch, turning Wolfe Herd into a feminist business icon. Not that it's been a smooth ride—Bumble and archrival Match Group are suing each other, and Facebook's getting into the market. But Wolfe Herd's star keeps rising: She recently joined the board of Imagine Entertainment.

10. KEITH COZZA 39

President and CEO
Icahn Enterprises

► NEW



After joining the company as a controller 10 years prior, Cozza was

named president and CEO of Icahn Enterprises in 2014. Under his leadership, Icahn—the conglomerate with investments in a slew of industries, from energy and railcars to food and fashion, named after its founder, activist investor Carl Icahn—saw record net income last year of \$2.4 billion. As of May, the University of Dayton alum also serves as chairman of the board at Xerox, where Icahn just won a high-profile shareholder campaign.

FUN FACTS

- WHITNEY WOLFE HERD banned images of guns on Bumble in the wake of the Stoneman Douglas shooting in Parkland, Fla.
- STEPHANIE LAMPKIN dedicates three days a week to having no meetings so she can "just get things done."



JORDAN PEELE ³⁹

Founder
Monkeypaw Productions

• NEW

YOU MAY KNOW Peele as an actor, or more recently as an Oscar-winning writer-director, but the Manhattan native has emerged as one of Hollywood's premier producers. His production company has a flurry of active projects, including a horror drama series with HBO and a sci-fi anthology on the rebranded YouTube Premium. In June, newly named Amazon Studios chief Jennifer Salke's first order of business was signing Peele to an exclusive TV deal. The *Get Out* director has paved the way for a new market of socially conscious horror, with the film earning \$255 million off a budget of \$4.5 million and the first Academy Award for original screenwriting ever won by an African-American.

11: ART STREIBER/AUGUST

- ▶ **JOEY LEVIN'S** biggest productivity tip: "Surround yourself with people you trust." His quirkiest habit: attempting handstands.
- ▶ **JENNIFER HYMAN** saw her first concert, Paul McCartney at Madison Square Garden, with her father.

12. JACINDA ARDERN 37

Prime Minister
New Zealand

• NEW

It's only appropriate that Prime Minister Arderon, a onetime DJ, became a rock star of New Zealand politics. Her fervent support among Kiwis, dubbed Jacindamania, helped reverse her Labour Party's ailing fortunes this fall and catapulted her to the title of world's youngest female leader. The buzz continued when she announced her pregnancy and in June painted a once-in-a-generation vignette: a female head of government, cradling her newborn and embarking on six weeks of maternity leave. Her time off is flexible, it seems. In July she announced welfare reforms—including a weekly stipend for new parents—as part of Labour's promise to improve well-being in a nation that's grappling with housing and immigration crises.



13

ANDY DUNN, 39
SVP, DIGITAL
CONSUMER
BRANDS, WALMART
E-COMMERCE

SUMAIYA BALBALE, 37
VP OF E-COMMERCE,
MOBILE AND DIGITAL
MARKETING,
WALMART U.S.

The New Faces of Walmart

Walmart is transforming itself for the e-commerce era as it battles Amazon over the future of retail, and at the center of it are Dunn and Balbale. They're young, urban, and digitally savvy, representing a new generation of Walmart employees—and a new type of customer that Walmart is trying to attract. [They're new to this list too.] Following Walmart's \$310 million acquisition of his men's clothing label Bonobos in 2017, Dunn took over all of its digital brands, revamping vintage-inspired line ModCloth and launching luxury bedding and mattress brand Allswell. Balbale, who came to the company through its \$3.3 billion acquisition of Jet, where she was CMO, has seen her purview balloon. She now runs marketing for Walmart.com, all digital marketing for Walmart U.S., as well as social media. So far so good: U.S. e-commerce sales were up 33% in the most recent quarter.

MEDIA MOGULS

14. JOEY LEVIN 38

CEO
IAC

• LIST DEBUT: 2016



The former investment banker runs the \$13 billion [market cap]

Internet empire built by Barry Diller, parent to a portfolio of brands ranging from the Daily Beast to Investopedia to Match Group, the \$11 billion online dating giant it spun off in 2015 and still controls. Other than Match, bright spots include the newly merged ANGI Home-services, Dotdash, and Vimeo (see below). Oh, and IAC stock, which has soared: Since Levin took over in mid-2015, shares have risen almost three times as fast as the broader market.

ANJALI SUD 34

CEO
Vimeo

• NEW

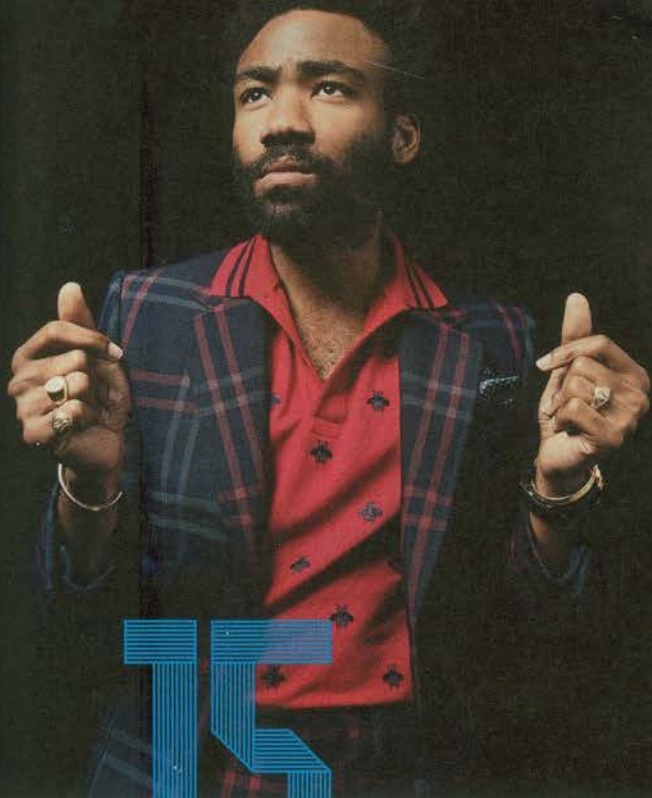


Sud joined Vimeo as head of marketing in 2014; last year she was named

CEO, charged with focusing Vimeo as a cloud-based platform for video creation, distribution, and monetization, targeting individuals and small- to medium-size businesses. With revenue expected to exceed \$125 million this year, Sud's boss Levin (above) has called Vimeo "the biggest nonpublic opportunity inside IAC." Fun fact: Sud tries to sleep nine hours a night.

FUN FACTS

- ANJALI SUD'S best piece of advice came from her father: "Make decisions based on your strength, not your fears."
- ANDY DUNN does a "smartphone Shabbat": He spends one 24-hour window each week off his phone entirely.



15

DONALD GLOVER ³⁴

Actor, writer, director, musical artist

► NEW

PERHAPS NO PERSON encapsulates show business right now more than Glover. In May, "This Is America"—the viral single from his musical alter ego, Childish Gambino—debuted at No. 1 on the U.S. *Billboard* Hot 100, with 65.3 million streams in its first week. Two months earlier, *Atlanta*—the FX show created by and starring the Stone Mountain, Ga., native—pulled in 2.7 million viewers for its season two premiere, more than any other cable comedy over the past year. A seemingly tireless worker with a pulse on the cultural zeitgeist, Glover embodies the entertainment entrepreneur.

► SUMAIYA BALBALE cherishes a standing weekly dinner with her extended family: "They keep me grounded and are a reminder of what really matters."

► JACINDA ARDERN'S father is a former police officer. Her quirkiest habit today? "I watch trashy crime shows to relax."



15

EVAN SPIEGEL ²⁸

Cofounder and CEO, Snap

► LIST DEBUT: 2014

SNAP CAN ATTRACT USERS. Can it attract ad dollars? That was the question that dogged the Los Angeles media company after its highflying 2017 IPO. Spiegel spent much of that year watching rival Facebook reap the benefits of copying Snap's product innovations. No more: Though the assault by Zuckerberg & Co. continues, Spiegel has moved aggressively to hone Snap's focus and chase software-driven ad sales—and to show the world he won't back down. Now he just has to prove it by reviving Snap's lagging revenue and stock price.

17. PATRICK & JOHN COLLISON 29, 27

Cofounder and CEO; cofounder and president, **Stripe**

▶ LIST DEBUT: 2015



The Irish-born brothers are a couple of the world's youngest self-made billionaires. Patrick and John dropped out of MIT and Harvard, respectively, and sold their first business—an online auction management company—for a reported \$5 million in 2008. Then they embarked on the idea that would become Stripe, now a payments behemoth valued at \$9.2 billion. The company processes tens of billions of dollars in digital commerce transactions each year, inking deals with the likes of Amazon, Lyft, and Facebook.

18. JENNIFER HYMAN 37

Cofounder and CEO
Rent the Runway

▶ LIST DEBUT: 2012



The “closet in the cloud” service now claims more than 9 million members and has moved well beyond its roots: renting gowns for special occasions. Its two-year-old Unlimited service, where customers pay a flat fee for access to everyday clothing, grew 125% last year. This fall it will launch an enterprise program, renting inventory on behalf of other brands and retailers. This spring it raised \$20 million from Jack Ma’s investment vehicle at a valuation said to be north of \$700 million, and Hyman was named to the board of Estée Lauder.

19. ANTHONY TAN & TAN HOOLING 36, 35

Cofounder and CEO; cofounder, **Grab**

▶ LIST DEBUT: 2016



The ride-hailing start-up’s name is a perfect description of its approach to 2018. In March the company snapped up rival Uber’s Southeast Asia operations, cementing its position as the dominant on-demand taxi provider in the region. In June, Toyota pumped \$1 billion into the business in a round of funding said to value Grab at more than \$10 billion. Now the duo are focused on transforming Grab into an “everyday superapp,” offering mobile payments, microfinancing, grocery shopping, and more.

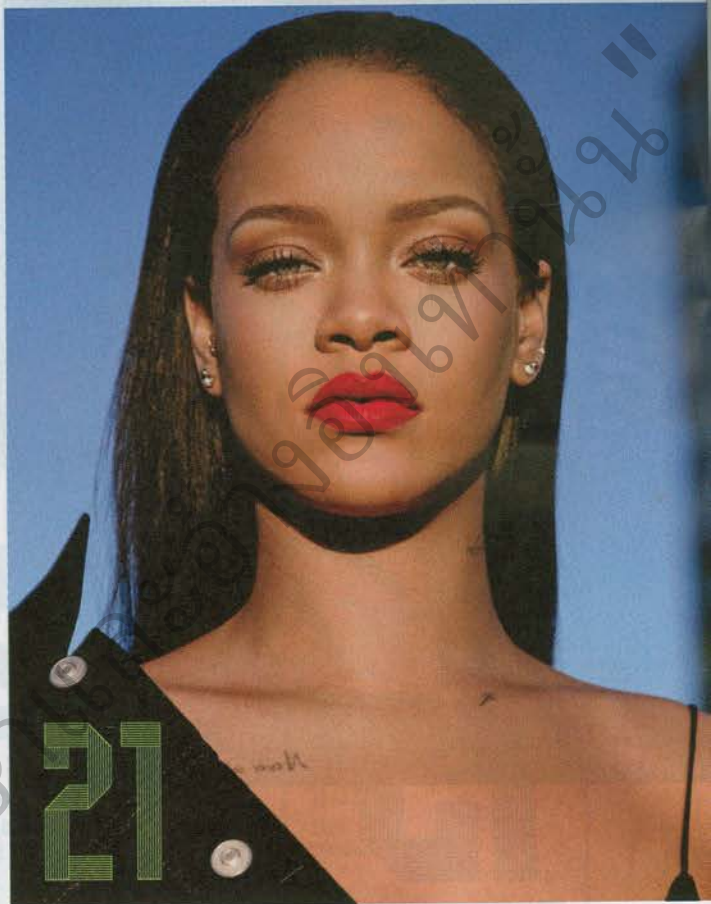
20. BRIAN ARMSTRONG 35

CEO and cofounder
Coinbase

▶ LIST DEBUT: 2017



Armstrong is building Coinbase, the biggest U.S. Bitcoin exchange, into what his team hopes will become “the Google of crypto”—as relevant to the next wave of the web as Google was to the last. While it has a way to go, it’s on the right track: During this winter’s investment mania, Coinbase catapulted into the mainstream, eclipsing Charles Schwab in total accounts. Now the company is investing in startups and making acquisitions—including one that secured it a path to several tantalizing financial licenses.



RIHANNA 30

Singer, songwriter, actor, entrepreneur

▶ NEW

LAST FALL, THE BARBADIAN SINGER launched a much-anticipated cosmetics line, **Fenty Beauty**, a collection that included 40 shades with a wide array of deeper tones. The venture went well beyond the standard celebrity brand extension and became not just a financial success, reportedly pulling in \$100 million in its first 40 days, but also a social statement, with the darker shades selling out in many outlets and mainstream brands following with their own more complete ranges. *Time* named it one of 2017’s best inventions. In May she released a lingerie brand that caters to all body types and sizes.

FUN FACTS

- ▶ **BRIAN ARMSTRONG** fixates on inconsistent colors in a spreadsheet or extra spaces in documents: “It bothers me more than it should.”
- ▶ **ANTHONY TAN’S** biggest productivity tip: “Never procrastinate. Just get it done right away. That way the work never piles up.”

22. VITALIK BUTERIN 24

Creator
Ethereum

▶ LIST DEBUT: 2016



Buterin describes his open-source blockchain platform

Ethereum as a "world computer." The skinny visionary's experiment, which began as a white paper, now has a market valuation of \$48 billion, making it the second-most-valuable crypto network next to Bitcoin. Ethereum caught a lucky break this year when the SEC said it would not regulate Ether, the network's native coin, as a security. Rumor has it Google recently tried to hire Buterin to lead its own whispered crypto endeavors, but he declined.

23. ALEXANDRIA OCASIO-CORTEZ 28

Politician, educator,
community activist

▶ NEW



In June the former Bernie Sanders organizer made history with her primary-election upset victory against Joe Crowley, a 10-term Democrat incumbent in New York's 14th congressional district. Though it was her first time running for office, and though she faced Crowley's 10-to-1 fundraising advantage, the Bronx native of Puerto Rican descent garnered 58% of the vote. If she wins—almost a sure thing given the overwhelmingly Democratic district—she'll make history again as the youngest woman elected to Congress.

24. VLAD TENEV & BAIJU BHATT 31, 33

Co-CEOs and cofounders
Robinhood

▶ NEW



What if you could buy stocks with your smartphone—and avoid annoying trading charges to boot? That's how millions of young investors use Robinhood. Bhatt and Tenev, who met as Stanford math whizzes, launched the company in 2013 as an egalitarian challenge to old-guard brokerage houses. Five years later, it has shot to a valuation of \$5.6 billion. This year they added Bitcoin and other cryptocurrencies to the trading mix and now hope to build Robinhood into a full-blown digital bank.

PAVEL DUROV 33

CEO and cofounder, **Telegram**

▶ NEW

HE'S BEEN CALLED the "Mark Zuckerberg of Russia," but it's time to ditch the epithet and recognize Durov's achievements in their own right. After having his Facebook clone, VKontakte, the second-most-popular website in Russia, ripped away from him by alleged Kremlin cronies in 2014, Durov focused his efforts on Telegram. The encrypted-chat app has amassed more than 200 million monthly active users since its founding five years ago. It has even hosted one of the most extravagant "initial coin offerings" to date, raising a reported \$1.7 billion in exchange for promised crypto coins. Now Durov, a newly minted billionaire, is fighting bans in Russia and Iran, where government leaders claim Telegram facilitates insurrection.

▶ **VLAD TENEV** says the best advice he ever got was to take the time to find the right partner, both personally and professionally.

▶ **VITALIK BUTERIN** most admires English gerontologist and mathematician Aubrey de Grey. He says his own biggest flaw is "being too ideological."



26. DAVE GILBOA & NEIL BLUMENTHAL ^{37, 37}

Co-CEOs and cofounders
Warby Parker

• NEW



Inspired by a lost pair of glasses and a grad school budget, Blumenthal and Gilboa, along with two other cofounders, started the socially conscious and affordable eyewear company in 2010 while studying at the University of Pennsylvania. The “try before you buy” idea took off, and their direct-to-consumer model pioneered an enduring retail wave; the duo now steer a billion-dollar brand that has raised more than \$300 million. Through their “buy one, give one” model, Warby has donated more than a million pairs of glasses to the needy.

27. SONIA CHENG ³⁷

CEO
Rosewood Hotel Group

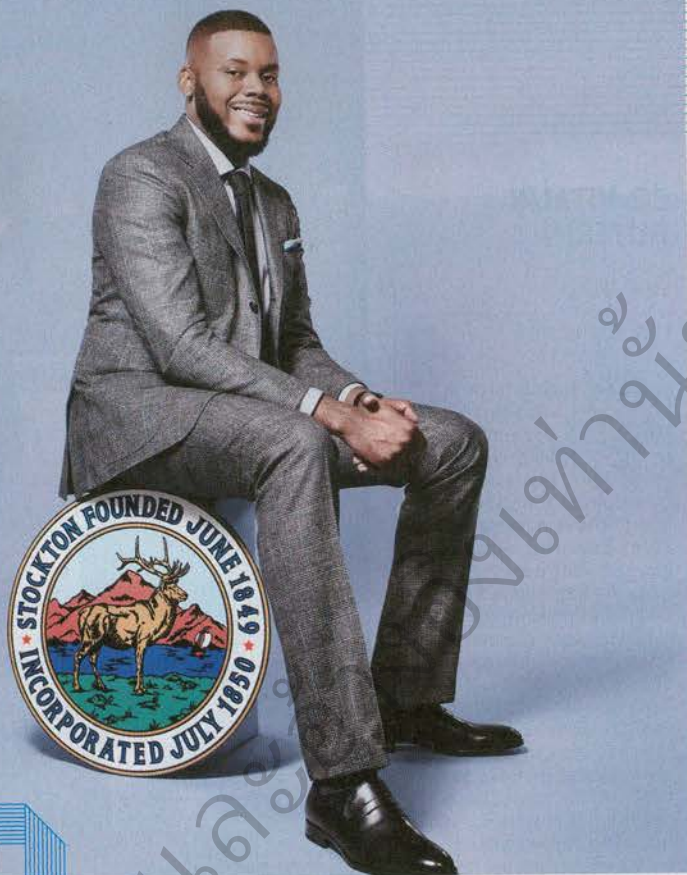
• NEW



When the Harvard grad and ex-investment banker became CEO in 2011, the then Dallas-based, high-end hotel outfit ran 19 properties, mostly in the Americas. Today it claims 61—with 25 more in the works—ranging from bespoke outposts in Beijing, London, and Luang Prabang to Silicon Valley’s Sand Hill Road. Cheng’s fingerprints are all over these sites and the explosive growth. It may be the family business—Rosewood was bought by the conglomerate founded by her late grandfather—but the vision is all hers.

FUN FACTS

► **CHRISTINA TOSI'S** lowest moment in her career was starting out in New York City restaurants: “Starting at the bottom, working my way up for sub–minimum wage, in oversized chefs’ clothing, in male-dominated kitchens. I was yelled at, screamed at, underestimated, and teased plenty... To be clear, those years also capture some of my most favorite moments. Adversity is a terrible thing to waste.”



MICHAEL TUBBS ²⁷

Mayor, Stockton, Calif.

• NEW

AT AN AGE when many people are considered too young to entrust with much responsibility, Tubbs runs an entire city—Stockton, Calif., pop. 320,000. In fact, he was elected as both the youngest mayor in history of any sizable U.S. city and Stockton’s first black mayor. And with youth has come an unconventional idea. Tubbs is implementing universal basic income, a hot but largely untested economic theory that involves government giving cash to citizens to eliminate poverty. Starting as soon as this fall, the city will give \$500 a month in donated money to up to 100 local families to spend as they please.

29. FENG ZHANG ³⁶

Biochemist, Broad Institute
and McGovern Institute

• NEW



In July, UCLA and UCSF scientists made an exciting proclamation: Gene editing could potentially be used as a much more efficient form of cancer immunotherapy. The technology at the heart of that discovery is what’s known as Crispr, and Zhang is one of the scientists who pioneered its use in human cells, sparking a flurry of interest in using Crispr to tackle everything from inherited diseases to cancer. Earlier this year, Zhang and colleagues helped launch a new Crispr-focused startup, Beam Therapeutics, with \$87 million in funding.

CHRISTINA TOSI 36

Founder and CEO, Milk Bar

▶ NEW



30

TOSI SPAWNED her whimsical bakery in 2008 from the Momo-fuku restaurant empire. Now she's building her own culinary kingdom with her 14-location Milk Bar chain, which serves up cult goodies like Cereal Milk soft serve and Crack Pie. Last year she raised her first-ever round of funding to expand to more cities. And with two James Beard awards, a third cookbook on the way, and a judging spot on various seasons of *MasterChef*, she's well on her way to building her own lifestyle brand.

31. EMILY WEISS 33

Founder and CEO, Glossier

▶ LIST DEBUT: 2017



The beauty industry needed a fresh face. Enter

Weiss and her Glossier brand, which preaches minimal, individualized self-care. Weiss, an art-school grad, learned the ropes as a Condé Nast assistant and blogger. Her *Into the Gloss* platform gave birth to the Glossier line of products, which are direct-to-consumer, simply designed, and oh so Instagrammable. Young shoppers have latched on to Glossier, and investors have too. It has raised \$86 million and is valued at \$390 million.

VCs MAKING A DIFFERENCE

32. ARLAN HAMILTON 37

Founder and managing partner, Backstage Capital

▶ NEW



Four years ago, Hamilton was living out of a hotel room she shared with her mother. Today she's a VC who has deployed some \$4 million across 100 companies led by underrepresented founders (including Blendoor, our No. 34) through her venture firm. She's also raising an added \$36 million to invest exclusively in startups founded by black female entrepreneurs. [She's calling it the "It's about damn time fund."] Hamilton aims to close the funding gap for women of color, who receive only 0.2% of total VC dollars—and others are taking note.

33. MARC STAD 39

Founder and partner, Dragoneer Investment Group

▶ NEW



Stad has made a career by surprising people. His collection of hedge funds focuses on public securities and Asia, yet two of its biggest wins have been funding pre-*IPO* debt for Spotify and buying a big slug of Uber. His breadth masks his age, a source of surprise to some. ["I had no idea he was under 40," said Uber CEO Dara Khosrowshahi.] Stad prides himself on "being creative in a traditionally uncreative industry," which is paying off as his decade-old Dragoneer punches above its weight, investing alongside far more established firms.

ANU DUGGAL 39

Founding partner, Female Founders Fund

▶ NEW



Entrepreneur turned investor Duggal launched Female Founders Fund in 2014 as a seed-stage venture fund to invest in female-led technology companies. After 700 investor meetings, she raised \$5 million, which she invested in companies like Thrive Global, Zola, and Maven. By 2018, times had changed, and in May, Duggal closed \$27 million for her second early-stage fund, with a roster of limited partners including Melinda Gates and Katrina Lake [see No. 8].

34. STEPHANIE LAMPKIN 33

Founder and CEO, Blendoor

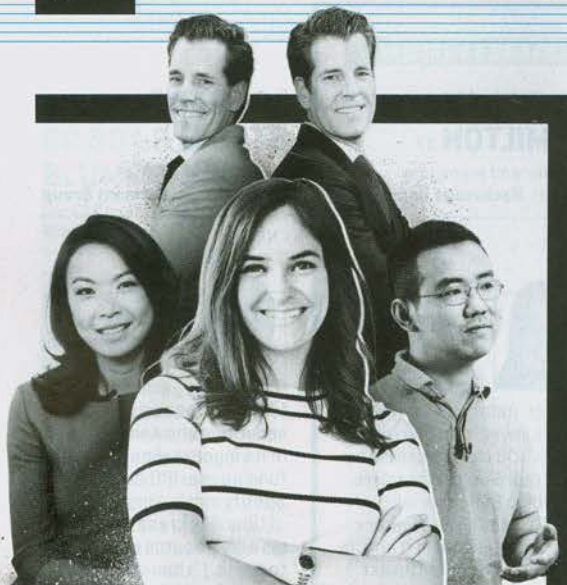
▶ NEW



Lampkin was a full-stack web developer by 15 and holds degrees from Stanford and MIT. But that wasn't enough to get her in the door at Google. With its 55,000 employees and only a handful of black women in tech roles, Lampkin thought... bias? So she founded Blendoor to help tech companies eliminate bias in hiring. Clients include Salesforce, Google, and Airbnb. Blendoor also publishes the BlendScore report, a revealing data-driven ranking of the diversity strength of 160 companies.

▶ ANU DUGGAL'S productivity tip: "Lists! I start my day with lists and end my day with lists. It helps me zero in on what's important to accomplish."

▶ MARC STAD walks whenever he's on his cell phone. One day, a few months ago, he walked 30 miles.



Introducing the 'LEDGER 40'

This year, one list wasn't enough. For the first time ever, *Fortune* has assembled a supplementary honor roll of the most impressive, young superstars who are transforming business at the leading edge of finance and technology.

The Ledger 40 Under 40 list, compiled by *Fortune*'s fintech team, shines a light on the pioneers building some of the world's fastest-growing businesses. They're innovating around digital payments, cryptocurrencies such as Bitcoin and Ethereum, and the blockchains, or distributed accounting ledgers—tech upon which much of this financial revolution is based.

Some faces will be familiar from the main list (see, for example, No. 17). You may also recognize the Winklevoss twins, Cameron and Tyler (above, top), who turned the proceeds from a legal settlement over the origins of Facebook into a billion-dollar Bitcoin investment. Others are less well-known but just as much worth knowing. Jihan Wu (right), cofounded Bitmain, the world's biggest Bitcoin mining hardware manufacturer. Rachel Mayer (center) leads the investing app for Circle, one of the top U.S. crypto startups—helping cryptocurrency trading go mainstream. And Christine Moy (left) is now the blockchain guru for JPMorgan Chase, America's largest bank.

Visit Fortune.com/the-Ledger-40-Under-40 for the full roster, and get ready for Brainstorm Finance, a new conference we'll be hosting on this theme in Montauk, N.Y., June 19–20, 2018.

FUN FACTS

► **LYNN JURICH** doesn't own a car and walks everywhere, including the three miles to and from her San Francisco office every day.

► **NEIL BLUMENTHAL'S** biggest regret: Not asking more friends to invest in Warby Parker. "I was worried I'd lose their money."

TECH REFORMERS

35. TRISTAN HARRIS ³³

Cofounder
Center for Humane Technology

► NEW



Put down your phone. Go outside. Do something else. This is the gospel that Harris, a modern-day Neil Postman, preaches. Formerly Google's resident "design ethicist," he left after becoming disillusioned with the ways tech companies prey on people's time and attention. Then he single-handedly kicked off an international conversation about digital distraction and app addiction with his viral writings and talks. In January, Mark Zuckerberg co-opted Harris's signature phrase, "Time well spent," as a design goal for Facebook.

ERIC RIES ³⁹

Author; founder and CEO
Long-Term Stock Exchange

► NEW



Ries became a corporate guru after his 2011 book *The Lean Startup* influenced a generation of startups and big companies alike. Now he's focused on building the LTSE, a new exchange with listing standards that prioritize long-term investing. Wall Street's short-term focus is a well-acknowledged problem. Will Ries solve it? Right now he's still pursuing the complex regulatory path required, but he's raised some \$19 million to fund it—and he did, after all, write the book on successful innovation.

36. LYNN JURICH ³⁹

CEO and cofounder
Sunrun

► NEW



Former venture capitalist Jurich started the \$1.7 billion market value Sunrun in her cofounder's attic a year before the 2008 recession. She weathered the crisis and survived, taking the company public in 2015 (with her 1-month-old daughter on her hip at the opening bell). Sunrun's customer base has grown by 38% annually for the past five years, and in 2018 Sunrun took market share from SolarCity, owned by Elon Musk's Tesla, to become the leader in residential solar, battery storage, and solar energy services in the U.S.

37. NATE NANZER ³⁹

Commissioner
Overwatch League

► NEW



The California native is on the front lines of the world of e-sports. Under Nanzer's supervision, Overwatch League began its inaugural season in January, and already the multiplayer, first-person shooter game is game company Activision Blizzard's fastest-growing franchise, with revenues of over \$1 billion. By integrating existing e-sports organizations with traditional sports owners, Nanzer has helped the league secure 12 permanent franchises around the world—and hopes to take it to continental Europe and the Middle East next season.

38. HEIDI ZAK ³⁹

Cofounder and co-CEO
ThirdLove

▶ NEW



After working at Google and Aéropostale, Zak brought her retail and

tech backgrounds to the table with an idea to start a fit-centric company to make buying—and wearing—bras a more comfortable experience. Launched in 2013 with the help of her cofounder, co-CEO, and husband, David Spector, ThirdLove, with its half-cup sizes, its quiz to determine what bra works best, and its convenient direct-to-consumer format, has been a viral success, yielding annualized revenue growth that has exceeded 450% for the past two years.

39. GEOFFREY & MATTHEW CHAIKEN ^{36, 32}

Cofounder and CEO; cofounder and COO, **Blink Health**

▶ NEW



The Chaiken brothers are tackling one of health care's biggest prob-

lems: the sky-high cost of prescription drugs. Blink's strategy is to use e-commerce to score patients lower prices for their medicine. Their mission is to upend the byzantine and opaque pharmaceutical supply chain, in which middlemen often take a cut without passing savings on to consumers. So far, it seems to be working: Blink has partnered with drug giants Eli Lilly and Roche and has a participating pharmacy in most zip codes.



RANA EL KALIOUBY ³⁹

Cofounder and CEO, **Affectiva**

▶ NEW

EL KALIOUBY IS TRAINING MACHINES to master the fuzzy realm of human feelings. The Egyptian-American entrepreneur cofounded Affectiva, a venture-backed "Emotion A.I." startup, as a research scientist at MIT in 2009. Since then, the firm has analyzed 6.8 million faces—the better for decoding how to tell a smile from a smirk—and signed up 25% of the world's biggest companies as users. Marketers, eager to test ads and products, have pounced on the mind-reading technology, though it's also being applied to more virtuous use cases, like assisting individuals with autism and diagnosing depression. ■

▶ RANA EL KALIOUBY says empathy has been the personality quality most critical to her success [but she's tried to cut her usage of smiley emojis].

▶ NATE NANZER wakes up at 4:26 a.m. twice a week so he can work out and be back by 6:15 a.m. to get his kids out of bed and make them breakfast.



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**G/
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COMPANY
VOLKSWAGEN

COUNTRY
GERMANY

CEO
HERBERT DIESS

RANK
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INSIDE VW'S BIG

Eager to put the "Dieselgate" scandal in its rear view, the German auto giant



DRIVING CHANGE New Volkswagen CEO Herbert Diess, here in a self-driving concept car at VW's innovation center, is investing heavily in new technology.

FIX-IT JOB

is overhauling its culture and making a bold bet on electric vehicles. **BY VIVIENNE WALT**



0

it's missing a steering wheel, pedals, gears, or anything else you'd normally expect to find in an automobile. The slick contraption is a VW concept car called the I.D. Vizzion. It made its debut at the Geneva Motor Show in March.

The I.D. Vizzion is more than just an experiment, however, or a living room on wheels. Rather, says Diess, it offers a glimpse of our driverless near-future. And Diess is betting heavily on a strategy built on that vision—staking hundreds of millions of dollars on electric and autonomous technology. The CEO insists that getting the technology right will be key to the survival of his company.

“Look what happened when we went from horse-drawn carriages to cars, from chemical-based photography to digital photography,” says Diess, sitting in Volkswagen’s gargantuan factory headquarters in Wolfsburg, a sleepy company town of 125,000 people, some 140 miles west of Berlin. “There was huge disruption. Very few of the successful companies remained. Kodak did not make it, and they knew what was coming.”

Just a couple of months into his job, Diess, 59, has chosen to meet me inside Volkswagen’s secretive innovation center—a black velvet curtain hides one part of the room from view—in order to underscore his point: That only radical transformation can save the auto giant from being left behind by more nimble competitors. “It is now really important for us to change,” he says.

Few businesses sit so squarely in the crosshairs of a tech upheaval as the auto industry, whose very existence has depended for more than 100 years on a single invention: the combustion engine. Today, the industry overall sells about 80 million cars a year. Last year, a full 10.8 million of those came from the Volkswagen Group, more than the 10.4 million sold by Toyota, which had held the top-selling spot for years. Volkswagen’s 12 brands include Porsche, Skoda, Audi, and VW itself, the biggest brand of all. Last year, Volkswagen’s total revenues were a record \$260 billion. That was enough to place the company at No. 7 on this year’s *Fortune* Global 500 list—one spot behind Toyota.

And yet, while millions of us will probably be filling our tanks with fuel for years to come, carmakers are facing a major shakeout as the world begins a long-term shift to electric vehicles and as carbon-emissions targets in many countries slowly upend old driving habits. A boom in ride-sharing could also drastically reshape cities and car ownership within a decade.

Amid this transformation, the U.S., whose passion for cars virtually dictated the industry’s strategy for decades, is seeing its market dominance fade. More important now is China—Volkswagen’s biggest market—which buys about one-quarter of all the world’s new



cars and which is racing full speed into producing mass-market electric vehicles. “Change,” says Diess, “is imminent.”

Turbulence on this scale would be daunting for any business. But at Volkswagen, it’s happening while the company is still reeling from its mammoth diesel-cheating scandal, which some execs describe as its biggest trauma since Adolf Hitler launched the Wolfsburg factory as a prized Nazi project exactly 80 years ago.

“Dieselgate,” as the scandal is known, exploded in September 2015, when the U.S. Environmental Protection Agency revealed that Volkswagen had engaged in carbon-emissions testing fraud in about 600,000 diesel-powered vehicles; that number has since risen to millions. Over a period of more than five years, engineers in Wolfsburg had installed “defeat



SHIFTING INTO A HIGHER GEAR
Workers assembling an e-Golf electric vehicle at a Volkswagen plant in Dresden, Germany. VW plans to phase out the e-Golf in favor of a new EV platform.

devices” in vehicles—software that masked the level of nitrogen oxides the engines were emitting. The real emissions rates were revealed to be up to 40 times above the legal U.S. limit, according to MIT scientists, who estimate that the toxic compound in the tricked-out engines could cause about 1,200 early deaths in Europe and about 60 more in the U.S.

Nearly three years on, Volkswagen has so far paid almost \$30 billion in legal settlements and recalled or refitted more than 11 million vehicles—and the fallout is still far from over. “To my dismay we sometimes still find functions in older software that we did not know was there,” says Volkswagen’s chief technology officer Ulrich Eichhorn. In addition, Volkswagen is embroiled in dozens of prosecutions and lawsuits across Europe and the U.S. that are likely to linger

for a long while yet; the latest annual report, in March, listed dozens of ongoing legal challenges. “It will take years,” Diess says. How many? “I cannot say.”

To show how the company is moving forward, Volkswagen invited *Fortune* to spend several days in late June in its sprawling Wolfsburg headquarters, offering a rare, deep look inside the company at a pivotal moment in its 80-year history.

The giant factory complex, roughly the area of the principality of Monaco or the Atlanta airport, produces 8 million cars a year, from a set of austere-looking redbrick buildings that date back to when the Nazis ran the operation in the 1930s and 1940s. The factory’s World War II bomb shelter sits directly underneath the state-of-the-art, robot-controlled assembly line and has been turned into a memorial to the 20,000 or so forced laborers and concentration-camp inmates who worked in the factory, watched over by the Gestapo. Coincidentally, the week *Fortune* visited Wolfsburg, the town celebrated its 80th birthday, marking Hitler’s inauguration of the Volkswagen factory in 1938. Today, Volkswagen apprentices take three-day trips to the Auschwitz concentration camp as part of their training.

Volkswagen says it’s eager to talk about the future rather than

rehash the scandal. But ignoring Dieselgate has proved impossible. Two weeks before *Fortune's* visit to Wolfsburg, German prosecutors had levied a billion-euro penalty (about \$1.17 billion) against Volkswagen for Dieselgate, one of the country's biggest-ever industrial fines—and a blow against one of Germany's most iconic companies. Days later, police stormed Audi CEO Rupert Stadler's home and arrested him for alleged involvement in the scheme. Among the documents police seized was Volkswagen's internal report on Dieselgate, which it had commissioned Jones Day lawyers in Munich to compile and which the company has refused to release publicly; in early July, it lost a legal challenge to keep the report confidential.

Dieselgate overshadowed almost every conversation I had in Wolfsburg, as executives pored over its details, described their shock and embarrassment, and outlined their plans to exit the crisis and remake Volkswagen.

"This is the worst industrial scandal in Germany since World War II," says Hiltrud Werner, who joined the company last year to take charge of integrity and legal affairs and is the sole woman on Volkswagen's board of management. "This will stay with the history of this company forever," she adds. "It has a magnitude that we have not seen before."

The financial cost has been mammoth as well: The \$30 billion paid out so far—a figure that is sure to rise further—equals "the money we make in three good years, and we don't always have good years," says technology chief Eichhorn. "I am ashamed that my company did this."

For all the soul-searching in Wolfsburg, however, one question remains: Now that the company is rushing—belatedly—to embrace green technology, can it remake itself quickly enough to retain its enormous clout, or will it steadily decline, along with the old-style business models of traditional automakers?

So far, the signs of a recovery look good. Volkswagen is generating record sales and revenues; it overtook Toyota as the world's biggest automaker by sales volume in 2016, the year after the scandal broke. Even so, competitors from California to China—younger, more agile, less hidebound by rigid structures—are nipping at its heels and, just like Volkswagen, are racing to build a new-age auto industry.



Ironically, Volkswagen's best hope for success springs from the scandal itself, which forced the automaker to confront its deep flaws and to conclude that it faces severe threats if it remains unchanged.

Diess arrived at Volkswagen from BMW AG in July 2015, two months before Dieselgate exploded. He was lured to Volkswagen specifically to inject new ideas and technology strategies, and to cut costs, as he had done at BMW. Now he is charged with taking a wrecking ball to old habits and creating a new culture in its place. "I was already quite sure this company had to change because of what was happening in the industry," says Diess. "But the diesel crisis has accelerated our change process quite considerably."

LEFT: KEYSTONE-FRANCE/GAMMA-KEYSTONE VIA GETTY IMAGES

BIGGER, BUT TRAILING THE PACK

➤ VW sold more vehicles last year, 10.8 million, than any other automaker and trailed only Toyota in revenue. But its stock has lagged.

VOLKSWAGEN GROUP VEHICLE SALES



SOURCE: VOLKSWAGEN



V

OLKSWAGEN'S initial response to Dieselgate was not so urgent or inspired. On Sept. 18, 2015, EPA officials called a press conference in

Washington, without alerting Volkswagen beforehand, and announced one of the biggest corporate frauds of recent times. Executives in Wolfsburg, 4,000 miles away, were caught off guard. They dispatched longtime CEO Martin Winterkorn to deliver a stilted half-apology on television, in German, in which he blamed “the mistakes of only a few” and downplayed the company’s responsibility. Winterkorn resigned days later, and in May of this year, he was

indicted in Detroit for having misled the U.S. over the cheating.

Diess, who already sat on Volkswagen’s board of management, was relaxing on vacation in Spain when the scandal broke, and he waited a full day before flying home. “At that time, I did not have any idea of how it was going to end up, or how much it would cost,” he says. “No, no.”

Amazingly, the cheating was uncovered by sheer happenstance, when a group of graduate students from West Virginia University rode Volkswagen vehicles around Los Angeles, hopping on and off freeways, and recorded emissions on gear they had rigged up in the back. They had no expectation of finding wrongdoing; it was a simple study project. But Volkswagen’s engineers

80 YEARS OF DAS AUTO

Above left: Beetles on the assembly line at VW’s Wolfsburg plant in 1953. Above right: A Volkswagen getting a test-drive on a track across the river from the 80-year-old Wolfsburg facility.

TOP AUTOMAKERS, RANKED BY SALES

TOYOTA	\$265.2 BILLION
VOLKSWAGEN	260.0
DAIMLER	185.2
GM	157.3
FORD	156.8
HONDA	138.6
SAIC	128.8
FIAT CHRYSLER*	125.1
BMW	111.2
NISSAN	107.9

*PART OF EXOR GROUP, NOT INCLUDED IN GLOBAL 500

SOURCE: COMPANY FILINGS

CHANGE IN VOLKSWAGEN STOCK PRICE SINCE START OF 2009



SOURCE: BLOOMBERG



**DIESELGATE
"WILL STAY
WITH THE
HISTORY OF
THIS COMPANY
FOREVER.
IT HAS A
MAGNITUDE
THAT WE HAVE
NOT SEEN
BEFORE."**

HILTRUD WERNER
Volkswagen exec in
charge of integrity
and legal affairs



had devised the scheme to display good emission levels only during controlled tests, of the kind that most states in the U.S. require. And so the students stumbled on an international scandal.

When they brought their results to California and U.S. officials, there was a stunned response. Volkswagen, whose business depended heavily on diesel cars, had spent years boasting to Americans about its eco-friendly new "clean diesel." In fact, it was more like selling snake oil. U.S. investigators revealed that managers in Wolfsburg had sought to stifle internal questions about emissions cheating, and that engineers who raised concerns were told to keep quiet and carry on. When U.S. authorities confronted Volkswagen with the data, it denied all knowledge.

To auto executives outside the hermetic world of Wolfsburg, the implications were clear. A global giant of their industry had not only acted criminally but also appeared blithely unconcerned about the consequences.

"I thought, Jesus Christ, how naive are these guys?" says Thomas Sedran, now Volkswagen's senior vice president for group strategy, recalling the moment the scandal broke. Sedran was managing director of Chevrolet Europe at the time and was recruited by Volkswagen in late 2015 to help reshape the company in the wake of Dieselgate. "Why did they think it was okay to cheat and believe they

would not get caught?" he says, sitting in his Wolfsburg office late one afternoon, still flummoxed by the scandal. "And even when they were caught, they still lied about it. I don't get it."

The answer to Sedran's question lay not in corporate greed nor in misunderstanding foreign laws. According to many insiders and outsiders, the problem was Volkswagen's unusually insular and rigidly hierarchical culture, which had been bred over the decades within Wolfsburg, where about 75,000 people—more than half the town's residents—work for the company.

Volkswagen had for decades been dominated by leaders whose word was unquestioned and whose imperious style held huge political sway in Germany. Chancellor Angela Merkel has more than once intervened on Volkswagen's behalf to dilute regulations—including EU rules that might have reined in diesel's nitrogen oxide emissions, as they do in the U.S.

Wolfsburg's very existence is owed to politics, and VW dominates the landscape. The Nazis created the town as an ideal factory site, since it sat in central Germany with plentiful labor. Today, the factory dominates the town, with traffic jams timed to shift changes on the assembly line. A first-division Volkswagen soccer (or *Fussball*, in German) team plays in the company-built stadium. The Autostadt—a showcase and theme park of cars, with rotating exhibits, which Volks-



AUTOMATIC FOR THE PEOPLE
The Nazis chose Wolfsburg for Volkswagen's headquarters in the 1930s because of its proximity to a plentiful labor force. Today, half of Wolfsburg's population works for VW, but the assembly line is increasingly automated.

wagen opened in 2000—runs year-round cultural programs, including concerts and an international circus festival in the summer.

In interviews, experts and company insiders draw a direct connection between the scandal and Volkswagen's rigid culture, in which mid-level managers and low-level workers were reluctant to question their superiors' decisions, including the decision to cheat on emissions tests.

"In meetings, everyone is holding back and waiting for the boss to say something," says Werner, adding that the tendency is found in other German companies too. At Volkswagen, she says, the lack of diversity, including in gender, reinforces that tendency. When I ask her what it is like to be the only woman on the management board, she likens it to being in a foreign country. "When you go abroad, you have to learn the language of the locals to survive," she says. "So I have to learn the language of the men to survive." That, she says, includes occasionally pushing in meetings for her views to be taken seriously. "I have to make it clear to them sometimes that I have also worked for 27 years in the industry," she says. "I have fuel in my blood, just like they do."

The structure of Volkswagen's supervisory board, which oversees the board of managers, has remained unchanged since the 1960s. Top local officials from

the Lower Saxony government (where Wolfsburg is situated) hold a 20% share, with veto power over many strategic decisions. There is also permanent representation from the Piëch and Porsche families, who founded the company, and half the members are from workers' councils; under German law, company boards must include worker representation.

Industry analysts believe the unchanged board structure is one explanation for Volkswagen's giant workforce of 640,000 people—about one-third bigger than Toyota's for almost equal output. After long negotiations with management, in 2016 Volkswagen's labor representatives and local politicians finally agreed to allow the company to cut 30,000 jobs worldwide. "When you analyze it, it is extremely inefficient," says Arndt Ellinghorst, head of global automotive research at Evercore ISI in London, who was a management trainee at Volkswagen headquarters in the early 2000s. "It should be far better run." In a research report to investors in May, Ellinghorst wrote that "VW's outdated corporate structure remains a major burden to shareholder sentiment."

That structure is also one key factor in what went wrong at Volkswagen, say those who have examined the Dieselgate affair. "What occurred was the combination of some bad people and a bad culture," says Larry D. Thompson, a former deputy U.S. attorney general, whom the Department of Justice appointed in April 2017 as the independent monitor of Volkswagen. As part of the company's legal settlement with the U.S. government, Thompson's team of about 60 people now scrutinizes the internal reforms in Wolfsburg. The company culture, he says, "discouraged professional managers from speaking honestly about problems they knew about or suspected were going on."

Overhauling decades of ingrained habits will be a long process. "We need a change in the mindset," Diess says. "Many people were focused on what was said by the top five people or probably by the CEO himself. To convince them that they have to take risks, responsibility, ownership—that is not easy."

Still, analysts think Diess might have the best shot of anyone at

changing Volkswagen, especially considering that compared with company lifers, he is an outsider. "He is unbelievably important for Volkswagen," Ellinghorst says. "It is a huge opportunity. The trust is he will drive change in a very forceful manner." José Asumendi, auto equity researcher at J.P. Morgan in London, agrees, calling Diess "the best CEO of the auto industry in Germany."

There are signs everywhere that changes are underway. Some are subtle, like colleagues beginning to address each other with the German informal pronoun *du* rather than the formal *Sie*. Recently, Volkswagen issued its first companywide code of conduct, with guidelines that include human rights, gender equality, and environmental protection.

Werner, as the integrity chief, has launched a campaign to spread the word about new values—including the ability to speak openly about problems. One morning in late June, I hopped aboard her "integrity bus," a bright-painted motor coach she fills once a month with invited employees, for an hour-long drive around the Wolfsburg campus. The idea is for them to air grievances and anxieties on neutral ground, with a member of senior management—a relatively new concept at Volkswagen. On this morning, the bus is filled with technical engineers, whom Werner says have been "stigmatized" among colleagues for being responsible for Dieselgate. "They cannot go into the canteen without people feeling they were the ones who made us pay 25 billion [euros]," she says. "That is not easy to deal with." On board, one man says he is troubled by the strong criticisms he hears about the company. Werner tells him the company is changing and is at "a point of no return," but she also tells him "it will take a life cycle to have sustainable change."

However long the transformation takes, Diess is convinced that it is crucial for Volkswagen to keep growing through the industry's tumultuous next decade. "It will be very difficult to survive with this kind of company culture, relying very heavily on headquarters, with central decisions," he says. "You ask many times the same questions. You get slow."



I N SMALL-TOWN WOLFSBURG, Volkswagen's hierarchical culture is shifting, albeit slowly. In the hands of Diess—lanky and chatty, with a kinetic energy—

the CEO's buzzwords like "sharing" and "cooperation" now creep into conversations about how life is changing in the company.

As part of a major reorganization, Diess has grouped the labyrinthine company into four categories: volume, premium, luxury (Volkswagen owns high-end Bentley and Bugatti), and trucks and buses, which will be spun off as a separate entity, with an IPO perhaps as soon as next year. Each of the 12 brands is now expected to pool ideas within its group, making a broad range of decisions rather than competing among themselves for the boss's approval. Not only will the new organization change "the mindset," to use Diess's term, but also it is aimed at cutting billions in expenses.

That leaner operation is critical if Volkswagen has a shot at succeeding in its most radical transformation ever: becoming a major global player in electric cars.

The scale of the electric plan is dizzying—and won't come cheap. In May, Diess told shareholders that the company intends to invest nearly \$40 billion into producing electric cars within the next four years. By 2025, Volkswagen aims to have one-quarter of the vehicles it produces be electric—millions of cars a year—and to have a 10% to 15% share of the electric-car market globally. That will require converting or expanding 16 factories around the world within four years, including one in the U.S. and five in China. Eichhorn, the CTO, says Volkswagen will also need at least six new battery factories within a decade, each of them the size of Elon Musk's 5.5-million-square-foot Gigafactory facility in Nevada, which produces batteries for Tesla. "We want to be the technology leader in this, just as we were the technology leader in the combustion engine," Eichhorn says.

In reality, Volkswagen is racing to make up for lost time. It only launched its electric strategy in 2016 in the disastrous aftermath of Dieselgate—13 years after

"WE TALK ABOUT FUTURES, PLURAL. IN THE FAR FUTURE, MOST PEOPLE WILL NOT OWN A CAR."

PETER WOUDA
Design director
at VW's Future
Center Europe



PICTURING THE FUTURE
Designers in VW's Future Center Europe research and development lab in Potsdam visualize concepts with the help of virtual reality.

Musk founded Tesla. "Without the diesel crisis, Volkswagen would not have an electric platform," Sedran says. "Just on the financials, it is not a good idea. We would have realized too late, blinded by our financial success."

The thinking has changed drastically. While Volkswagen is late, Diess believes that with enough investment, VW can leverage its decades of producing fuel-burning cars to overtake its competitors. "We have the dealerships, the markets," he says. In comparison to Tesla, he says, "we want to make e-cars for millions, not just for millionaires. Ramping up a car from 10,000 to a million? We can do that in every country in the world."

Among Volkswagen's new projects are ideas the board once rejected, like an electric car-sharing scheme the company is launching next year in German cities before going global in 2020. And when I arrived in Wolfsburg in late June, managers were buzzing with excitement over the Broadmoor Pikes Peak rally that had taken place in the Colorado Rockies days before, where Volkswagen's custom-made electric car, called I.D. R Pikes Peak, won the race in under eight minutes. "There has been big skepticism about EVs—and we won!" coed Michael Jost, chief strategy officer for the VW brand.

Having been caught behind the curve, the company is now focusing on what comes after electric vehicles: driverless

cars. Diess believes autonomous vehicles are probably only a few years away, perhaps beginning in newly built cities in India or China.

Concepts that seem fanciful are, in fact, already in the design phase. In an exhibition hall in the Autostadt, a scale model of a futuristic city shows mobile robots that zoom around parking lots, recharging cars while their owners are running errands or in the office—an idea that Volkswagen is already working on with German robot manufacturer KUKA. "It is a totally new world for us," Diess says. "The question is, Can we adopt the new technology fast enough, becoming more of a software company?"

These whiz-bang inventions—costly, and for now not Volkswagen's core business—have injected optimism after three angst-filled years. "We have a lot to show you," Axel Heinrich, executive director of Volkswagen's research department, tells me excitedly, as he leads me through the building one afternoon, introducing me to some of Volkswagen's 600 scientists and engineers. Among their inventions are car-seat leather made from discarded banana leaves and mushroom roots rather than from animals, and digital "empathic assistants" that fit onto the dashboard and are, say the researchers, capable of conducting complex two-way conversations while you drive.

In Potsdam, west of Berlin, the Volkswagen Future Center Europe (there are two others, in Beijing and Silicon Valley) turns out full-size Styrofoam models of future cars, including adapted versions of SEDRIC, the company's self-driving vehicle. "We talk about futures, plural," says Peter Wouda, a car designer who runs the center, as he shows me the new virtual reality platform they have built, allowing them to tweak new designs within seconds. In the "far future," Wouda says, "most people will not own a car."

By the time that "far future" arrives, Diess hopes Volkswagen will be as much a tech company as an automaker. The work of transforming the company has only just begun—and is unfolding as it tries to regain its credibility after Dieselgate. "We have lost a lot of confidence of our customers," Diess says. "I think it will take time." In the meantime, the new VW is speeding toward that future as fast as it can. ■

THE LIST

Change is everywhere in this year's Global 500—except at the very top. **Walmart**, with \$500 billion in sales, ranks No. 1 for the fifth straight year on *Fortune's* annual list of the world's biggest companies ranked by revenue. **Apple** slipped out of the top 10 but remains hugely profitable, while **Amazon**

RANK 2017	2016	Company	Country	REVENUES		PROFITS			ASSETS		EMPLOYEES	
				\$ millions	% change from 2016	\$ millions	Rank	% change from 2016	\$ millions	Rank	Number	Rank
1	1	WALMART ^{1,2}	U.S.	500,343.0	3.0	9,862.0	37	(27.7)	204,522.0	124	2,300,000	1
2	2	STATE GRID ⁶	CHINA	348,903.1	10.7	9,533.4	43	[0.4]	585,277.6	61	913,546	4
3	3	SINOPEC GROUP ⁶	CHINA	326,953.0 ⁶	22.2	1,537.8	300	22.2	346,544.5	87	667,793	6
4	4	CHINA NATIONAL PETROLEUM ⁶	CHINA	326,007.6 ⁶	24.2	[690.5]	477	[137.0]	629,410.5	57	1,470,193	2
5	7	ROYAL DUTCH SHELL ^{1,3}	NETHERLANDS	311,870.0 ⁶	29.9	12,977.0	23	183.7	407,097.0	79	84,000	267
6	5	TOYOTA MOTOR ^{6,9}	JAPAN	265,172.0	4.1	22,510.1	13	33.2	473,133.2	71	369,124	30
7	6	VOLKSWAGEN [†]	GERMANY	260,028.4	8.2	13,107.3	22	120.8	506,956.1	67	642,292	7
8	12	BP [†]	BRITAIN	244,582.0 ⁶	31.1	3,389.0	165	2,847.0	276,515.0	98	74,000	295
9	10	EXXON MOBIL	U.S.	244,363.0 ⁶	17.4	19,710.0	17	151.4	348,891.0	86	71,200	305
10	8	BERKSHIRE HATHAWAY	U.S.	242,137.0	8.3	44,940.0	3	86.7	702,095.0	50	377,000	27
11	9	APPLE ⁵	U.S.	229,234.0	6.3	48,351.0	1	5.8	375,319.0	82	123,000	185
12	15	SAMSUNG ELECTRONICS [†]	SOUTH KOREA	211,940.2	21.8	36,575.4	5	89.3	281,905.9	97	320,671	40
13	11	MCKESSON [†]	U.S.	208,357.0	4.9	67.0	448	(98.7)	60,381.0	295	68,000	311
14	16	GLENCORE ^{1,6}	SWITZERLAND	205,476.0	18.2	5,777.0	94	318.9	135,593.0	169	82,681	271
15	13	UNITEDHEALTH GROUP	U.S.	201,159.0	8.8	10,558.0	33	50.5	139,058.0	164	260,000	64
16	17	DAIMLER [†]	GERMANY	185,235.4	9.3	11,863.9	27	25.8	306,922.4	92	289,321	54
17	14	CVS HEALTH	U.S.	184,765.0	4.1	6,622.0	84	24.5	95,131.0	220	203,000	92
18	26	AMAZON.COM ⁷	U.S.	177,866.0	30.8	3,033.0	183	27.9	131,310.0	177	566,000	10
19	20	EXOR GROUP [†]	NETHERLANDS	161,676.5	4.4	1,569.1	294	140.9	196,655.9	127	307,637	47
20	19	AT&T ⁶	U.S.	160,546.0	[2.0]	29,450.0	8	127.0	444,097.0	74	254,000	68
21	18	GENERAL MOTORS	U.S.	157,311.0 [†]	(5.5)	[3,864.0]	493	[141.0]	212,482.0	120	180,000	113
22	21	FORD MOTOR	U.S.	156,776.0	3.3	7,602.0	69	65.4	257,808.0	105	202,000	93
23	24	CHINA STATE CONSTRUCTION ENGINEERING ⁶	CHINA	156,070.6	8.0	2,675.2	203	7.3	239,680.9	113	270,467	60
24	27	HON HAI PRECISION INDUSTRY [†]	TAIWAN	154,699.2	14.5	4,559.9	120	[1.1]	114,528.3	196	803,126	5
25	23	AMERISOURCEBERGEN ⁵	U.S.	153,143.8	4.3	364.5	414	[74.5]	35,316.5	399	19,500	455
26	22	INDUSTRIAL & COMMERCIAL BANK OF CHINA ^{1,6}	CHINA	153,021.3	3.6	42,323.7	4	1.0	4,005,995.5	1	453,048	15
27	25	AXA [†]	FRANCE	149,460.9	4.0	6,998.9	78	8.6	1,044,822.3	27	95,728	243
28	30	TOTAL [†]	FRANCE	149,099.0 ⁶	16.6	8,631.0	56	39.3	242,631.0	111	98,277	236
29	39	PING AN INSURANCE [†]	CHINA	144,196.8	23.7	13,181.4	21	40.3	997,093.8	30	342,550	36
30	29	HONDA MOTOR ^{1,9}	JAPAN	138,645.8	7.3	9,561.3	42	68.0	181,972.8	137	215,638	83
31	28	CHINA CONSTRUCTION BANK ^{1,6}	CHINA	138,594.1	2.6	35,845.2	6	2.9	3,397,479.0	2	370,415	29
32	54	TRAFIGURA GROUP ^{1,5}	SINGAPORE	136,420.7	39.1	847.7	369	12.9	48,807.6	336	3,935	496
33	45	CHEVRON	U.S.	134,533.0 ⁶	25.1	9,195.0	48	-	253,806.0	107	51,900	353
34	35	CARDINAL HEALTH ⁹	U.S.	129,976.0	6.9	1,288.0	324	(9.7)	40,112.0	376	40,400	391
35	36	COSTCO WHOLESALE ¹⁰	U.S.	129,025.0	8.7	2,679.0	202	14.0	36,347.0	396	182,000	110
36	41	SAIC MOTOR ⁶	CHINA	128,819.3	13.1	5,091.3	107	5.7	111,107.7	203	148,767	143
37	32	VERIZON COMMUNICATIONS	U.S.	126,034.0	0.0	30,101.0	7	129.3	257,143.0	106	155,400	135
38	34	ALLIANZ [†]	GERMANY	123,531.6	1.1	7,668.4	68	0.7	1,082,252.6	26	140,553	154
39	40	KROGER ²	U.S.	122,662.0	6.4	1,907.0	266	(3.4)	37,197.0	393	449,000	17
40	38	AGRICULTURAL BANK OF CHINA ^{1,6}	CHINA	122,365.5	4.3	28,550.4	9	3.1	3,233,013.2	4	491,578	11
41	31	GENERAL ELECTRIC	U.S.	122,274.0 [†]	(3.5)	(5,786.0)	496	[165.5]	377,945.0	81	313,000	43
42	51	CHINA LIFE INSURANCE ⁹	CHINA	120,224.1	14.7	266.5	427	64.1	552,760.6	65	170,517	122
43	37	WALGREENS BOOTS ALLIANCE ¹⁰	U.S.	118,214.0	0.7	4,078.0	133	(2.3)	66,009.0	281	290,000	53
44	43	BNP PARIBAS [†]	FRANCE	117,374.7	7.7	8,746.1	54	2.7	2,353,808.8	10	189,509	105
45	33	JAPAN POST HOLDINGS ^{9,9}	JAPAN	116,616.0	[5.2]	4,157.5	130	-	2,733,378.7	7	245,863	72
46	42	BANK OF CHINA ^{1,6}	CHINA	115,422.7	1.5	25,509.2	10	3.0	2,989,469.3	5	311,133	44
47	48	JPMORGAN CHASE & CO.	U.S.	113,899.0	8.0	24,441.0	11	[1.2]	2,533,600.0	8	252,539	69
48	46	FANNIE MAE ¹¹	U.S.	112,394.0	4.9	2,463.0	214	[80.0]	3,345,529.0	3	7,200	488
49	63	GAZPROM ^{1,9}	RUSSIA	111,982.6 ⁶	22.5	12,249.9	26	[13.9]	316,870.9	91	469,600	13
50	56	PRUDENTIAL [†]	BRITAIN	111,458.0	14.9	3,076.1	181	18.6	668,029.5	55	24,711	442

DEFINITIONS, EXPLANATIONS, AND FOOTNOTES ARE ON PAGE F12.

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charged into the top 20 for the first time. Chinese tech giants **Alibaba** (up 162 spots from last year to No. 300) and **Tencent** (up 147 to No. 331) rocketed higher. German sportswear maker **Adidas** (No. 480) is making its debut on the list, but fast-food king **McDonald's** tumbled off.

RANK 2017	2016	Company	Country	REVENUES		PROFITS		ASSETS		EMPLOYEES		
				\$ millions	% change from 2016	\$ millions	Rank	% change from 2016	\$ millions	Rank	Number	Rank
51	52	BMW GROUP †	GERMANY	111,231.4	6.8	9,716.6	38	28.0	232,328.3	115	129,932	172
52	65	ALPHABET	U.S.	110,855.0	22.8	12,662.0	25	(35.0)	197,295.0	126	80,110	260
53	47	CHINA MOBILE COMMUNICATIONS †	CHINA	110,158.5	2.8	10,932.0	30	13.7	264,342.6	103	467,532	14
54	44	NISSAN MOTOR †	JAPAN	107,868.2	[0.3]	6,741.3	81	10.1	176,308.7	144	148,872	142
55	50	NIPPON TELEGRAPH & TELEPHONE †	JAPAN	106,500.1	1.3	8,210.7	61	11.2	203,853.8	125	282,533	55
56	55	CHINA RAILWAY ENGINEERING GROUP †	CHINA	102,767.1	6.0	1,169.8	339	26.6	130,212.2	179	290,535	52
57	59	HOME DEPOT †	U.S.	100,904.0	6.7	8,630.0	57	8.5	44,529.0	354	413,000	21
58	58	CHINA RAILWAY CONSTRUCTION †	CHINA	100,854.8	6.3	1,308.8	321	9.8	126,891.5	182	364,964	33
59	57	ASSICURAZIONI GENERALI †	ITALY	100,552.1	5.6	2,378.4	227	3.4	644,908.7	56	71,327	304
60	62	BANK OF AMERICA CORP.	U.S.	100,264.0	7.0	18,232.0	18	1.8	2,281,234.0	11	209,376	87
61	53	EXPRESS SCRIPTS HOLDING	U.S.	100,064.6	[0.2]	4,517.4	123	32.7	54,255.8	313	26,600	436
62	61	WELLS FARGO	U.S.	97,741.0	3.8	22,183.0	14	1.1	1,951,757.0	13	262,700	63
63	102	LUKOIL †	RUSSIA	93,896.6	32.4	7,182.3	76	132.4	90,787.5	225	103,600	218
64	60	BOEING	U.S.	93,392.0	[1.2]	8,197.0	62	67.5	92,333.0	223	140,800	153
65	68	DONGFENG MOTOR †	CHINA	93,293.8	8.2	1,400.0	312	[1.1]	71,384.2	266	180,433	112
66	66	SIEMENS †	GERMANY	91,584.7	3.6	6,667.4	82	10.2	158,160.8	153	372,000	28
67	96	PHILLIPS 66	U.S.	91,568.0	26.5	5,106.0	106	228.4	54,371.0	312	14,600	466
68	67	CARREFOUR †	FRANCE	91,276.3	4.8	[598.6]	475	[172.6]	57,412.3	303	378,923	26
69	64	NESTLÉ †	SWITZERLAND	91,221.7	0.4	7,297.4	74	[15.7]	133,819.2	171	323,000	39
70	70	ANTHEM	U.S.	90,039.4	6.1	3,842.8	145	55.6	70,540.0	270	56,000	344
71	69	MICROSOFT †	U.S.	89,950.0	5.4	21,204.0	16	26.2	241,086.0	112	124,000	181
72	83	HUAWEI INVESTMENT & HOLDING †	CHINA	89,311.4	13.8	7,020.8	77	25.8	77,583.7	250	180,000	113
73	75	PETROBRAS †	BRAZIL	88,827.0	9.1	[91.0]	464	-	251,366.0	108	62,703	326
74	106	VALERO ENERGY	U.S.	88,407.0	26.0	4,065.0	134	77.6	50,158.0	331	10,015	483
75	76	BOSCH GROUP †	GERMANY	87,997.2	8.8	3,103.2	179	44.0	98,306.9	216	402,166	24
76	74	CITIGROUP	U.S.	87,966.0	6.8	[6,798.0]	498	[145.6]	1,842,465.0	17	209,000	88
77	73	BANCO SANTANDER †	SPAIN	87,400.9	5.6	7,461.0	72	8.8	1,734,275.9	19	198,960	98
78	78	HYUNDAI MOTOR †	SOUTH KOREA	85,259.0	5.6	3,567.6	156	[23.4]	166,479.3	150	122,217	187
79	71	HITACHI †	JAPAN	84,558.7	0.0	3,276.2	169	53.5	95,049.4	221	307,275	48
80	79	COMCAST	U.S.	84,526.0	5.1	22,714.0	12	161.2	186,949.0	132	164,000	128
81	77	DEUTSCHE TELEKOM †	GERMANY	84,481.4	4.5	3,901.3	142	31.9	169,709.4	148	216,000	82
82	80	CRÉDIT AGRICOLE †	FRANCE	84,222.2	4.9	4,113.2	132	5.1	1,861,531.0	16	73,707	298
83	84	ENEL †	ITALY	84,134.3	7.8	4,259.7	128	49.9	186,888.8	133	62,900	325
84	95	SK HOLDINGS †	SOUTH KOREA	83,543.8	15.1	1,483.9	305	124.9	102,556.9	213	93,000	250
85	72	SOFTBANK GROUP †	JAPAN	82,664.7	[0.3]	9,377.5	46	[28.8]	293,242.4	95	74,952	291
86	86	CHINA RESOURCES †	CHINA	82,184.1	8.5	3,151.9	177	22.2	186,720.4	134	423,169	20
87	115	CHINA NATIONAL OFFSHORE OIL †	CHINA	81,482.2	23.7	3,018.5	184	72.2	173,408.3	145	97,986	238
88	91	UNIPER †	GERMANY	81,427.8	9.4	[739.5]	482	-	51,826.4	319	12,575	477
89	132	ENI †	ITALY	80,006.4	27.6	3,803.2	148	-	138,001.9	167	32,934	414
90	88	HSBC HOLDINGS †	BRITAIN	79,637.0	5.7	10,798.0	31	335.6	2,521,771.0	9	228,687	77
91	103	CHINA COMMUNICATIONS CONSTRUCTION †	CHINA	79,416.9	12.2	1,544.7	299	7.9	183,197.5	136	161,434	129
92	81	INTERNATIONAL BUSINESS MACHINES	U.S.	79,139.0	[1.0]	5,753.0	96	[51.5]	125,356.0	184	397,800	25
93	124	DELL TECHNOLOGIES †	U.S.	78,660.0	21.4	[3,728.0]	492	-	122,281.0	188	145,000	147
94	82	ELECTRICITÉ DE FRANCE †	FRANCE	78,490.3	[0.3]	3,576.7	155	13.4	337,118.2	89	151,073	139
95	85	STATE FARM INSURANCE COS.	U.S.	78,330.8	2.9	2,206.5	236	529.9	272,345.2	100	65,664	317
96	89	PACIFIC CONSTRUCTION GROUP	CHINA	77,204.5	3.5	3,143.9	178	[0.8]	56,577.2	305	365,425	32
97	105	SONY †	JAPAN	77,115.8	9.9	4,429.8	125	554.9	179,305.4	141	117,300	199
98	143	SINOCHEM GROUP †	CHINA	76,764.8	28.9	753.3	377	60.9	64,065.6	286	63,799	320
99	127	JXTG HOLDINGS †	JAPAN	76,629.0	20.4	3,266.6	170	121.1	79,540.6	248	39,784	393
100	97	JOHNSON & JOHNSON	U.S.	76,450.0	6.3	1,300.0	323	[92.1]	157,303.0	154	134,000	163

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RANK 2017	2016	Company	Country	REVENUES		PROFITS			ASSETS		EMPLOYEES	
				\$ millions	% change from 2016	\$ millions	Rank	% change from 2016	\$ millions	Rank	Number	Rank
101	276	CHINA ENERGY INVESTMENT ^{0,13}	CHINA	75,522.4	102.4	2,494.9	213	30.2	274,440.5	99	313,264	42
102	92	TESCO ^{1,14}	BRITAIN	75,405.4	1.4	1,581.8	293	-	61,801.9	292	327,916	38
103	87	AEON ¹⁴	JAPAN	75,338.8	(0.6)	220.2	430	112.0	88,600.2	227	279,625	56
104	93	ENGIE ¹	FRANCE	75,278.8 ¹	2.2	1,604.0	288	-	180,513.9	139	155,128	136
105	94	AIRBUS GROUP ¹	NETHERLANDS	75,260.8	2.2	3,238.5	171	194.3	136,812.0	168	129,442	173
106	118	FREDDIE MAC ¹¹	U.S.	74,676.0	13.7	5,625.0	98	(28.0)	2,049,776.0	12	6,165	490
107	152	PEMEX ^{1,6}	MEXICO	73,850.4	27.8	(14,846.1)	499	-	108,978.6	209	131,590	166
108	140	PEUGEOT ¹	FRANCE	73,505.7	23.0	2,174.4	241	13.7	69,050.2	273	177,757	116
109	120	CHINA MINMETALS ⁶	CHINA	72,997.4	11.4	(210.7)	470	-	131,337.8	176	203,786	91
110	100	CHINA SOUTHERN POWER GRID ⁶	CHINA	72,787.3	2.2	1,937.9	261	(16.8)	113,886.2	199	299,842	50
111	183	AMER INTERNATIONAL GROUP	CHINA	72,766.2	46.5	1,545.8	298	28.8	22,046.6	452	17,886	458
112	126	BASF ¹	GERMANY	72,677.2	14.2	6,851.2	79	52.7	94,582.1	222	111,112	205
113	119	CHINA POST GROUP ⁶	CHINA	72,197.3	10.0	4,960.7	109	(0.4)	1,422,554.9	23	948,239	3
114	110	PANASONIC ^{1,6}	JAPAN	72,045.0	6.3	2,130.4	250	54.6	59,166.3	298	274,143	58
115	158	ROSNEFT OIL ^{1,6}	RUSSIA	72,027.9 ⁶	27.4	3,807.2	147	40.7	212,425.5	121	318,000	41
116	107	TARGET ²	U.S.	71,879.0	3.4	2,934.0	188	7.2	38,999.0	381	345,000	35
117	114	PEOPLE'S INSURANCE CO. OF CHINA ^{1,6}	CHINA	71,579.1	7.3	2,382.0	226	11.1	151,705.5	157	215,362	84
118	165	ROYAL AHOLD DELHAIZE ¹	NETHERLANDS	70,890.6	29.0	2,048.2	252	123.1	40,671.2	373	224,000	79
119	117	DEUTSCHE POST DHL GROUP ¹	GERMANY	70,544.5	7.2	3,058.1	182	4.8	46,436.1	344	472,208	12
120	109	MUNICH RE GROUP ¹	GERMANY	70,143.3	2.1	422.7	404	(85.2)	319,070.6	90	42,410	386
121	108	SOCIÉTÉ GÉNÉRALE ¹	FRANCE	69,948.2	0.9	3,163.0	175	(26.2)	1,531,133.5	21	153,168	137
122	136	COFCO ⁶	CHINA	69,669.1	13.7	393.5	411	92.5	83,586.6	240	124,266	180
123	99	U.S. POSTAL SERVICE ^{6,5}	U.S.	69,636.0	(2.6)	(2,742.0)	491	-	27,394.0	436	573,614	9
124	137	BEIJING AUTOMOTIVE GROUP ⁶	CHINA	69,591.3	13.8	1,554.5	295	23.3	67,030.5	278	128,735	174
125	125	CHINA FAW GROUP ⁶	CHINA	69,524.4	7.3	2,855.8	194	18.4	67,073.7	277	123,658	182
126	111	NIPPON LIFE INSURANCE ⁹	JAPAN	68,684.2	1.9	2,201.6	239	(21.0)	699,638.1	51	86,394	262
127	156	ARCELORMITTAL ¹	LUXEMBOURG	68,679.0	20.9	4,568.0	119	156.8	85,297.0	236	197,108	101
128	122	LOWE'S ²	U.S.	68,619.0	5.5	3,447.0	158	11.4	35,291.0	400	255,000	67
129	145	MITSUBISHI ^{1,4}	JAPAN	68,301.4	15.2	5,056.0	108	24.4	150,822.8	158	77,476	286
130	116	MARUBENI ^{1,6}	JAPAN	68,057.2	3.4	1,906.8	267	33.0	64,677.1	285	45,239	375
131	160	MARATHON PETROLEUM	U.S.	67,610.0 ⁶	21.0	3,492.0	162	192.3	49,047.0	334	43,800	381
132	129	TEWOOD GROUP ⁶	CHINA	66,577.4	5.1	121.9	443	(14.0)	38,257.0	387	17,105	460
133	113	ITAÚ UNIBANCO HOLDING ¹	BRAZIL	66,286.6	(0.9)	7,488.3	70	12.3	432,701.8	75	99,332	230
134	157	RENAULT ¹	FRANCE	66,246.5	16.9	5,764.6	95	52.5	132,016.1	175	181,344	111
135	98	PROCTER & GAMBLE ⁹	U.S.	66,217.0 ¹	(7.7)	15,326.0	20	45.9	120,406.0	190	95,000	244
136	128	METLIFE	U.S.	66,153.0 ¹	4.2	4,010.0	139	401.3	719,892.0	47	49,000	363
137	168	INDIAN OIL ^{6,4}	INDIA	65,915.8 ⁶	23.1	3,442.2	160	16.3	45,337.5	349	35,149	401
138	138	UNITED PARCEL SERVICE	U.S.	65,872.0	8.2	4,910.0	111	43.1	45,403.0	348	346,415	34
139	147	AEGON ¹	NETHERLANDS	65,437.1	11.3	2,783.1	198	475.9	475,411.9	70	28,318	430
140	135	CHINA NORTH INDUSTRIES GROUP ⁶	CHINA	64,646.3	5.4	857.7	367	0.5	58,044.3	300	226,338	78
141	133	CHINA TELECOMMUNICATIONS ⁶	CHINA	63,974.0	2.5	1,819.9	273	3.1	126,726.5	183	412,868	22
142	112	ZURICH INSURANCE GROUP ¹	SWITZERLAND	63,961.0	(4.9)	3,004.0	185	(6.4)	422,065.0	76	51,633	355
143	90	AVIVA ¹	BRITAIN	63,933.6	(14.3)	1,927.6	262	103.1	598,708.4	60	30,021	425
144	131	PEPSICO	U.S.	63,525.0	1.2	4,857.0	116	(23.3)	79,804.0	247	263,000	62
145	142	DAI-ICHI LIFE HOLDINGS ⁴	JAPAN	63,521.6	6.6	3,284.7	168	53.9	504,119.5	68	62,943	324
146	144	INTEL	U.S.	62,761.0	5.7	9,601.0	41	(6.9)	123,249.0	166	102,700	219
147	196	DOWDUPONT ¹⁵	U.S.	62,683.0 ¹	30.2	1,460.0	309	(66.2)	192,164.0	129	98,000	237
148	203	RELIANCE INDUSTRIES ⁹	INDIA	62,303.6 ⁶	32.7	5,586.3	99	25.5	125,176.2	185	187,729	106
149	172	CITIC GROUP ⁶	CHINA	61,316.2	16.0	3,224.7	172	(0.4)	972,752.6	33	258,433	65
150	207	EQUINOR ^{1,6,18}	NORWAY	61,187.0 ⁶	33.4	4,590.0	118	-	111,100.0	204	20,245	450

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2016-2015

RANK 2017	2016	Company	Country	REVENUES		PROFITS			ASSETS		EMPLOYEES	
				\$ millions	% change from 2016	\$ millions	Rank	% change from 2016	\$ millions	Rank	Number	Rank
151	104	GRUPE BPCE ^{1,C}	FRANCE	61,127.8	(13.3)	3,408.7	164	(22.7)	1,512,788.2	22	104,770	216
152	134	ARCHER DANIELS MIDLAND	U.S.	60,828.0	(2.4)	1,595.0	290	24.7	39,963.0	378	31,300	418
153	150	UNILEVER [†]	BRITAIN/NETH.	60,548.4	3.9	6,823.0	80	19.0	72,388.3	261	160,566	131
154	130	AETNA	U.S.	60,535.0	(4.1)	1,904.0	268	(16.2)	55,151.0	307	47,950	368
155	180	FEDEX ^{1,7}	U.S.	60,319.0	19.8	2,997.0	186	64.7	48,552.0	337	404,336	23
156	146	AUCHAN HOLDING [†]	FRANCE	60,027.6 [†]	2.0	310.0	425	(52.5)	42,801.4	364	341,349	37
157	141	ALBERTSONS COS. ^{1,4}	U.S.	59,924.6	0.4	46.3	453	-	21,812.3	454	275,000	57
158	149	VODAFONE GROUP ^{1,4,9}	BRITAIN	59,838.2 [†]	2.1	2,849.4	195	-	179,059.3	142	106,135	212
159	155	UNITED TECHNOLOGIES	U.S.	59,837.0	4.5	4,552.0	121	(10.0)	96,920.0	217	204,700	90
160	148	PRUDENTIAL FINANCIAL	U.S.	59,689.0	1.5	7,863.0	66	80.0	831,921.0	42	49,705	360
161	162	AVIATION INDUSTRY CORP. OF CHINA ⁹	CHINA	59,262.5	7.2	363.1	415	(21.8)	133,772.1	172	452,178	16
162	204	CHINA BAOWU STEEL GROUP ⁹	CHINA	59,255.1	27.1	21.9	455	(95.1)	114,497.4	197	176,518	118
163	192	PTT ⁹	THAILAND	58,819.0	20.7	3,984.1	140	48.6	68,517.9	274	25,275	439
164	153	TELEFÓNICA [†]	SPAIN	58,624.2	1.9	3,530.4	157	34.8	138,167.6	166	122,718	186
165	•	TOYOTA TSUSHO ^{1,4}	JAPAN	58,586.4	9.5	1,175.4	338	18.0	40,534.6	374	56,827	341
166	154	BANCO BRADESCO [†]	BRAZIL	58,061.8	1.1	5,353.7	101	4.4	369,192.6	83	86,317	264
167	211	CHEMCHINA ⁹	CHINA	57,989.4	28.4	(739.0)	481	(4,222.8)	122,068.7	189	142,083	150
168	171	BANK OF COMMUNICATIONS [†]	CHINA	57,711.4	8.9	10,390.3	34	2.7	1,387,938.3	24	94,085	247
169	169	ROCHE GROUP [†]	SWITZERLAND	56,634.2	6.0	8,770.6	51	(9.8)	78,698.6	249	93,734	248
170	206	ANHEUSER-BUSCH INBEV [†]	BELGIUM	56,444.0 ⁹	23.0	7,996.0	64	544.3	246,126.0	109	182,915	108
171	163	ING GROUP [†]	NETHERLANDS	56,347.3	1.9	6,159.1	87	12.0	1,013,302.1	28	54,302	347
172	49	LEGAL & GENERAL GROUP [†]	BRITAIN	55,999.4 [†]	(46.8)	2,434.9	219	43.4	684,172.3	53	7,570	487
173	182	LOUIS DREYFUS [†]	NETHERLANDS	55,440.0 [†]	11.2	317.0	423	3.9	20,394.0	458	17,210	459
174	179	SYSCO ⁹	U.S.	55,371.1	9.9	1,142.5	343	20.3	17,756.7	468	66,500	313
175	151	BANCO DO BRASIL ^{1,9}	BRAZIL	55,268.6	(4.9)	3,329.8	167	65.3	408,007.4	78	99,161	231
176	161	WALT DISNEY ⁵	U.S.	55,137.0	(0.9)	8,980.0	49	(4.4)	95,789.0	218	199,000	97
177	164	MITSUBISHI UFJ FINANCIAL GROUP ⁴	JAPAN	54,788.8	(0.8)	8,932.5	50	4.5	2,886,649.3	6	117,321	198
178	201	LG ELECTRONICS [†]	SOUTH KOREA	54,314.2	13.8	1,526.7	304	2,204.5	38,509.9	384	74,000	295
179	167	SEVEN & I HOLDINGS ^{1,4}	JAPAN	54,217.1	0.7	1,626.7	284	82.2	51,503.9	322	56,606	343
180	176	AMÉRICA MÓVIL [†]	MEXICO	54,006.0	3.5	1,550.2	296	234.9	75,968.6	257	191,851	104
181	261	JD.COM ^{5,18}	CHINA	53,964.5 [†]	37.8	(22.5)	461	-	28,264.0	430	157,831	134
182	190	POWERCHINA ⁹	CHINA	53,870.1	10.2	946.7	363	(10.5)	105,031.2	211	186,234	107
183	166	HUMANA	U.S.	53,767.0	(1.1)	2,448.0	217	298.7	27,178.0	438	45,900	373
184	208	POSCO [†]	SOUTH KOREA	53,244.3	16.7	2,438.3	218	108.8	74,538.1	258	32,287	417
185	159	SHANDONG WEIQIAO PIONEERING GROUP	CHINA	53,203.0	(5.3)	1,270.0	327	4.3	35,439.2	397	117,718	197
186	185	TOKYO ELECTRIC POWER ^{9,4}	JAPAN	52,809.1	6.8	2,870.9	193	134.2	118,422.1	193	41,525	389
187	173	PFIZER	U.S.	52,546.0	(0.5)	21,308.0	15	195.3	171,797.0	146	90,200	253
188	177	KOREA ELECTRIC POWER ^{1,9}	SOUTH KOREA	52,491.5	1.9	1,148.9	342	(81.1)	169,832.7	147	45,232	376
189	121	LLOYDS BANKING GROUP [†]	BRITAIN	52,422.4	(19.6)	4,901.9	112	76.0	1,098,335.1	25	67,905	312
190	194	HP ^{1,9}	U.S.	52,056.0	7.9	2,526.0	211	1.2	32,913.0	410	49,000	363
191	184	PETRONAS ^{1,5}	MALAYSIA	52,027.7 [†]	5.2	8,761.9	53	114.1	148,330.9	160	49,911	357
192	202	SUMITOMO MITSUI FINANCIAL GROUP ⁴	JAPAN	52,026.0	9.8	6,628.2	83	1.7	1,871,994.1	15	72,978	300
193	174	BAYER [†]	GERMANY	51,933.1 [†]	(1.2)	8,269.3	59	65.0	90,162.1	226	99,820	229
194	199	SINOPHARM ⁹	CHINA	51,844.4	8.4	690.1	381	38.9	43,301.2	360	110,641	207
195	198	WESFARMERS ^{1,9}	AUSTRALIA	51,599.7	7.5	2,165.9	243	631.5	30,763.0	419	223,000	80
196	197	FINATIS [†]	FRANCE	51,578.0 [†]	7.1	(66.5)	462	(109.7)	48,192.8	338	231,544	76
197	•	DIL & NATURAL GAS ^{9,4,20}	INDIA	51,219.3 [†]	156.9	3,429.3	163	12.2	70,571.0	269	42,617	385
198	228	NIPPON STEEL & SUMITOMO METAL ⁴	JAPAN	51,163.9	19.7	1,760.6	279	45.7	71,404.2	265	101,738	223
199	191	JBS [†]	BRAZIL	51,117.6	4.7	167.4	436	150.0	32,776.3	411	235,000	75
200	178	LOCKHEED MARTIN	U.S.	51,048.0	0.8	2,002.0	256	(62.2)	46,521.0	343	100,000	227

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RANK 2017	2016	Company	Country	REVENUES		PROFITS			ASSETS		EMPLOYEES	
				\$ millions	% change from 2016	\$ millions	Rank	% change from 2016	\$ millions	Rank	Number	Rank
201	200	CNP ASSURANCES [†]	FRANCE	50,737.4	6.1	1,447.9	310	9.1	508,283.1	66	5,171	493
202	238	GUANGZHOU AUTOMOBILE INDUSTRY GROUP [Ⓞ]	CHINA	50,322.7	21.1	989.2	360	79.2	39,171.0	380	84,290	266
203	186	NOVARTIS [†]	SWITZERLAND	50,135.0	1.4	7,703.0	67	14.8	133,079.0	173	121,587	190
204	215	ITOCHU ^{†,4}	JAPAN	49,732.4	11.4	3,613.3	152	11.2	81,481.6	244	117,074	200
205	232	SBERBANK ^{1,6}	RUSSIA	49,697.5	17.9	12,869.0	24	59.3	471,033.2	72	310,277	46
206	213	CONTINENTAL [†]	GERMANY	49,608.2	10.6	3,364.3	166	8.6	44,957.4	351	235,473	74
207	175	AMERICAN INTERNATIONAL GROUP	U.S.	49,520.0	(5.4)	(6,084.0)	497	—	498,301.0	69	49,800	358
208	234	CHRISTIAN DIOR ^{1,21}	FRANCE	49,221.0	16.9	2,525.0	212	45.1	87,370.3	231	131,310	167
209	193	TOKIO MARINE HOLDINGS ⁴	JAPAN	48,731.0	0.9	2,565.0	208	1.5	215,648.8	119	39,191	394
210	244	CENTENE	U.S.	48,572.0	19.3	828.0	371	47.3	21,855.0	453	33,700	409
211	212	DEUTSCHE BAHN ^{1,6}	GERMANY	48,124.2	7.3	839.8	370	9.3	67,766.6	275	310,935	45
212	187	CISCO SYSTEMS ^{2,22}	U.S.	48,005.0	(2.5)	9,609.0	40	(10.5)	129,818.0	180	72,900	301
213	216	CHINA MERCHANTS BANK [†]	CHINA	47,950.7	7.6	10,379.4	35	11.1	967,082.0	34	72,530	302
214	195	RWE [†]	GERMANY	47,832.3	(0.8)	2,189.1	240	—	82,923.9	241	59,547	335
215	214	HCA HEALTHCARE ²³	U.S.	47,653.0	6.5	2,216.0	234	(23.3)	36,593.0	395	221,491	81
216	217	STATE BANK OF INDIA ^{6,4}	INDIA	47,551.1	8.8	(706.8)	478	(2,064.9)	554,532.4	64	264,041	61
217	275	ENERGY TRANSFER EQUITY [Ⓟ]	U.S.	47,487.0 [†]	26.6	954.0	362	(4.1)	86,246.0	233	29,486	427
218	224	THYSSENKRUPP ^{1,5}	GERMANY	47,388.6 [†]	8.7	(715.7)	479	(317.8)	41,427.9	371	158,739	133
219	209	KIA MOTORS [†]	SOUTH KOREA	47,360.3	4.3	856.4	368	(63.9)	48,855.0	335	51,789	354
220	252	CHINA PACIFIC INSURANCE (GROUP)	CHINA	47,318.8	17.7	2,169.4	242	19.5	179,856.3	140	101,887	221
221	188	MS&AD INSURANCE GROUP HOLDINGS ⁴	JAPAN	47,094.9	(4.4)	1,390.5	315	(28.4)	211,350.8	122	41,295	390
222	248	ALUMINUM CORP. OF CHINA ⁶	CHINA	46,683.5	15.9	(428.6)	474	—	81,593.5	243	123,293	183
223	189	DEUTSCHE BANK [†]	GERMANY	46,511.2	(4.8)	(846.5)	483	—	1,770,811.7	18	97,535	238
224	223	BANCO BILBAO VIZCAYA ARGENTARIA [†]	SPAIN	46,507.8	6.4	3,966.7	141	3.2	828,601.1	43	131,856	165
225	210	ORANGE [†]	FRANCE	46,324.1	2.4	2,148.5	246	(33.8)	113,729.6	200	151,556	138
226	227	VINCI [†]	FRANCE	46,301.5	8.3	3,096.5	180	11.8	83,817.2	239	194,428	102
227	245	SHANGHAI PUDDING DEVELOPMENT BANK [†]	CHINA	46,295.2	13.8	8,138.1	63	1.8	942,450.9	36	54,263	348
228	218	WOOLWORTHS GROUP ^{1,9}	AUSTRALIA	46,178.9 [†]	5.1	1,156.1	340	—	17,573.5	469	202,000	93
229	236	DENSO ^{1,4}	JAPAN	46,106.1	10.4	2,893.3	192	21.7	54,212.5	314	168,813	124
230	338	CHINA EVERGRANDE GROUP ^{1,18}	CHINA	46,018.6	44.6	3,606.1	153	52.2	270,539.3	101	125,526	177
231	225	SAINT-GOBAIN [†]	FRANCE	46,001.7	6.4	1,765.2	277	21.8	51,533.4	321	179,149	115
232	247	TATA MOTORS ⁴	INDIA	45,841.7 [†]	13.7	1,394.4	314	25.4	50,808.2	327	81,090	274
233	229	BUNGE ^{6,24}	U.S.	45,794.0	7.3	160.0	439	(78.5)	18,871.0	462	31,000	420
234	372	SHANDONG ENERGY GROUP ⁶	CHINA	45,649.5	55.8	489.3	392	1,148.9	43,534.9	359	158,840	132
235	268	HENGLI GROUP	CHINA	45,562.8	20.3	1,016.0	357	23.6	18,360.2	466	63,420	323
236	219	KDDI ^{1,4}	JAPAN	45,507.6	3.8	5,167.5	105	2.4	61,831.6	291	38,826	396
237	230	INDUSTRIAL BANK	CHINA	45,491.0	6.7	8,463.3	58	4.4	985,387.3	32	58,997	336
238	264	CATERPILLAR	U.S.	45,462.0	18.0	754.0	376	—	76,962.0	251	98,400	235
239	221	HBIS GROUP ⁶	CHINA	45,390.2	3.7	(119.2)	466	—	57,767.8	301	123,178	184
240	226	LENOVO GROUP ^{1,4}	CHINA	45,349.9	5.4	(189.3)	469	(135.4)	28,494.2	428	54,000	349
241	250	MANULIFE FINANCIAL [†]	CANADA	44,941.1	11.7	1,621.2	285	(26.6)	582,322.0	63	34,300	406
242	101	CHINA SOUTH INDUSTRIES GROUP ⁶	CHINA	44,785.4	(37.1)	739.6	378	27.4	56,394.7	306	211,716	86
243	259	CHINA NATIONAL BUILDING MATERIAL GROUP ⁶	CHINA	44,701.2	13.7	15.2	457	(79.6)	90,846.9	224	214,480	85
244	246	HANWHA [†]	SOUTH KOREA	44,590.3	9.8	358.6	416	(15.4)	149,659.0	159	52,909	351
245	233	CHINA SHIPBUILDING INDUSTRY ⁶	CHINA	44,431.0	5.4	716.3	379	47.5	76,200.2	256	173,201	119
246	249	MIITSUI ^{1,4}	JAPAN	44,155.3	9.6	3,777.1	150	33.7	106,335.6	210	42,304	387
247	254	NATIONWIDE	U.S.	43,939.9	9.6	246.5	428	(26.2)	221,256.9	117	33,135	413
248	239	WILMAR INTERNATIONAL	SINGAPORE	43,846.3	5.9	1,219.3	333	25.4	40,932.6	372	90,000	254
249	267	MORGAN STANLEY	U.S.	43,642.0	15.0	6,111.0	90	2.2	851,733.0	41	57,633	338
250	282	SUMITOMO ^{1,4}	JAPAN	43,570.2	18.1	2,784.6	197	76.6	73,080.3	260	73,016	299

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RANK 2017	2016	Company	Country	REVENUES		PROFITS			ASSETS		EMPLOYEES	
				\$ millions	% change from 2016	\$ millions	Rank	% change from 2016	\$ millions	Rank	Number	Rank
251	251	CHINA MINSHENG BANKING [†]	CHINA	43,297.5	7.6	7,370.3	73	2.3	906,340.0	40	57,882	337
252	277	GREENLAND HOLDING GROUP	CHINA	42,970.1	15.4	1,337.2	319	23.2	130,303.0	178	33,473	411
253	289	PERTAMINA [®]	INDONESIA	42,959.3 [§]	17.7	2,540.2	210	[19.3]	51,213.6	324	27,817	433
254	231	E.ON [†]	GERMANY	42,794.7	1.4	4,424.3	126	-	67,183.0	276	42,699	383
255	265	LIBERTY MUTUAL INSURANCE GROUP	U.S.	42,687.0 [†]	11.4	17.0	456	[98.3]	142,502.0	162	50,000	356
256	334	SINOMACH [®]	CHINA	42,638.1	32.3	471.8	396	[6.0]	58,593.3	299	150,967	140
257	220	SWISS RE [§]	SWITZERLAND	42,487.0	[3.0]	398.0	410	[89.0]	222,526.0	116	14,485	468
258	243	NEW YORK LIFE INSURANCE	U.S.	42,296.0	3.7	1,866.9	271	71.6	303,182.8	93	11,114	482
259	271	GOLDMAN SACHS GROUP	U.S.	42,254.0	12.0	4,286.0	127	[42.1]	916,776.0	39	36,600	399
260	253	AMERICAN AIRLINES GROUP	U.S.	42,207.0	5.0	1,919.0	263	[28.3]	51,396.0	323	126,600	176
261	258	BEST BUY ²	U.S.	42,151.0	7.0	1,000.0	359	[18.6]	13,049.0	483	125,000	178
262	306	REPSOL [†]	SPAIN	41,862.5 [§]	21.4	2,390.8	225	24.5	71,874.4	263	22,375	444
263	256	CIGNA	U.S.	41,616.0	4.9	2,237.0	232	19.8	61,753.0	293	46,000	372
264	376	CHARTER COMMUNICATIONS	U.S.	41,581.0	43.4	9,895.0	36	180.9	146,623.0	161	94,800	245
265	269	SSE ^{1,4}	BRITAIN	41,382.8	9.4	1,088.8	346	[47.7]	32,559.6	413	20,785	447
266	257	DELTA AIR LINES	U.S.	41,244.0	4.0	3,577.0	154	[18.2]	53,292.0	315	86,564	261
267	343	ZHEJIANG GEELY HOLDING GROUP	CHINA	41,171.9	31.0	1,820.3	272	43.8	42,445.6	365	77,073	288
268	263	ZF FRIEDRICHSHAFEN [†]	GERMANY	41,080.2	5.6	1,221.9	332	28.6	33,421.0	407	148,148	144
269	•	METRO ^{1,5,25}	GERMANY	40,957.2	-	358.4	417	-	18,651.3	464	135,890	160
270	348	WUCHAN ZHONGDA GROUP [®]	CHINA	40,928.6	31.2	330.7	422	2.0	13,197.8	482	19,071	456
271	240	SANDFI [†]	FRANCE	40,809.7	[1.4]	9,506.9	44	82.6	119,867.9	192	106,570	211
272	441	BROOKFIELD ASSET MANAGEMENT [†]	CANADA	40,786.0	67.1	1,462.0	308	[11.4]	192,720.0	128	80,750	275
273	241	CHINA UNITED NETWORK COMMUNICATIONS [®]	CHINA	40,663.5	[1.5]	83.0	450	171.7	88,086.2	228	252,522	70
274	393	FACEBOOK	U.S.	40,653.0	47.1	15,934.0	19	56.0	84,524.0	238	25,105	441
275	260	HONEYWELL INTERNATIONAL	U.S.	40,534.0	3.1	1,655.0	283	[65.6]	59,387.0	297	131,000	168
276	255	MERCK	U.S.	40,122.0	0.8	2,394.0	222	[38.9]	87,872.0	230	69,000	309
277	303	LUFTHANSA GROUP [†]	GERMANY	40,105.2	14.6	2,664.7	204	35.7	43,548.3	358	110,917	206
278	316	RIO TINTO GROUP [†]	BRITAIN	40,030.0	18.5	8,762.0	52	89.8	95,726.0	219	46,807	371
279	262	MITSUBISHI ELECTRIC ^{§,4}	JAPAN	39,994.9	2.2	2,453.9	216	26.3	40,106.8	377	142,340	149
280	•	CHINA MERCHANTS GROUP [®]	CHINA	39,970.8	24.2	4,039.4	135	5.9	183,913.8	135	108,737	209
281	299	SABIC ^{1,6}	SAUDI ARABIA	39,939.1	4.7	4,914.9	110	4.6	85,992.7	234	34,000	407
282	266	POWER CORP. OF CANADA [†]	CANADA	39,493.2	3.2	1,031.0	354	20.5	355,620.2	85	30,484	424
283	279	JARDINE MATHESON ^{1,26}	CHINA	39,456.0	6.5	3,785.0	149	51.2	82,814.0	242	444,000	18
284	281	ACS [†]	SPAIN	39,337.8	6.3	904.0	365	8.9	38,281.3	385	122,120	188
285	296	PEGATRON [†]	TAIWAN	39,237.6	9.3	482.6	393	[19.5]	16,411.3	473	130,052	170
286	301	VOLVO [†]	SWEDEN	39,171.9	11.1	2,455.2	215	59.9	50,393.9	330	93,296	249
287	290	MAGNA INTERNATIONAL [§]	CANADA	38,946.0	6.9	2,206.0	237	8.6	25,393.0	445	168,000	126
288	326	SHAANXI YANCHANG PETROLEUM (GROUP) [®]	CHINA	38,897.8 [§]	19.1	166.8	437	-	50,590.3	329	130,614	169
289	274	CHINA HUANENG GROUP [®]	CHINA	38,872.0 [†]	3.5	215.6	431	-	159,644.8	152	138,473	156
290	273	GLAXOSMITHKLINE [†]	BRITAIN	38,867.8	3.3	1,972.6	259	60.3	76,252.4	254	98,462	234
291	302	TALANX [†]	GERMANY	38,602.6	10.0	757.5	375	[24.5]	190,184.9	131	20,419	448
292	304	ROYAL BANK OF CANADA ^{1,18}	CANADA	38,551.2	10.4	8,735.6	55	11.4	940,998.5	37	78,210	284
293	288	ALLSTATE	U.S.	38,524.0	5.4	3,189.0	173	69.9	112,422.0	201	42,680	384
294	387	SHAANXI COAL & CHEMICAL INDUSTRY [®]	CHINA	38,482.6	20.5	73.6	447	-	71,262.3	267	119,416	195
295	383	AIA GROUP ^{1,27}	CHINA	38,330.0	35.9	6,120.0	88	47.0	215,691.0	118	20,000	452
296	350	BHP BILLITON ^{1,8}	AUSTRALIA	38,285.0	23.9	5,890.0	93	-	117,006.0	194	26,146	437
297	283	TYSON FOODS [§]	U.S.	38,260.0	3.7	1,774.0	276	0.3	28,066.0	431	122,000	189
298	335	FRESENIUS ^{1,P}	GERMANY	38,196.8	17.2	2,044.8	253	18.5	63,800.4	287	273,249	59
299	311	ALIMENTATION COUCHE-TARD ^{1,28}	CANADA	37,904.5 [§]	11.0	1,208.9	336	1.3	14,171.2	478	120,000	194
300	462	ALIBABA GROUP HOLDING ^{§,4,18}	CHINA	37,770.8	60.6	9,673.1	39	49.1	113,979.4	198	66,421	314

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RANK 2017	2016	Company	Country	REVENUES		PROFITS			ASSETS		EMPLOYEES	
				\$ millions	% change from 2016	\$ millions	Rank	% change from 2016	\$ millions	Rank	Number	Rank
301	287	UNITED CONTINENTAL HOLDINGS	U.S.	37,736.0	3.2	2,131.0	249	[5.8]	42,326.0	368	89,800	256
302	280	ORACLE ^{1,7}	U.S.	37,728.0	1.8	9,335.0	47	4.9	134,991.0	170	138,000	157
303	310	J. SAINSBURY ^{1,4}	BRITAIN	37,711.3	10.4	409.5	407	[16.6]	30,856.9	418	121,200	191
304	285	POSTE ITALIANE ^{1,6}	ITALY	37,695.2	2.9	776.7	373	12.9	243,359.8	110	136,555	159
305	298	MAERSK GROUP [†]	DENMARK	37,500.0 [†]	5.7	[1,205.0]	486	-	63,227.0	288	85,667	265
306	291	UBS GROUP [†]	SWITZERLAND	37,317.3	3.0	1,069.8	349	[67.1]	939,794.7	38	61,253	330
307	300	BOUYGUES [†]	FRANCE	37,259.0	5.6	1,223.0	331	51.1	42,961.1	363	115,530	201
308	293	GEORGE WESTON [†]	CANADA	37,211.6	2.8	584.9	366	41.0	30,730.4	420	198,000	99
309	297	MEIJI YASUDA LIFE INSURANCE [†]	JAPAN	37,159.7	3.9	2,392.2	224	15.9	390,702.8	80	42,261	388
310	309	EDEKA ZENTRALE ^{†,29}	GERMANY	37,125.4	8.6	345.0	418	[3.1]	8,863.8	493	369,000	31
311	294	MITSUBISHI HEAVY INDUSTRIES [†]	JAPAN	37,103.2	2.7	636.2	383	[21.4]	51,609.6	320	80,652	276
312	341	CHINA POLY GROUP ⁶	CHINA	37,001.9	17.4	1,152.6	341	54.9	138,876.4	165	88,407	260
313	237	FUJITSU ^{1,4}	JAPAN	36,990.9	[11.1]	1,528.4	302	87.2	29,356.9	425	140,365	155
314	360	BHARAT PETROLEUM ^{6,4}	INDIA	36,851.1 ⁶	21.6	1,397.5	313	7.5	18,464.9	465	12,924	474
315	412	TECH DATA ²	U.S.	36,775.0	40.2	116.6	444	[40.2]	12,652.6	484	14,000	470
316	305	ACCENTURE ^{8,10}	IRELAND	36,765.5	5.7	3,445.1	159	[16.2]	22,689.9	451	425,000	19
317	347	CANON ⁸	JAPAN	36,388.4	16.4	2,157.6	245	55.8	46,153.7	345	197,776	100
318	286	CENTRICA [†]	BRITAIN	36,082.7	[1.4]	428.8	402	[81.0]	27,952.4	432	34,901	403
319	278	TIAA	U.S.	36,025.3	[2.9]	1,049.7	352	[29.7]	583,631.7	62	16,829	461
320	317	SNCF MOBILITÉS ^{1,6}	FRANCE	35,880.4	6.3	1,280.5	325	126.6	47,827.8	340	201,816	95
321	321	TJX ²	U.S.	35,864.7	8.1	2,607.9	206	13.5	14,058.0	480	249,000	71
322	329	CHINA EVERBRIGHT GROUP ⁶	CHINA	35,840.2	10.4	1,895.1	269	0.9	686,170.8	52	66,100	315
323	450	MIDEA GROUP	CHINA	35,794.2	48.8	2,557.3	209	15.7	38,099.9	388	101,826	222
324	292	INTESA SANPAOLO [†]	ITALY	35,751.9	[1.3]	8,246.7	60	139.7	956,845.6	35	96,892	240
325	370	VALE [†]	BRAZIL	35,713.0 [†]	21.6	5,507.0	100	38.3	99,184.0	215	74,098	294
326	•	TOSHIBA ^{8,4}	JAPAN	35,630.0	[20.7]	7,256.8	75	-	41,928.1	370	141,256	152
327	315	AMERICAN EXPRESS	U.S.	35,583.0	5.2	2,736.0	200	[49.4]	181,159.0	138	55,000	346
328	235	COCA-COLA	U.S.	35,410.0	[15.4]	1,248.0	329	[80.9]	87,896.0	229	61,800	329
329	324	AISIN SEIKI ^{1,4}	JAPAN	35,281.1	7.3	1,214.4	335	3.9	33,178.9	408	114,478	203
330	332	IBERDROLA [†]	SPAIN	35,240.4	9.1	3,160.7	176	5.7	132,911.3	174	28,750	429
331	478	TENCENT HOLDINGS ^{1,18}	CHINA	35,178.8	53.8	10,580.6	32	71.0	85,176.9	237	44,796	378
332	307	CHINA VANKE [†]	CHINA	35,117.4	1.9	4,150.5	131	31.2	178,968.0	143	77,708	285
333	312	CHINA ENERGY ENGINEERING GROUP ⁶	CHINA	35,048.3	3.3	371.7	412	[11.7]	54,635.0	309	168,260	125
334	308	PUBLIX SUPER MARKETS	U.S.	34,836.8	1.6	2,291.9	229	13.1	18,183.5	467	193,000	103
335	366	CHINA COSCO SHIPPING ⁶	CHINA	34,667.8	16.6	1,404.3	311	[5.7]	109,043.9	208	100,550	226
336	284	BARCLAYS [†]	BRITAIN	34,506.6	[6.2]	[1,652.0]	488	[158.8]	1,532,658.9	20	79,900	281
337	351	TORONTO-DOMINION BANK ^{†,18}	CANADA	34,500.6	11.8	7,946.7	65	19.6	992,315.2	31	83,160	268
338	374	LYONDELLBASELL INDUSTRIES ⁸	NETHERLANDS	34,484.0	18.2	4,879.0	113	27.2	26,206.0	443	13,400	471
339	205	NOBLE GROUP ^{1,26}	CHINA	34,420.8 [†]	[26.0]	[4,938.2]	495	[57,169.6]	4,809.5	499	500	499
340	381	NIKE ^{1,7}	U.S.	34,350.0	6.1	4,240.0	129	12.8	23,259.0	450	74,400	293
341	314	ABB ⁸	SWITZERLAND	34,312.0	1.4	2,213.0	235	16.5	43,262.0	361	134,800	162
342	330	DAIWA HOUSE INDUSTRY ⁴	JAPAN	34,261.7	5.7	2,133.3	248	14.6	37,950.5	391	60,539	332
343	936	CHINA AEROSPACE SCIENCE & TECHNOLOGY ⁶	CHINA	34,253.6	6.7	2,225.2	233	11.5	63,057.5	290	173,102	120
344	453	ANDEAVOR ³⁰	U.S.	34,204.0 ⁶	42.5	1,528.0	303	108.2	28,573.0	427	14,300	469
345	416	ENBRIDGE ⁸	CANADA	34,195.7	31.2	2,203.0	238	41.1	129,384.6	181	12,700	475
346	355	CHINA AEROSPACE SCIENCE & INDUSTRY ⁶	CHINA	34,073.0	11.4	1,607.1	287	11.3	44,273.7	355	145,987	145
347	340	SOMPO HOLDINGS ⁴	JAPAN	34,027.5	7.8	1,262.0	328	[17.8]	112,370.2	202	48,544	366
348	373	SUZUKI MOTOR ⁴	JAPAN	33,911.7	15.9	1,947.1	260	31.9	31,419.4	416	65,179	318
349	333	COMMONWEALTH BANK OF AUSTRALIA ^{1,9}	AUSTRALIA	33,866.9	5.0	7,484.7	71	11.5	748,753.1	45	45,614	374
350	242	SUMITOMO LIFE INSURANCE ⁴	JAPAN	33,820.7	[17.4]	630.3	384	21.8	338,911.3	88	42,835	382

DEFINITIONS, EXPLANATIONS, AND FOOTNOTES ARE ON PAGE F12.

RANK 2017	2016	Company	Country	REVENUES		PROFITS			ASSETS		EMPLOYEES	
				\$ millions	% change from 2016	\$ millions	Rank	% change from 2016	\$ millions	Rank	Number	Rank
351	402	WORLD FUEL SERVICES	U.S.	33,695.5	24.7	[170.2]	468	[234.5]	5,587.8	498	5,000	494
352	349	mitsubishi chemical holdings ^{1,4}	JAPAN	33,615.5	7.9	1,911.5	265	32.6	44,207.6	356	69,230	308
353	467	COUNTRY GARDEN HOLDINGS ^{1,18}	CHINA	33,572.0	45.7	3,856.3	144	122.4	161,190.0	151	124,837	179
354	390	QUANTA COMPUTER ¹	TAIWAN	33,563.8	21.1	472.2	395	0.6	20,617.7	457	109,624	208
355	327	DZ BANK ^{1,C}	GERMANY	33,562.8	2.8	1,078.7	348	[33.5]	607,101.3	59	28,201	431
356	344	EXELON	U.S.	33,531.0	6.9	3,770.0	151	232.5	116,700.0	195	34,621	405
357	270	MASSACHUSETTS MUTUAL LIFE INSURANCE	U.S.	33,495.4	[11.4]	513.0	389	[59.7]	288,854.8	96	11,811	479
358	356	JFE HOLDINGS ⁴	JAPAN	33,202.2	8.7	1,305.5	322	108.2	41,953.4	369	61,234	331
359	320	JIZHONG ENERGY GROUP ⁶	CHINA	33,187.8	[0.5]	[141.5]	467	-	35,380.7	398	118,660	196
360	494	XIAMEN ITS HOLDING GROUP ⁶	CHINA	32,901.6	50.0	106.3	446	198.4	15,282.1	475	19,639	454
361	•	CEDAR HOLDINGS GROUP	CHINA	32,711.5	38.4	1,068.1	350	27.1	20,737.8	456	31,065	419
362	488	XIAMEN CGO ⁶	CHINA	32,588.4	47.2	305.1	426	8.9	32,280.1	414	21,133	446
363	444	CONOCOPHILLIPS	U.S.	32,584.0	33.8	[855.0]	484	-	73,362.0	259	11,400	481
364	365	JIANGSU SHAGANG GROUP	CHINA	32,560.5	9.0	1,061.8	351	201.6	26,829.1	440	34,634	404
365	353	BRIDGESTONE	JAPAN	32,494.6	5.9	2,571.0	207	5.3	35,150.8	401	142,669	148
366	342	CHUOB ⁸	SWITZERLAND	32,243.0	2.5	3,861.0	143	[6.6]	167,022.0	149	31,000	420
367	357	MIZUHO FINANCIAL GROUP ⁴	JAPAN	32,141.8	5.8	5,203.8	104	[6.6]	1,928,226.3	14	60,051	334
368	369	TAIWAN SEMICONDUCTOR MANUFACTURING ¹	TAIWAN	32,126.4	9.3	11,339.3	28	10.3	66,949.0	279	48,602	365
369	362	CHINA ELECTRONICS ⁶	CHINA	31,990.4	6.6	166.8	468	[48.2]	40,399.7	375	137,135	158
370	339	JIANGXI COPPER ⁶	CHINA	31,964.1	0.9	113.5	445	457.3	18,888.8	461	24,416	443
371	439	CHINA NATIONAL AVIATION FUEL GROUP ⁶	CHINA	31,942.2	29.9	401.6	409	25.5	7,810.0	495	12,643	476
372	359	CNS ^{6,10}	U.S.	31,934.8	5.2	127.9	441	[69.9]	15,973.8	474	11,626	480
373	354	CREDIT SUISSE GROUP ⁵	SWITZERLAND	31,900.3	4.9	[998.7]	485	-	817,293.4	44	46,840	370
374	319	CK HUTCHISON HOLDINGS ^{1,31}	CHINA	31,892.4	[4.7]	4,504.5	124	5.9	140,751.6	163	300,000	49
375	•	XIAMEN XIANGYU GROUP ⁶	CHINA	31,676.4	69.8	147.2	440	34.6	14,081.5	479	7,926	486
376	361	3M	U.S.	31,657.0	5.1	4,858.0	115	[3.8]	37,987.0	389	91,536	252
377	346	BT GROUP ^{1,4}	BRITAIN	31,438.9	0.3	2,692.9	201	8.4	59,970.5	296	105,800	213
378	367	MAZDA MOTOR ⁴	JAPAN	31,355.7	5.7	1,011.4	358	16.9	25,656.8	444	49,755	359
379	371	TIME WARNER ³²	U.S.	31,271.0	6.7	5,247.0	103	33.6	69,209.0	272	26,000	438
380	323	HYUNDAI MOBIS ¹	SOUTH KOREA	31,090.6	[5.7]	1,387.3	316	[47.0]	38,991.8	382	29,492	426
381	322	XINXING CATHAY INTERNATIONAL GROUP ⁶	CHINA	31,078.2	[6.3]	440.0	401	[1.8]	21,110.4	455	56,701	342
382	363	CRH ¹	IRELAND	31,069.4 ⁹	3.7	2,136.1	247	55.4	37,983.9	390	89,213	257
383	345	GENERAL DYNAMICS	U.S.	30,973.0	[1.2]	2,912.0	191	[1.5]	35,046.0	402	98,600	233
384	352	SUBARU ⁴	JAPAN	30,734.7	0.1	1,988.9	257	[23.7]	27,126.1	439	37,771	398
385	318	CRRC ^{1,6}	CHINA	30,634.1	[9.2]	1,597.7	289	[6.0]	57,612.2	302	176,754	117
386	388	SCHLUMBERGER ^{8,33}	U.S.	30,440.0	9.5	[1,505.0]	487	-	71,987.0	262	100,000	227
387	325	RITE AID ^{1,4}	U.S.	30,215.4 ⁹	[8.0]	943.5	364	23,178.3	8,989.3	492	48,410	367
388	400	CHINA ELECTRONICS TECHNOLOGY GROUP ⁶	CHINA	30,175.5	10.6	1,774.3	275	10.1	46,790.3	341	168,923	123
389	272	JOHNSON CONTROLS INTERNATIONAL ^{6,5}	IRELAND	30,172.0	[19.9]	1,611.0	286	-	51,884.0	318	121,000	193
390	401	UNITED SERVICES AUTOMOBILE ASSN.	U.S.	30,015.8	10.6	2,421.9	221	36.1	155,390.5	155	32,705	415
391	395	CAPITAL ONE FINANCIAL	U.S.	29,999.0	9.0	1,982.0	258	[47.2]	365,693.0	84	49,300	362
392	379	L'OREAL ¹	FRANCE	29,925.8 ⁹	4.7	4,037.0	136	17.5	42,434.1	366	82,606	272
393	364	CHINA STATE SHIPBUILDING ⁶	CHINA	29,796.9	[0.3]	370.8	413	0.9	44,674.5	353	70,009	306
394	407	DEERE ^{1,9}	U.S.	29,737.7	11.6	2,159.1	244	41.7	65,786.3	282	60,476	333
395	366	STATE POWER INVESTMENT ⁶	CHINA	29,726.5	0.8	198.6	432	[54.5]	154,358.3	156	127,182	175
396	377	MEDTRONIC ^{3,28}	IRELAND	29,710.0	3.0	4,028.0	137	13.8	99,816.0	214	102,688	220
397	382	CHINA HUADIAN ⁶	CHINA	29,611.8	5.0	333.3	421	[7.6]	122,354.9	187	105,006	214
398	423	IDEMITSU KOSAN ⁴	JAPAN	29,605.5 ⁵	14.4	1,464.9	307	80.0	27,464.2	433	8,955	485
399	•	YANKUANG GROUP ⁶	CHINA	29,473.5	40.1	[280.1]	472	-	44,190.7	357	104,746	217
400	•	INTL FCSTONE ^{5,34}	U.S.	29,423.6	99.4	6.4	458	[88.3]	6,243.4	496	1,607	498

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RANK 2017	2016	Company	Country	REVENUES		PROFITS			ASSETS		EMPLOYEES	
				\$ millions	% change from 2016	\$ millions	Rank	% change from 2016	\$ millions	Rank	Number	Rank
401	378	NORTHWESTERN MUTUAL	U.S.	29,331.0	1.8	1,017.0	356	24.3	265,049.0	102	5,437	491
402	328	UNICREDIT GROUP [†]	ITALY	29,257.2 [†]	(10.1)	6,169.3	86	—	1,004,790.7	29	91,952	251
403	469	ENTERPRISE PRODUCTS PARTNERS [®]	U.S.	29,241.5	27.0	2,799.3	196	11.4	54,418.1	311	7,000	489
404	458	COMPAL ELECTRONICS [†]	TAIWAN	29,175.2	22.7	189.0	434	(25.0)	12,213.7	465	63,491	321
405	295	RAJESH EXPORTS [®]	INDIA	29,124.9	(19.4)	196.4	433	5.7	3,608.8	500	350	500
406	386	AIR FRANCE-KLM GROUP [†]	FRANCE	29,064.1	4.1	[308.9]	473	[135.3]	29,308.4	426	80,595	278
407	394	TRAVELERS COS.	U.S.	28,902.0	4.6	2,056.0	251	(31.8)	103,483.0	212	30,800	422
408	428	INDITEX ^{†,2}	SPAIN	28,887.2	12.3	3,840.1	146	10.2	25,200.5	446	171,839	121
409	181	HEWLETT PACKARD ENTERPRISE ^{†,9,35}	U.S.	28,871.0	(42.4)	344.0	419	(89.1)	61,406.0	294	66,000	316
410	411	CATHAY LIFE INSURANCE [†]	TAIWAN	28,804.5	9.6	1,192.8	337	27.7	204,963.2	123	39,822	392
411	406	PHILIP MORRIS INTERNATIONAL	U.S.	28,748.0 [†]	7.7	6,035.0	92	(13.4)	42,968.0	362	80,600	277
412	392	COOP GROUP [†]	SWITZERLAND	28,600.6	3.4	492.7	391	2.2	19,995.9	459	74,532	292
413	387	COMPASS GROUP ^{†,5}	BRITAIN	28,577.6	2.7	1,470.2	306	4.4	14,727.0	477	588,112	8
414	391	WESTPAC BANKING ^{†,5}	AUSTRALIA	28,564.5	3.1	6,083.2	91	11.1	668,294.5	54	35,096	402
415	385	MIGROS GROUP [†]	SWITZERLAND	28,518.3	1.3	524.2	388	(24.4)	66,284.5	280	79,303	283
416	396	TWENTY-FIRST CENTURY FOX [®]	U.S.	28,500.0	4.3	2,952.0	187	7.2	50,724.0	328	21,700	445
417	403	PHENIX PHARMA ^{†,2,36}	GERMANY	28,401.3	5.3	184.4	435	36.1	10,410.0	489	27,638	434
418	381	MEDIPAL HOLDINGS [†]	JAPAN	28,397.8	0.4	313.9	424	17.2	15,250.4	476	15,993	463
419	404	VEDLIA ENVIRONNEMENT [†]	FRANCE	28,320.8	5.0	452.7	397	6.9	46,000.4	346	164,385	127
420	389	KANSAI ELECTRIC POWER [®]	JAPAN	28,283.4	1.8	1,370.8	317	5.5	65,692.5	283	32,520	416
421	413	SAMSUNG LIFE INSURANCE [†]	SOUTH KOREA	28,272.5	7.8	1,031.6	353	(41.7)	264,119.8	104	5,244	492
422	429	ABBVIE	U.S.	28,216.0	10.1	5,309.0	102	(10.8)	70,786.0	268	29,000	428
423	375	ROYAL PHILIPS [†]	NETHERLANDS	28,071.1 [†]	(3.2)	1,867.8	270	16.6	30,397.5	421	73,951	297
424	399	SCHNEIDER ELECTRIC [†]	FRANCE	27,890.7	2.1	2,423.5	220	25.2	47,849.4	339	142,013	151
425	420	SUMITOMO ELECTRIC INDUSTRIES [†]	JAPAN	27,819.6	7.1	1,086.1	347	9.4	28,376.8	429	255,133	66
426	446	DANONE [†]	FRANCE	27,816.3	14.6	2,765.1	199	45.4	53,155.6	316	104,843	215
427	485	SUNING.COM GROUP ^{†,7}	CHINA	27,805.7	24.3	623.3	385	487.8	24,151.8	448	121,102	192
428	•	ANSTEEL GROUP [†]	CHINA	27,792.0	32.6	61.1	451	—	54,643.1	308	145,771	146
429	417	GAS NATURAL FENOSA [†]	SPAIN	27,652.9 [†]	6.1	1,533.0	301	2.9	56,822.8	304	15,374	464
430	424	BANK OF NOVA SCOTIA ^{†,19}	CANADA	27,554.5	6.7	6,119.1	89	14.1	710,119.5	48	88,645	258
431	•	SHOUGANG GROUP [†]	CHINA	27,488.7	35.4	0.9	459	—	76,956.8	252	115,482	202
432	•	WISTRON [†]	TAIWAN	27,480.0	34.3	127.7	442	39.1	10,979.9	488	82,955	270
433	•	ABBOTT LABORATORIES	U.S.	27,390.0	31.3	477.0	394	(65.9)	76,250.0	255	99,000	232
434	427	LA POSTE ^{†,10}	FRANCE	27,177.2	5.5	959.3	361	2.2	296,184.0	94	236,223	73
435	463	KOC HOLDING [†]	TURKEY	27,108.4	15.6	1,345.9	318	17.6	27,452.5	434	94,111	246
436	•	CPC ^{†,16}	TAIWAN	27,105.5 [†]	26.6	1,324.9	320	45.5	25,043.6	447	14,814	465
437	464	PROGRESSIVE	U.S.	26,839.0	14.5	1,592.2	292	54.4	38,701.2	383	33,656	410
438	486	GS CALTEX [†]	SOUTH KOREA	26,821.2 [†]	20.8	1,272.2	326	4.2	18,762.9	463	2,920	497
439	426	MAPFRE GROUP [†]	SPAIN	26,817.2	4.0	789.6	372	(7.9)	81,135.3	245	36,271	400
440	456	ARROW ELECTRONICS	U.S.	26,812.5	12.5	402.0	408	(23.1)	16,462.8	472	18,800	457
441	434	ADECCO GROUP [†]	SWITZERLAND	26,669.9	6.2	888.2	366	11.1	11,875.6	486	34,000	407
442	•	SK HYNIX [†]	SOUTH KOREA	26,636.3	79.7	9,414.0	45	269.8	42,431.3	367	28,000	432
443	408	EAST JAPAN RAILWAY [†]	JAPAN	26,627.4	0.2	2,608.1	205	1.7	76,626.3	253	86,389	263
444	398	LAFARGEHOLCIM [†]	SWITZERLAND	26,545.3	(2.8)	[1,701.7]	490	[193.6]	65,358.7	284	81,960	273
445	473	ALTICE [†]	NETHERLANDS	26,489.3	15.4	[615.5]	476	—	86,980.1	232	47,143	369
446	443	SAP [†]	GERMANY	26,445.6	8.4	4,529.2	122	12.3	51,029.1	326	88,543	259
447	474	ONEX [†]	CANADA	26,290.0 [†]	14.6	2,394.0	222	—	44,679.0	352	207,000	89
448	418	AUSTRALIA & NEW ZEALAND BANKING GROUP ^{†,5}	AUSTRALIA	26,282.7	1.0	4,877.2	114	16.1	703,950.7	49	44,896	377
449	•	ANGLO AMERICAN [†]	BRITAIN	26,243.0	22.8	3,166.0	174	98.6	54,561.0	310	69,000	309
450	477	RANDSTAD HOLDING [†]	NETHERLANDS	26,233.5	14.7	711.7	380	9.5	11,723.0	487	37,930	397

DEFINITIONS, EXPLANATIONS, AND FOOTNOTES ARE ON PAGE F12.

RANK 2017	2016	Country	REVENUES		PROFITS			ASSETS		EMPLOYEES		
			\$ millions	% change from 2016	\$ millions	Rank	% change from 2016	\$ millions	Rank	Number	Rank	
451	410	KRAFT HEINZ	U.S.	26,232.0	[1.0]	10,999.0	29	202.8	120,232.0	191	39,000	395
452		• PLAINS GP HOLDINGS [†]	U.S.	26,223.0	29.9	[731.0]	480	[877.7]	26,753.0	441	4,850	495
453		• BRITISH AMERICAN TOBACCO [†]	BRITAIN	26,128.2 [€]	31.2	48,327.8	2	670.4	190,746.6	130	62,270	328
454		• CFE ^{1,6}	MEXICO	26,108.3	38.6	5,704.4	97	39.8	80,467.2	246	90,000	254
455	358	GILEAD SCIENCES	U.S.	26,107.0	[14.1]	4,628.0	117	[65.7]	70,283.0	271	10,000	484
456	495	XINJIANG GUANGHUI INDUSTRY INVESTMENT	CHINA	26,106.0	19.1	32.5	454	[87.1]	37,727.4	392	79,747	282
457	415	NOKIA [†]	FINLAND	26,091.7	[0.2]	[1,684.1]	489	-	49,260.3	333	101,731	224
458	447	SAMSUNG CGT [†]	SOUTH KOREA	25,901.7	7.0	566.0	387	511.8	45,823.0	347	12,953	473
459	421	MONDELEZ INTERNATIONAL	U.S.	25,896.0	[0.1]	2,922.0	190	76.1	63,109.0	289	83,000	269
460	435	INTERNATIONAL AIRLINES GROUP ^{1,3a}	BRITAIN	25,894.4	3.8	2,255.6	230	5.6	32,734.1	412	63,422	322
461	440	NORTHROP GRUMMAN	U.S.	25,803.0	5.3	2,015.0	255	[8.4]	34,917.0	403	70,000	307
462	451	CHUBU ELECTRIC POWER [†]	JAPAN	25,753.2	7.2	671.3	382	[36.6]	52,009.7	317	30,635	423
463	437	NEC ^{1,4}	JAPAN	25,673.3	4.4	414.0	405	64.3	26,533.9	442	111,200	204
464	459	YANGUO LONGKING GROUP ^{3b}	CHINA	25,605.1	8.2	452.5	398	184.2	45,226.7	350	20,105	451
465		• CHINA TAIPING INSURANCE GROUP ⁶	CHINA	25,597.5	18.6	449.2	399	53.4	85,774.0	235	77,472	287
466	455	FLEX ^{3,4}	SINGAPORE	25,441.3	6.6	428.5	408	34.1	13,715.9	481	200,000	96
467	449	RAYTHEON	U.S.	25,348.0	5.3	2,024.0	254	[8.5]	30,860.0	417	64,000	319
468	454	CHINA DATANG ⁶	CHINA	25,299.2	6.0	341.7	420	40.1	110,688.9	205	96,735	241
469		• PKN ORLEN GROUP [†]	POLAND	25,256.1 [€]	25.2	1,762.5	278	32.2	17,462.3	470	20,262	449
470	487	ULTRAPAR HOLDINGS [†]	BRAZIL	25,064.6	13.1	493.2	390	10.2	8,545.8	494	16,448	462
471		• KB FINANCIAL GROUP [†]	SOUTH KOREA	25,052.4	56.4	2,929.5	189	58.6	408,058.3	77	26,846	435
472	409	ACHMEA [†]	NETHERLANDS	24,872.0	[6.1]	242.4	429	-	109,205.1	207	14,582	467
473	425	MACY'S ²	U.S.	24,837.0	[3.7]	1,547.0	297	149.9	19,381.0	460	130,000	171
474	480	EMIRATES GROUP ^{1,6,4}	U.A.E.	24,836.9	8.9	761.2	374	123.7	34,737.4	404	62,356	327
475	468	HEINEKEN HOLDING [†]	NETHERLANDS	24,831.4 [€]	7.8	1,101.3	344	27.8	49,272.3	332	80,425	279
476		• SUNCOR ENERGY [†]	CANADA	24,793.4 [€]	21.9	3,435.1	161	949.2	71,435.2	264	12,381	478
477		• ENERGIE BADEN-WÜRTTEMBERG [†]	GERMANY	24,769.4	15.6	2,315.4	228	-	46,571.7	342	19,939	453
478	466	MICHELIN [†]	FRANCE	24,753.7	7.1	1,916.3	264	3.4	30,339.8	423	107,807	210
479		• FUBON FINANCIAL HOLDING [†]	TAIWAN	24,688.3	11.0	1,778.9	274	18.5	232,586.7	114	44,173	379
480		• ADIDAS [†]	GERMANY	24,669.1 [€]	15.6	1,236.6	330	10.0	17,437.6	471	56,888	340
481	476	SHANXI JINCHENG ANTHRACITE COAL MINING ⁶	CHINA	24,658.7	7.8	57.3	452	1,820.1	38,267.0	386	132,846	164
482	457	HERAEUS HOLDING ^{1,40}	GERMANY	24,622.3	3.5	-	-	-	5,798.9	497	13,073	472
483	479	LG DISPLAY [†]	SOUTH KOREA	24,584.6	7.6	1,594.8	291	104.1	27,241.9	437	53,891	350
484		• DXC TECHNOLOGY ^{4,41}	U.S.	24,556.0	222.8	1,751.0	280	-	33,921.0	406	150,000	141
485	405	NATIONAL AUSTRALIA BANK ^{1,5}	AUSTRALIA	24,549.8	[8.9]	4,023.8	138	1,453.8	618,439.6	58	33,422	412
486	123	CECONOMY ^{1,5,42}	GERMANY	24,432.1	[62.3]	1,215.3	334	82.7	9,787.2	490	57,582	339
487		• FOMENTO ECONOMICO MEXICANO [†]	MEXICO	24,340.8 [€]	13.8	2,241.8	231	98.2	30,083.6	424	295,097	51
488	475	US FOODS HOLDING	U.S.	24,147.2	5.4	444.3	400	111.8	9,037.2	491	25,204	440
489		• TAIKANG INSURANCE GROUP	CHINA	24,058.3	27.8	1,683.2	282	32.9	109,467.8	206	52,424	352
490	481	U.S. BANCORP	U.S.	23,996.0	5.5	6,218.0	85	5.6	462,040.0	73	72,402	303
491		• BOEHRINGER INGELHEIM	GERMANY	23,888.0	17.6	[258.1]	471	[112.6]	34,085.0	405	49,610	361
492	472	RABOBANK GROUP ^{1,7,C}	NETHERLANDS	23,812.4	[6.6]	1,701.0	281	105.4	724,052.6	46	43,810	380
493		• CJ CORP. [†]	SOUTH KOREA	23,795.8	15.3	410.2	406	113.4	27,396.7	435	55,424	345
494	445	YANGQUAN COAL INDUSTRY GROUP ⁶	CHINA	23,792.8	[2.0]	[117.1]	465	[1,150.3]	33,075.6	409	135,723	161
495	446	SHANXI LUAN MINING GROUP ⁶	CHINA	23,784.5	[1.3]	0.5	460	-	37,128.2	394	95,796	242
496		• HENAN ENERGY & CHEMICAL ⁶	CHINA	23,699.4	26.9	[68.6]	463	-	39,857.3	379	182,480	109
497	430	DATONG COAL MINE GROUP ⁶	CHINA	23,697.5	[7.5]	66.8	449	-	51,065.7	325	160,836	130
498	452	BAE SYSTEMS [†]	BRITAIN	23,591.6	[1.7]	1,099.6	345	[10.8]	30,366.5	422	76,000	290
499		• QINGDAO HAIER	CHINA	23,563.2	31.5	1,024.7	355	35.2	23,259.1	449	76,896	289
500	419	ERICSSON [†]	SWEDEN	23,556.3	[9.4]	[4,119.8]	494	[2,155.2]	31,830.3	415	100,735	225
TOTALS				29,996,749.2		1,880,667.2			132,630,880.7		67,682,117	

WINNERS AND LOSERS

NEWCOMERS AND RETURNEES

	500 rank 2017
1 ABBOTT LABORATORIES*	433
2 ADIDAS	480
3 ANGLO AMERICAN*	449
4 ANSTEEL GROUP*	428
5 BOEHRINGER INGELHEIM*	491
6 BRITISH AMERICAN TOBACCO*	453
7 CEDAR HOLDINGS GROUP	361
8 CFE*	454
9 CHINA MERCHANTS GROUP	280
10 CHINA TAIPING INSURANCE GROUP	465
11 CJ CORP.	493
12 CPC*	436
13 DXC TECHNOLOGY	484
14 ENERGIE BADEN-WÜRTTEMBERG*	477
15 FOMENTO ECONÓMICO MEXICANO	487
16 FUBON FINANCIAL HOLDING	479
17 HENAN ENERGY & CHEMICAL*	496
18 INTL FCSTONE*	400
19 KB FINANCIAL GROUP*	471
20 METRO	269
21 OIL & NATURAL GAS*	197
22 PKN ORLEN GROUP*	469
23 PLAINS GP HOLDINGS*	452
24 QINGDAO HAIER	499
25 SHOUGANG GROUP*	431
26 SK HYNIX	442
27 SUNCOR ENERGY*	476
28 TAIKANG INSURANCE GROUP	489
29 TOSHIBA*	326
30 TOYOTA TSUSHO*	165
31 WISTRON*	432
32 XIAMEN XIANGYU GROUP	375
33 YANKUANG GROUP	399

* A RETURNEE TO THE FORTUNE GLOBAL 500 LIST.

DISPLACED FROM LIST

1 AFLAC	483
2 ALFRESA HOLDINGS	461
3 AMGEN	471
4 ANBANG INSURANCE GROUP*	139
5 ASTRAZENCA	470
6 AUTONATION	500
7 AVNET	414
8 CEFC CHINA ENERGY*	222
9 CHINA GENERAL TECHNOLOGY	490
10 CHINA GUODIAN	397
11 DALIAN WANDA GROUP*	380
12 DOLLAR GENERAL	492
13 DUKE ENERGY	465
14 DUPONT	488
15 HINDUSTAN PETROLEUM	384
16 H&M HENNES & MAURITZ	482
17 HNA GROUP*	170
18 HYUNDAI HEAVY INDUSTRIES	313
19 LOTTE SHOPPING	431
20 MCDONALD'S	436
21 MERCANTIL SERVICIOS FINANCIEROS	442
22 WM. MORRISON SUPERMARKETS	498
23 NATIONAL GRID	491
24 NEW CHINA LIFE INSURANCE	497
25 OLD MUTUAL	422
26 QUALCOMM	460
27 SEARS HOLDINGS	489
28 SHANJI COOKING COAL GROUP	433
29 SDDEXO	484
30 STANDARD LIFE	432
31 TELECOM ITALIA	493
32 TEVA PHARMACEUTICAL INDUSTRIES	496
33 TUI	499

† COMPANY DID NOT PROVIDE REQUIRED FINANCIALS FOR INCLUSION IN THE FORTUNE GLOBAL 500 LIST.

TOP 35 MONEY LOSERS

	2017 rank	Loss \$ millions
PEMEX	107	14,846.1*
CITIGROUP	76	8,798.0
AMERICAN INTERNATIONAL GROUP	207	6,084.0*
GENERAL ELECTRIC	41	5,786.0
NOBLE GROUP	339	4,938.2
ERICSSON	500	4,119.8
GENERAL MOTORS	21	3,864.0
DELL TECHNOLOGIES	93	3,728.0*
U.S. POSTAL SERVICE	123	2,742.0*
LAFARGEHOLOCIM	444	1,701.7
NOKIA	457	1,684.1*
BARCLAYS	336	1,652.0
SCHLUMBERGER	386	1,505.0*
MAERSK GROUP	305	1,205.0*
CREDIT SUISSE GROUP	373	998.7*
CONOCOPHILLIPS	363	855.0*
DEUTSCHE BANK	223	846.5*
UNIPER	88	739.5*
CHEMCHINA	167	739.0
PLAINS GP HOLDINGS	452	731.0
THYSSENKRUPP	218	715.7
STATE BANK OF INDIA	216	706.8
CHINA NATIONAL PETROLEUM	4	690.5
ALTICE	445	615.5*
CARREFOUR	68	598.6
ALUMINUM CORP. OF CHINA	222	428.6*
AIR FRANCE-KLM GROUP	406	308.9
YANKUANG GROUP	399	280.1*
BOEHRINGER INGELHEIM	491	258.1
CHINA MINMETALS	109	210.7*
LENOVO GROUP	240	189.3
WORLD FUEL SERVICES	351	170.2
JIZHONG ENERGY GROUP	359	141.5*
HBIS GROUP	239	119.2*
YANGQUAN COAL INDUSTRY GROUP	494	117.1

TOTAL LOSS FOR THE 39 COMPANIES WITH LOSSES 71,363.0

MEDIAN LOSS 731.0

* ALSO LOST MONEY IN 2016.

UPS AND DOWNS

20 THAT CLIMBED

Company	2017 rank	Rank gain from 2016
CHINA ENERGY INVESTMENT	101	175
BROOKFIELD ASSET MANAGEMENT	272	169
ALIBABA GROUP HOLDING	300	162
TENCENT HOLDINGS	331	147
SHANDONG ENERGY GROUP	234	138
XIAMEN ITG HOLDING GROUP	360	134
MIDEA GROUP	323	127
XIAMEN C&D	362	126
FACEBOOK	274	119
COUNTRY GARDEN HOLDINGS	353	114

Company	2017 rank	Rank gain from 2016
CHARTER COMMUNICATIONS	264	112
ANDEAVOR	344	109
CHINA EVERGRANDE GROUP	230	108
TECH DATA	315	97
AIA GROUP	295	88
CONOCOPHILLIPS	363	81
JD.COM	181	80
SINOMACH	256	78
WUCHAN ZHONGDA GROUP	270	78
ZHEJIANG GEELY HOLDING GROUP	267	76

20 THAT STUMBLER

Company	2017 rank	Rank loss from 2016
CECONOMY	486	-363
HEWLETT PACKARD ENTERPRISE	409	-228
CHINA SOUTH INDUSTRIES GROUP	242	-141
NOBLE GROUP	339	-134
LEGAL & GENERAL GROUP	172	-123
JOHNSON CONTROLS INTL.	389	-117
RAJESH EXPORTS	405	-110
SUMITOMO LIFE INSURANCE	350	-108
GILEAD SCIENCES	455	-97
COCA-COLA	328	-93

Company	2017 rank	Rank loss from 2016
MASSACHUSETTS MUTUAL LIFE INS.	357	-87
ERICSSON	500	-81
NATIONAL AUSTRALIA BANK	485	-80
FUJITSU	313	-76
UNICREDIT GROUP	402	-74
LLOYDS BANKING GROUP	189	-68
CRRC	365	-67
DATONG COAL MINE GROUP	497	-67
ACHMEA	472	-63
RITEAID	387	-62

NOTES

DEFINITIONS AND EXPLANATIONS

METHODOLOGY

Companies are ranked by total revenues for their respective fiscal years ended on or before March 31, 2018. All companies on the list must publish financial data and report part or all of their figures to a government agency. Figures are as reported, and comparisons are with the prior year's figures as originally reported for that year. *Fortune* does not restate the prior year's figures for changes in accounting.

REVENUES

Revenue figures include consolidated subsidiaries and reported revenues from discontinued operations, but exclude excise taxes. For banks, revenue is the sum of gross interest income and gross non-interest income. For insurance companies, revenue includes premium and annuity income, investment income, realized capital gains or losses, and other income, but excludes deposits.

PROFITS

Profits are shown after taxes, extraordinary credits or charges, cumulative effects of accounting changes, and noncontrolling (minority) interests, but before preferred dividends. Figures in parentheses indicate a loss. Profit declines of more than 100% reflect swings from 2016 profits to 2017 losses. Profits for partnerships and cooperatives are reported but are not comparable with those of the other companies on the list because they are not taxed on a comparable basis. Profits for mutual insurance companies are based on statutory accounting. Revenue and profit figures for non-U.S. companies have been converted to U.S. dollars at the average exchange rate during each company's fiscal year [ended Dec. 31, 2017, unless otherwise noted].

BALANCE SHEET

Assets shown are those at the company's fiscal year-end. Stockholders' equity is the sum of capital stock, paid-in capital, and retained earnings on the same date. Noncontrolling (minority) interest is not included. Figures for non-U.S. companies have been converted to U.S. dollars at the exchange rate at each company's fiscal year-end.

EMPLOYEES

The figure shown is either a fiscal year-end or yearly average number, as published by the company. Where the breakdown between full- and part-time employees is supplied, a part-time employee is counted as one half of a full-time employee.

MEDIANS

The medians for profit changes from 2016 do not include companies that lost money in 2016 or lost money in both 2016 and 2017, because no meaningful percentage changes can be calculated in such cases.

CREDITS

This year's *Fortune* Global 500 was prepared under the direction of list editor Scott DeCarlo. Financial statements and annual reports were reviewed by reporter Douglas Elam, accounting specialist Rhona Altschuler, and markets editor Kathleen Smyth. Zhang Dan provided figures for Chinese companies. *Fortune's* Business Information Database administrator, Scott Shield, supplied technical support. The data verification process was aided substantially by S&P Global Market Intelligence and Thomson Reuters.

FOOTNOTES

- [†] Figures prepared in accordance with International Accounting Standards.
- [§] Figures prepared in accordance with U.S. Generally Accepted Accounting Principles.
- [¶] Includes revenues from discontinued operations.
- [Ⓐ] A cooperative.
- [Ⓔ] Excise taxes have been deducted.
- [Ⓖ] Government owned 50% or more.
- [⒫] A partnership.
- ¹ Changed name from Wal-Mart Stores, Feb. 1, 2018.
- ² Figures are for fiscal year ended Jan. 31, 2018.
- ³ Company is incorporated in Britain. Executive offices are in the Netherlands.
- ⁴ Figures are for fiscal year ended March 31, 2018.
- ⁵ Figures are for fiscal year ended Sept. 30, 2017.
- ⁶ Company is incorporated in Jersey. Executive offices are in Switzerland.
- ⁷ Acquired Whole Foods Market (2016 rank: 26), Aug. 28, 2017.
- ⁸ Acquired Time Warner (2017 rank: 379), June 14, 2018.
- ⁹ Figures are for fiscal year ended June 30, 2017.
- ¹⁰ Figures are for fiscal year ended Aug. 31, 2017.
- ¹¹ Company's senior preferred stock is owned by the U.S. Treasury, which also holds a warrant to purchase 79.9% of the common stock.
- ¹² Changed name from China Resources National, Dec. 30, 2017.
- ¹³ Acquired China Guodian (2016 rank: 397) and changed name from Shenhua Group, Nov. 22, 2017.
- ¹⁴ Figures are for fiscal year ended Feb. 28, 2018.
- ¹⁵ Dow Chemical merged with DuPont (2016 rank: 438) to form holding company, Aug. 31, 2017. Prior year figures and rank are for Dow Chemical, which was deemed the accounting acquirer.
- ¹⁶ Changed name from Statoil, May 15, 2018.
- ¹⁷ Figures are for fiscal year ended May 31, 2017.
- ¹⁸ Company is incorporated in the Cayman Islands. Executive offices are in China.
- ¹⁹ Figures are for fiscal year ended Oct. 31, 2017.
- ²⁰ Acquired government's 51.1% stake in Hindustan Petroleum (2016 rank: 384), Jan. 31, 2018. Hindustan is a consolidated subsidiary under "pooling of interests" method of accounting.
- ²¹ Changed fiscal year—end from June to December. Comparison is with fiscal year ended June 30, 2016.
- ²² Figures are for fiscal year ended July 31, 2017.
- ²³ Changed name from HCA Holdings, May 8, 2017.
- ²⁴ Company is incorporated in Bermuda. Executive offices are in the U.S.
- ²⁵ Spun off from Deconomy (2017 rank: 486), July 12, 2017 and changed name from Metro Wholesale & Food Specialist.
- ²⁶ Company is incorporated in Bermuda. Executive offices are in Hong Kong.
- ²⁷ Figures are for fiscal year ended Nov. 30, 2017.
- ²⁸ Figures are for fiscal year ended April 30, 2017.
- ²⁹ Figures include operations for entire cooperative, including members.
- ³⁰ Changed name from Tesoro, Aug. 1, 2017.
- ³¹ Company is incorporated in the Cayman Islands. Executive offices are in Hong Kong.
- ³² Acquired by AT&T (2017 rank: 20), June 14, 2018.
- ³³ Company is incorporated in Curaçao. Executive offices are in the U.S.
- ³⁴ Company reports sale of physical commodities on a gross basis.
- ³⁵ Spun off DXC Technology (2017 rank: 484), April 1, 2017.
- ³⁶ Reorganized as a new holding company, Oct. 18, 2017.
- ³⁷ Changed name from Suning Commerce Group, Feb. 7, 2018.
- ³⁸ Company is incorporated in Spain. Executive offices are in Britain.
- ³⁹ Changed name from Yango Financial Holding Group, April 16, 2018.
- ⁴⁰ Profit figure is not available.
- ⁴¹ Formed through the spinoff by HPE (2017 rank: 409) of its enterprise services business and reverse merger with Computer Sciences, April 1, 2017.
- ⁴² Spun off "new" Metro (2017 rank: 269), July 12, 2017, and changed name from Metro.

THE TOP 50 EMPLOYERS

RANK	Company	500 rank	No. of employees
1	WALMART	1	2,300,000
2	CHINA NATIONAL PETROLEUM	4	1,470,193
3	CHINA POST GROUP	113	948,239
4	STATE GRID	2	913,546
5	HON HAI PRECISION INDUSTRY	24	803,126
6	SINOPEC GROUP	3	667,793
7	VOLKSWAGEN	7	642,292
8	COMPASS GROUP	413	588,112
9	U.S. POSTAL SERVICE	123	573,614
10	AMAZON.COM	18	566,000
11	AGRICULTURAL BANK OF CHINA	40	491,578
12	DEUTSCHE POST DHL GROUP	119	472,208
13	GAZPROM	49	469,600
14	CHINA MOBILE COMMUNICATIONS	53	467,532
15	INDUSTRIAL & COMMER. BANK OF CHINA	26	453,048
16	AVIATION INDUSTRY CORP. OF CHINA	161	452,178
17	KROGER	39	449,000
18	JARDINE MATHESON	283	444,000
19	ACCENTURE	316	425,000
20	CHINA RESOURCES	86	423,169
21	HOME DEPOT	57	413,000
22	CHINA TELECOMMUNICATIONS	141	412,868
23	FEDEX	155	404,336
24	BOSCH GROUP	75	402,166
25	INTERNATIONAL BUSINESS MACHINES	92	397,800
26	CARREFOUR	68	378,923
27	BERKSHIRE HATHAWAY	10	377,000
28	SIEMENS	66	372,000
29	CHINA CONSTRUCTION BANK	31	370,415
30	TOYOTA MOTOR	6	369,124
31	EDEKA ZENTRALE	310	369,000
32	PACIFIC CONSTRUCTION GROUP	96	365,425
33	CHINA RAILWAY CONSTRUCTION	58	364,964
34	UNITED PARCEL SERVICE	138	346,415
35	TARGET	116	345,000
36	PING AN INSURANCE	29	342,550
37	AUCHAN HOLDING	156	341,349
38	TESCO	102	327,916
39	NESTLÉ	69	323,000
40	SAMSUNG ELECTRONICS	12	320,671
41	ROSNEFT OIL	115	318,000
42	CHINA ENERGY INVESTMENT	101	313,264
43	GENERAL ELECTRIC	41	313,000
44	BANK OF CHINA	46	311,133
45	DEUTSCHE BAHN	211	310,935
46	SBERBANK	205	310,277
47	EXOR GROUP	19	307,637
48	HITACHI	79	307,275
49	CK HUTCHISON HOLDINGS	374	300,000
50	CHINA SOUTHERN POWER GRID	110	299,842
	THE GLOBAL 500 MEDIAN		92,476

HOW THE COMPANIES STACK UP

Apple held on to its title as the world's most profitable company—just barely. The iPhone maker edged out British American Tobacco, which got a 670% boost in profits thanks to a pair of one-time gains from its acquisition of Reynolds American and from the U.S. tax reform legislation.



Sales of the iPhone X helped drive another year of blockbuster profits for Apple.

BIGGEST PROFITS

RANK	500 rank	2017 profits \$ millions	Profits % change from 2016	RANK	500 rank	2017 profits \$ millions	Profits % change from 2016
1	11	48,351.0	5.8	26	49	12,249.9	[13.9]
2	453	48,327.8	670.4	27	16	11,863.9	25.8
3	10	44,940.0	86.7	28	368	11,339.3	10.3
4	26	42,323.7	1.0	29	451	10,999.0	202.8
5	12	36,575.4	89.3	30	53	10,932.0	13.7
6	31	35,845.2	2.9	31	90	10,798.0	335.6
7	37	30,101.0	129.3	32	331	10,580.6	71.0
8	20	29,450.0	127.0	33	15	10,558.0	50.5
9	40	28,550.4	3.1	34	168	10,390.3	2.7
10	46	25,509.2	3.0	35	213	10,379.4	11.1
11	47	24,441.0	[1.2]	36	264	9,895.0	180.9
12	80	22,714.0	161.2	37	1	9,862.0	[27.7]
13	6	22,510.1	33.2	38	51	9,716.6	28.0
14	62	22,183.0	1.1	39	300	9,673.1	49.1
15	187	21,308.0	195.3	40	212	9,609.0	[10.5]
16	71	21,204.0	26.2	41	146	9,601.0	[6.9]
17	9	19,710.0	151.4	42	30	9,561.3	68.0
18	60	18,232.0	1.8	43	2	9,533.4	[0.4]
19	274	15,934.0	56.0	44	271	9,506.9	82.6
20	135	15,326.0	45.9	45	442	9,414.0	269.8
21	29	13,181.4	40.3	46	85	9,377.5	[28.8]
22	7	13,107.3	120.8	47	302	9,335.0	4.9
23	5	12,977.0	183.7	48	33	9,195.0	—
24	205	12,869.0	59.3	49	176	8,980.0	[4.4]
25	52	12,662.0	[35.0]	50	177	8,932.5	4.5
						2,130.4	12.2

THE GLOBAL 500 MEDIAN

BIGGEST INCREASES IN REVENUES

RANK	500rank	Revenues % change from 2016	2017 revenues \$ millions
1	484	222.8	24,556.0
2	197	156.9	51,219.3
3	101	102.4	75,522.4
4	400	99.4	29,423.6
5	442	79.7	26,636.3
6	375	69.8	31,676.4
7	272	67.1	40,786.0
8	300	60.6	37,770.8
9	471	56.4	25,052.4
10	234	55.8	45,649.5
11	331	53.8	35,178.8
12	360	50.0	32,901.6
13	323	48.8	35,794.2
14	362	47.2	32,588.4
15	274	47.1	40,653.0
16	111	46.5	72,766.2
17	353	45.7	33,572.0
18	230	44.6	46,018.6
19	264	43.4	41,581.0
20	344	42.5	34,204.0
21	315	40.2	36,775.0
22	399	40.1	29,473.5
23	32	39.1	136,420.7
24	454	38.6	26,108.3
25	361	38.4	32,711.5
26	181	37.8	53,964.5
27	295	35.9	38,390.0
28	431	35.4	27,488.7
29	432	34.3	27,480.0
30	363	33.8	32,584.0
31	150	33.4	61,187.0
32	148	32.7	62,303.6
33	488	32.6	27,792.0
34	63	32.4	93,896.6
35	256	32.3	42,638.1
36	499	31.5	23,583.2
37	433	31.3	27,390.0
38	270	31.2	40,928.6
39	453	31.2	26,128.2
40	345	31.2	34,195.7
41	8	31.1	244,582.0
42	267	31.0	41,171.9
43	18	30.8	177,866.0
44	147	30.2	62,683.0
45	452	29.9	26,223.0
46	5	29.9	311,870.0
47	371	29.9	31,942.2
48	118	29.0	70,890.6
49	98	28.9	76,764.8
50	167	28.4	57,989.4
THE GLOBAL 500 MEDIAN		6.8	43,433.9

BIGGEST INCREASES IN PROFITS

RANK	500rank	Profits % change from 2016	2017 profits \$ millions
1	387	23,178.3	943.5
2	8	2,847.0	3,389.0
3	178	2,204.5	1,526.7
4	481	1,820.1	57.3
5	485	1,453.8	4,023.8
6	234	1,148.9	489.3
7	476	948.2	3,435.1
8	453	670.4	48,327.8
9	195	631.5	2,165.9
10	97	554.9	4,429.8
11	170	544.3	7,996.0
12	95	529.9	2,206.5
13	458	511.8	566.0
14	427	487.8	623.3
15	139	475.9	2,783.1
16	370	457.3	113.5
17	136	401.3	4,010.0
18	90	335.6	10,798.0
19	14	318.9	5,777.0
20	183	298.7	2,448.0
21	442	269.8	9,414.0
22	180	234.9	1,550.2
23	356	232.5	3,770.0
24	67	228.4	5,106.0
25	451	202.8	10,999.0
26	364	201.6	1,061.8
27	360	198.4	106.3
28	187	195.3	21,308.0
29	105	194.3	3,238.5
30	131	192.3	3,432.0
31	464	184.2	452.5
32	5	183.7	12,977.0
33	264	180.9	9,895.0
34	273	171.7	63.0
35	80	161.2	22,714.0
36	127	156.8	4,568.0
37	9	151.4	19,710.0
38	199	150.0	167.4
39	473	149.9	1,547.0
40	19	140.9	1,569.1
41	324	139.7	8,246.7
42	186	134.2	2,870.9
43	63	132.4	7,182.3
44	37	129.3	30,101.0
45	20	127.0	29,450.0
46	320	126.6	1,280.5
47	84	124.9	1,483.9
48	474	123.7	761.2
49	118	123.1	2,048.2
50	353	122.4	3,856.3
THE GLOBAL 500 MEDIAN		12.2	2,130.4

RANKED WITHIN COUNTRIES

The U.S. still rules the Global 500, but China is gaining fast. The number of U.S.-based companies on this year's list fell from 132 to 126. China, meanwhile, added two companies for a total of 111—up from just 29 a decade ago. The U.K., moving toward Brexit, saw its total drop by three companies.



Sinopec workers at a natural-gas purification plant in China's Sichuan province.

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
AUSTRALIA 7 COMPANIES			
1	WESFARMERS Perth	195	51,599.7
2	WOOLWORTHS GROUP Bella Vista	228	46,178.9
3	BHP BILLITON Melbourne	296	38,285.0
4	COMMONWEALTH BANK OF AUSTRALIA Sydney	348	33,886.9
5	WESTPAC BANKING Sydney	414	28,564.5
6	AUSTRALIA & NEW ZEALAND BANKING GROUP Docklands	448	26,282.7
7	NATIONAL AUSTRALIA BANK Docklands	485	24,549.8
TOTAL			249,347.5

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
BELGIUM 1 COMPANY			
1	ANHEUSER-BUSCH INBEV Leuven	170	56,444.0
TOTAL			56,444.0

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
BRAZIL 7 COMPANIES			
1	PETROBRAS Rio de Janeiro	73	88,827.0
2	ITAU UNIBANCO HOLDING São Paulo	133	66,286.6
3	BANCO BRADESCO Osasco	166	58,061.8
4	BANCO DO BRASIL Brasília	175	55,268.6
5	JBS São Paulo	199	51,117.6
6	VALE Rio de Janeiro	325	35,713.0
7	ULTRAPAR HOLDINGS São Paulo	470	25,064.6
TOTAL			380,339.2

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
BRITAIN 20 COMPANIES			
1	BP London	8	244,582.0
2	PRUDENTIAL London	50	111,458.0
3	HSBC HOLDINGS London	90	79,637.0
4	TESCO Welwyn Garden City	102	75,405.4

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
5	AVIVA London	143	63,933.6
6	VODAFONE GROUP Newbury	158	59,838.2
7	LEGAL & GENERAL GROUP London	172	55,999.4
8	LLOYDS BANKING GROUP London	189	52,422.4
9	SSE Perth	265	41,382.8
10	RIO TINTO GROUP London	278	40,030.0
11	GLAXOSMITHKLINE Brentford	290	38,867.8
12	J. SAINSBURY London	303	37,711.3
13	CENTRICA Windsor	318	36,082.7
14	BARCLAYS London	336	34,506.6
15	BT GROUP London	377	31,438.9
16	COMPASS GROUP Chertsey	413	28,577.6
17	ANGLO AMERICAN London	449	26,243.0
18	BRITISH AMERICAN TOBACCO London	453	26,128.2
19	INTERNATIONAL AIRLINES GROUP Harmondsworth	460	25,894.4
20	BAE SYSTEMS London	498	23,591.6
TOTAL			1,133,730.9

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
BRITAIN/NETHERLANDS 1 COMPANY			
1	UNILEVER London	153	60,548.4
TOTAL			60,548.4

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
CANADA 12 COMPANIES			
1	MANULIFE FINANCIAL Toronto, Ontario	241	44,941.1
2	BROOKFIELD ASSET MANAGEMENT Toronto, Ontario	272	40,786.0
3	POWER CORP. OF CANADA Montreal, Quebec	282	39,493.2
4	MAGNA INTERNATIONAL Aurora, Ontario	287	38,946.0
5	ROYAL BANK OF CANADA Toronto, Ontario	292	38,551.2
6	ALIMENTATION COUCHE-TARD Laval, Quebec	299	37,904.5
7	GEORGE WESTON Toronto, Ontario	308	37,211.6
8	TORONTO-DOMINION BANK Toronto, Ontario	337	34,500.6

RANK	Company, Headquarters	500rank	REVENUES \$ millions
9	ENBRIDGE Calgary, Alberta	345	34,195.7
10	BANK OF NOVA SCOTIA Toronto, Ontario	430	27,554.5
11	ONEX Toronto, Ontario	447	26,290.0
12	SUNCOR ENERGY Calgary, Alberta	476	24,793.4
TOTAL			425,167.8

CHINA 111 COMPANIES

1	STATE GRID Beijing	2	348,903.1
2	SINOPEC GROUP Beijing	3	326,953.0
3	CHINA NATIONAL PETROLEUM Beijing	4	326,007.6
4	CHINA STATE CONSTRUCTION ENGINEERING Beijing	23	156,070.8
5	INDUSTRIAL & COMMERCIAL BANK OF CHINA Beijing	26	153,021.3
6	PING AN INSURANCE Shenzhen	29	144,196.8
7	CHINA CONSTRUCTION BANK Beijing	31	138,594.1
8	SAIC MOTOR Shanghai	36	128,819.3
9	AGRICULTURAL BANK OF CHINA Beijing	40	122,365.5
10	CHINA LIFE INSURANCE Beijing	42	120,224.1
11	BANK OF CHINA Beijing	46	115,422.7
12	CHINA MOBILE COMMUNICATIONS Beijing	53	110,158.5
13	CHINA RAILWAY ENGINEERING GROUP Beijing	56	102,767.1
14	CHINA RAILWAY CONSTRUCTION Beijing	58	100,854.8
15	DONGFENG MOTOR Wuhan	65	93,293.8
16	HUAWEI INVESTMENT & HOLDING Shenzhen	72	89,311.4
17	CHINA RESOURCES Hong Kong	86	82,184.1
18	CHINA NATIONAL OFFSHORE OIL Beijing	87	81,482.2
19	CHINA COMMUNICATIONS CONSTRUCTION Beijing	91	79,416.9
20	PACIFIC CONSTRUCTION GROUP Urumqi	96	77,204.5
21	SINOCHEM GROUP Beijing	98	76,764.8
22	CHINA ENERGY INVESTMENT Beijing	101	75,522.4
23	CHINA MINMETALS Beijing	109	72,997.4
24	CHINA SOUTHERN POWER GRID Guangzhou	110	72,787.3
25	AMER INTERNATIONAL GROUP Shenzhen	111	72,766.2
26	CHINA POST GROUP Beijing	113	72,197.3
27	PEOPLE'S INSURANCE CO. OF CHINA Beijing	117	71,579.1
28	COFCO Beijing	122	69,669.1
29	BEIJING AUTOMOTIVE GROUP Beijing	124	69,591.3
30	CHINA FAW GROUP Changchun	125	69,524.4
31	TEWOO GROUP Tianjin	132	66,577.4
32	CHINA NORTH INDUSTRIES GROUP Beijing	140	64,646.3
33	CHINA TELECOMMUNICATIONS Beijing	141	63,974.0
34	CITIC GROUP Beijing	149	61,316.2
35	AVIATION INDUSTRY CORP. OF CHINA Beijing	161	59,262.5
36	CHINA BAOWU STEEL GROUP Shanghai	162	59,255.1
37	CHEMCHINA Beijing	167	57,989.4
38	BANK OF COMMUNICATIONS Shanghai	168	57,711.4
39	JD.COM Beijing	181	53,964.5
40	POWERCHINA Beijing	182	53,870.1
41	SHANDONG WEIQIAO PIONEERING GROUP Shandong	185	53,203.0
42	SINOPHARM Beijing	194	51,844.4
43	GUANGZHOU AUTOMOBILE INDUSTRY GROUP Guangzhou	202	50,322.7
44	CHINA MERCHANTS BANK Shenzhen	213	47,950.7
45	CHINA PACIFIC INSURANCE (GROUP) Shanghai	220	47,318.8
46	ALUMINUM CORP. OF CHINA Beijing	222	46,683.5
47	SHANGHAI PUDONG DEVELOPMENT BANK Shanghai	227	46,295.2
48	CHINA EVERGRANDE GROUP Shenzhen	230	46,018.6
49	SHANDONG ENERGY GROUP Jinan	234	45,649.5
50	HENGLI GROUP Suzhou City	235	45,562.8

RANK	Company, Headquarters	500rank	REVENUES \$ millions
51	INDUSTRIAL BANK Fuzhou	237	45,491.0
52	HBIS GROUP Shijiazhuang	239	45,390.2
53	LENVOV GROUP Hong Kong	240	45,349.9
54	CHINA SOUTH INDUSTRIES GROUP Beijing	242	44,785.4
55	CHINA NATIONAL BUILDING MATERIAL GROUP Beijing	243	44,701.2
56	CHINA SHIPBUILDING INDUSTRY Beijing	245	44,431.0
57	CHINA MINSHENG BANKING Beijing	251	43,297.5
58	GREENLAND HOLDING GROUP Shanghai	252	42,970.1
59	SINOMACH Beijing	256	42,638.1
60	ZHEJIANG GEELY HOLDING GROUP Hangzhou	267	41,171.9
61	WUCHAN ZHONGDA GROUP Hangzhou	270	40,928.6
62	CHINA UNITED NETWORK COMMUNICATIONS Beijing	273	40,663.5
63	CHINA MERCHANTS GROUP Hong Kong	280	39,970.8
64	JARDINE MATHESON Hong Kong	283	39,456.0
65	SHAANXI YANCHANG PETROLEUM (GROUP) Xi'an	288	38,897.8
66	CHINA HUANENG GROUP Beijing	289	38,872.0
67	SHAANXI COAL & CHEMICAL INDUSTRY Xi'an	294	38,482.6
68	AIA GROUP Hong Kong	295	38,330.0
69	ALIBABA GROUP HOLDING Hangzhou	300	37,770.8
70	CHINA POLY GROUP Beijing	312	37,001.9
71	CHINA EVERBRIGHT GROUP Beijing	322	35,840.2
72	MIDEA GROUP Foshan	323	35,794.2
73	TENCENT HOLDINGS Shenzhen	331	35,178.8
74	CHINA VANKE Shenzhen	332	35,117.4
75	CHINA ENERGY ENGINEERING GROUP Beijing	333	35,048.3
76	CHINA COSCO SHIPPING Shanghai	335	34,667.8
77	NOBLE GROUP Hong Kong	339	34,420.8
78	CHINA AEROSPACE SCIENCE & TECHNOLOGY Beijing	343	34,253.6
79	CHINA AEROSPACE SCIENCE & INDUSTRY Beijing	346	34,073.0
80	COUNTRY GARDEN HOLDINGS Foshan	353	33,572.0
81	JIZHONG ENERGY GROUP Xingtai	359	33,187.8
82	XIAMEN ITG HOLDING GROUP Xiamen	360	32,901.6
83	CEDAR HOLDINGS GROUP Guangzhou	361	32,711.5
84	XIAMEN CGD Xiamen	362	32,588.4
85	JIANGSU SHAGANG GROUP Zhongjiagang	364	32,560.5
86	CHINA ELECTRONICS Beijing	369	31,990.4
87	JIANGXI COPPER Guixi	370	31,964.1
88	CHINA NATIONAL AVIATION FUEL GROUP Beijing	371	31,942.2
89	CK HUTCHISON HOLDINGS Hong Kong	374	31,892.4
90	XIAMEN XIANGYU GROUP Xiamen City	375	31,676.4
91	XINXING CATHAY INTERNATIONAL GROUP Beijing	381	31,078.2
92	CRRC Beijing	385	30,634.1
93	CHINA ELECTRONICS TECHNOLOGY GROUP Beijing	388	30,175.5
94	CHINA STATE SHIPBUILDING Beijing	393	29,796.9
95	STATE POWER INVESTMENT Beijing	395	29,726.5
96	CHINA HUADIAN Beijing	397	29,611.8
97	YANKUANG GROUP Shandong	399	29,473.5
98	SUNING.COM GROUP Nanjing	427	27,805.7
99	ANSTEEL GROUP Anshan	428	27,792.0
100	SHOUGANG GROUP Beijing	431	27,488.7
101	XINJIANG GUANGHUI INDUSTRY INVESTMENT Urumqi	456	26,106.0
102	YANGUO LONGKING GROUP Fuzhou	464	25,605.1
103	CHINA TAIPING INSURANCE GROUP Hong Kong	465	25,597.5
104	CHINA DATANG Beijing	468	25,299.2
105	SHANXI JINCHENG ANTHRACITE COAL MINING Jincheng	481	24,658.7
106	TAIKANG INSURANCE GROUP Beijing	489	24,058.3
107	YANGQUAN COAL INDUSTRY GROUP Yangquan	494	23,792.8
108	SHANXI LUAN MINING GROUP Changzhi	495	23,784.5

RANKED WITHIN COUNTRIES

RANK	Company, Headquarters	500rank	REVENUES \$ millions
109	HENAN ENERGY & CHEMICAL Zhengzhou	496	23,699.4
110	DATONG COAL MINE GROUP Datong	497	23,697.5
111	QINGDAO HAIER Qingdao	499	23,563.2
TOTAL			6,765,493.8

DENMARK 1 COMPANY

1	MAERSK GROUP Copenhagen	305	37,500.0
TOTAL			37,500.0

FINLAND 1 COMPANY

1	NOKIA Espoo	457	26,091.7
TOTAL			26,091.7

FRANCE 28 COMPANIES

1	AXA Paris	27	149,460.9
2	TOTAL Courbevoie	28	149,099.0
3	BNP PARIBAS Paris	44	117,374.7
4	CARREFOUR Boulogne-Billancourt	68	91,276.3
5	CRÉDIT AGRICOLE Paris	82	84,222.2
6	ELECTRICITÉ DE FRANCE Paris	94	78,490.3
7	ENGIE Courbevoie	104	75,278.8
8	PEUGEOT Rueil-Malmaison	108	73,505.7
9	SOCIÉTÉ GÉNÉRALE Paris	121	69,948.2
10	RENAULT Boulogne-Billancourt	134	66,246.5
11	GROUPE BPCE Paris	151	61,127.8
12	AUCHAN HOLDING Croix	156	60,027.6
13	FINATIS Paris	196	51,578.0
14	CNP ASSURANCES Paris	201	50,737.4
15	CHRISTIAN DIOR Paris	208	49,221.0
16	ORANGE Paris	225	46,324.1
17	VINCI Rueil-Malmaison	226	46,301.5
18	SAINT-GOBAIN Courbevoie	231	46,001.7
19	SANOFI Paris	271	40,809.7
20	BOUYGUES Paris	307	37,259.0
21	SNCF MOBILITÉS St. Denis	320	35,880.4
22	L'ORÉAL Clichy	392	29,925.8
23	AIR FRANCE-KLM GROUP Paris	406	29,064.1
24	VEOLIA ENVIRONNEMENT Paris	419	28,320.8
25	SCHNEIDER ELECTRIC Rueil-Malmaison	424	27,890.7
26	DANONE Paris	426	27,816.3
27	LA POSTE Paris	434	27,177.2
28	MICHELIN Clermont-Ferrand	478	24,753.7
TOTAL			1,675,119.4

GERMANY 32 COMPANIES

1	VOLKSWAGEN Wolfsburg	7	260,028.4
2	DAIMLER Stuttgart	16	185,235.4
3	ALLIANZ Munich	38	123,531.6
4	BMW GROUP Munich	51	111,231.4
5	SIEMENS Munich	66	91,584.7
6	BOSCH GROUP Stuttgart	75	87,997.2
7	DEUTSCHE TELEKOM Bonn	81	84,481.4
8	UNIPER Düsseldorf	88	81,427.8
9	BASF Ludwigshafen	112	72,677.2

RANK	Company, Headquarters	500rank	REVENUES \$ millions
10	DEUTSCHE POST DHL GROUP Bonn	119	70,544.5
11	MUNICH RE GROUP Munich	120	70,143.3
12	BAYER Leverkusen	143	51,933.1
13	CONTINENTAL Hanover	206	49,608.2
14	DEUTSCHE BAHN Berlin	211	48,124.2
15	RWE Essen	214	47,832.3
16	THYSSENKRUPP Essen	218	47,388.6
17	DEUTSCHE BANK Frankfurt	223	46,511.2
18	E.ON Essen	254	42,794.7
19	ZF FRIEDRICHSHAFEN Friedrichshafen	268	41,080.2
20	METRO Düsseldorf	269	40,957.2
21	LUFTHANSA GROUP Cologne	277	40,105.2
22	TALANX Hanover	291	38,602.6
23	FRESENIUS Bad Hamburg	298	38,196.8
24	EDEKA ZENTRALE Hamburg	310	37,125.4
25	DZ BANK Frankfurt	355	33,562.8
26	PHOENIX PHARMA Mannheim	417	28,401.3
27	SAP Walldorf	446	26,445.6
28	ENERGIE BADEN-WÜRTTEMBERG Karlsruhe	477	24,769.4
29	ADIDAS Herzogenaurach	480	24,669.1
30	HERAEDS HOLDING Hanau	482	24,622.3
31	CECONOMY Düsseldorf	486	24,432.1
32	BOEHRINGER INGELHEIM Ingelheim	491	23,888.0
TOTAL			2,019,932.2

INDIA 7 COMPANIES

1	INDIAN OIL New Delhi	137	65,915.8
2	RELIANCE INDUSTRIES Mumbai	148	62,303.6
3	DIL & NATURAL GAS Dehradun	197	51,219.3
4	STATE BANK OF INDIA Mumbai	216	47,551.1
5	TATA MOTORS Mumbai	232	45,841.7
6	BHARAT PETROLEUM Mumbai	314	36,851.1
7	RAJESH EXPORTS Bengaluru	405	29,124.9
TOTAL			338,807.5

INDONESIA 1 COMPANY

1	PERTAMINA Jakarta	253	42,959.3
TOTAL			42,959.3

IRELAND 4 COMPANIES

1	ACCENTURE Dublin	316	36,765.5
2	CRH Dublin	382	31,069.4
3	JOHNSON CONTROLS INTERNATIONAL Cork	389	30,172.0
4	MEDTRONIC Dublin	396	29,710.0
TOTAL			127,716.9

ITALY 6 COMPANIES

1	ASSICURAZIONI GENERALI Trieste	59	100,552.1
2	ENEL Rome	83	84,134.3
3	ENI Rome	89	80,006.4
4	POSTE ITALIANE Rome	304	37,695.2
5	INTESA SANPAOLO Turin	324	35,751.9
6	UNICREDIT GROUP Milan	402	29,257.2
TOTAL			367,397.1

Ranked within countries

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
JAPAN 52 COMPANIES			
1	TOYOTA MOTOR <i>Tokyo</i>	6	265,172.0
2	HONDA MOTOR <i>Tokyo</i>	30	138,645.8
3	JAPAN POST HOLDINGS <i>Tokyo</i>	45	116,616.0
4	NISSAN MOTOR <i>Yokohama</i>	54	107,868.2
5	NIPPON TELEGRAPH & TELEPHONE <i>Tokyo</i>	55	106,500.1
6	HITACHI <i>Tokyo</i>	79	84,558.7
7	SOFTBANK GROUP <i>Tokyo</i>	85	82,664.7
8	SONY <i>Tokyo</i>	97	77,115.8
9	JXTG HOLDINGS <i>Tokyo</i>	99	76,629.0
10	AEDN <i>Chiba</i>	103	75,338.8
11	PANASONIC <i>Osaka</i>	114	72,045.0
12	NIPPON LIFE INSURANCE <i>Osaka</i>	126	68,684.2
13	MITSUBISHI <i>Tokyo</i>	129	68,301.4
14	MARUBENI <i>Tokyo</i>	130	68,057.2
15	DAI-ICHI LIFE HOLDINGS <i>Tokyo</i>	145	63,521.6
16	TOYOTA TSUSHO <i>Nagoya</i>	165	58,586.4
17	MITSUBISHI UFJ FINANCIAL GROUP <i>Tokyo</i>	177	54,768.8
18	SEVEN & I HOLDINGS <i>Tokyo</i>	179	54,217.1
19	TOKYO ELECTRIC POWER <i>Tokyo</i>	186	52,809.1
20	SUMITOMO MITSUI FINANCIAL GROUP <i>Tokyo</i>	192	52,026.0
21	NIPPON STEEL & SUMITOMO METAL <i>Tokyo</i>	198	51,163.9
22	ITOCHU <i>Osaka</i>	204	49,732.4
23	TOKIO MARINE HOLDINGS <i>Tokyo</i>	209	48,731.0
24	MS&AD INSURANCE GROUP HOLDINGS <i>Tokyo</i>	221	47,094.9
25	DENSO <i>Kariya</i>	229	46,106.1
26	KDDI <i>Tokyo</i>	236	45,507.6
27	MIITSUI <i>Tokyo</i>	246	44,155.3
28	SUMITOMO <i>Tokyo</i>	250	43,570.2
29	MITSUBISHI ELECTRIC <i>Tokyo</i>	279	39,984.9
30	MEIJI YASUDA LIFE INSURANCE <i>Tokyo</i>	309	37,159.7
31	MITSUBISHI HEAVY INDUSTRIES <i>Tokyo</i>	311	37,103.2
32	FUJITSU <i>Tokyo</i>	313	36,990.9
33	CANON <i>Tokyo</i>	317	36,388.4
34	TOSHIBA <i>Tokyo</i>	326	35,630.0
35	AISIN SEIKI <i>Kariya</i>	329	35,281.1
36	DAIWA HOUSE INDUSTRY <i>Osaka</i>	342	34,261.7
37	SOMPO HOLDINGS <i>Tokyo</i>	347	34,027.5
38	SUZUKI MOTOR <i>Hamamatsu</i>	348	33,911.7
39	SUMITOMO LIFE INSURANCE <i>Osaka</i>	350	33,820.7
40	MITSUBISHI CHEMICAL HOLDINGS <i>Tokyo</i>	352	33,615.5
41	JFE HOLDINGS <i>Tokyo</i>	358	33,202.2
42	BRIDGESTONE <i>Tokyo</i>	365	32,494.6
43	MIZUHO FINANCIAL GROUP <i>Tokyo</i>	367	32,141.8
44	MAZDA MOTOR <i>Hiroshima</i>	378	31,355.7
45	SUBARU <i>Tokyo</i>	384	30,734.7
46	IDEMITSU KOSAN <i>Tokyo</i>	398	29,605.5
47	MEDIPAL HOLDINGS <i>Tokyo</i>	418	28,397.8
48	KANSAI ELECTRIC POWER <i>Osaka</i>	420	28,283.4
49	SUMITOMO ELECTRIC INDUSTRIES <i>Osaka</i>	425	27,819.6
50	EAST JAPAN RAILWAY <i>Tokyo</i>	443	26,627.4
51	CHUBU ELECTRIC POWER <i>Nagoya</i>	462	25,753.2
52	NEC <i>Tokyo</i>	463	25,673.3
TOTAL			2,900,461.8

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
LUXEMBOURG 1 COMPANY			
1	ARCELORMITTAL <i>Luxembourg</i>	127	68,679.0
TOTAL			68,679.0

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
MALAYSIA 1 COMPANY			
1	PETRONAS <i>Kuala Lumpur</i>	191	52,027.7
TOTAL			52,027.7

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
MEXICO 4 COMPANIES			
1	PEMEX <i>Mexico City</i>	107	73,850.4
2	AMERICA MÓVIL <i>Mexico City</i>	180	54,006.0
3	CFE <i>Mexico City</i>	454	26,108.3
4	FOMENTO ECONÓMICO MEXICANO <i>Monterrey</i>	487	24,340.8
TOTAL			178,305.5

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
NETHERLANDS 14 COMPANIES			
1	ROYAL DUTCH SHELL <i>The Hague</i>	5	311,870.0
2	EXOR GROUP <i>Amsterdam</i>	19	161,676.5
3	AIRBUS GROUP <i>Leiden</i>	105	75,260.8
4	ROYAL AHOLD DELHAIZE <i>Zaandam</i>	118	70,890.6
5	AEGON <i>The Hague</i>	139	65,437.1
6	ING GROUP <i>Amsterdam</i>	171	56,347.3
7	LOUIS DREYFUS <i>Rotterdam</i>	173	55,440.0
8	LYONDELBASELL INDUSTRIES <i>Rotterdam</i>	338	34,484.0
9	ROYAL PHILIPS <i>Amsterdam</i>	423	28,071.1
10	ALTICE <i>Amsterdam</i>	445	26,489.3
11	RANDSTAD HOLDING <i>Diemen</i>	450	26,233.5
12	ACHMEA <i>Zeist</i>	472	24,872.0
13	HEINEKEN HOLDING <i>Amsterdam</i>	475	24,831.4
14	RABOBANK GROUP <i>Utrecht</i>	492	23,812.4
TOTAL			985,716.0

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
NORWAY 1 COMPANY			
1	EQUINOR <i>Stavanger</i>	150	61,187.0
TOTAL			61,187.0

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
POLAND 1 COMPANY			
1	PKN ORLEN GROUP <i>Plack</i>	469	25,256.1
TOTAL			25,256.1

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
RUSSIA 4 COMPANIES			
1	GAZPROM <i>Moscow</i>	49	111,982.6
2	LUKOIL <i>Moscow</i>	63	93,896.6
3	ROSNEFT OIL <i>Moscow</i>	115	72,027.9
4	SBERBANK <i>Moscow</i>	205	49,697.5
TOTAL			327,604.6

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
SAUDI ARABIA 1 COMPANY			
1	SABIC <i>Riyadh</i>	281	39,939.1
TOTAL			39,939.1

RANKED WITHIN COUNTRIES

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
SINGAPORE 3 COMPANIES			
1	TRAFIGURA GROUP Singapore	32	136,420.7
2	WILMAR INTERNATIONAL Singapore	248	43,846.3
3	FLEX Singapore	466	25,441.3
TOTAL			205,708.3

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
SOUTH KOREA 16 COMPANIES			
1	SAMSUNG ELECTRONICS Suwon	12	211,940.2
2	HYUNDAI MOTOR Seoul	78	85,259.0
3	SK HOLDINGS Seoul	84	83,543.8
4	LG ELECTRONICS Seoul	178	54,314.2
5	POSCO Seoul	184	53,244.3
6	KOREA ELECTRIC POWER Jeollanam-do	188	52,491.5
7	KIA MOTORS Seoul	219	47,360.3
8	HANWHA Seoul	244	44,590.3
9	HYUNDAI MOBIS Seoul	380	31,090.6
10	SAMSUNG LIFE INSURANCE Seoul	421	28,272.5
11	GS CALTEX Seoul	438	26,821.2
12	SK HYNIX Gyeonggi	442	26,636.3
13	SAMSUNG C&T Seoul	458	25,901.7
14	KB FINANCIAL GROUP Seoul	471	25,052.4
15	LG DISPLAY Seoul	483	24,584.6
16	CJ CORP. Seoul	493	23,795.8
TOTAL			844,898.7

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
SPAIN 9 COMPANIES			
1	BANCO SANTANDER Madrid	77	87,400.9
2	TELEFÓNICA Madrid	164	58,624.2
3	BANCO BILBAO VIZCAYA ARGENTARIA Bilbao	224	46,507.8
4	REPSOL Madrid	262	41,862.5
5	ACS Madrid	284	39,337.8
6	IBERDROLA Bilbao	330	35,240.4
7	INDITEX Arteixo	408	28,887.2
8	GAS NATURAL FENOSA Madrid	429	27,652.9
9	MAPFRE GROUP Madrid	439	26,817.2
TOTAL			392,330.9

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
SWEDEN 2 COMPANIES			
1	VOLVO Göteborg	286	39,171.9
2	ERICSSON Stockholm	500	23,556.3
TOTAL			62,728.2

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
SWITZERLAND 14 COMPANIES			
1	GLENCORE Baar	14	205,476.0
2	NESTLÉ Vevey	69	91,221.7
3	ZURICH INSURANCE GROUP Zurich	142	63,961.0
4	ROCHE GROUP Basel	169	56,634.2
5	NOVARTIS Basel	203	50,135.0
6	SWISS RE Zurich	257	42,487.0
7	UBS GROUP Zurich	306	37,317.3
8	ABB Zurich	341	34,312.0
9	CHUBB Zurich	366	32,243.0

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
10	CREDIT SUISSE GROUP Zurich	373	31,900.3
11	COOP GROUP Basel	412	28,600.6
12	MIGROS GROUP Zurich	415	28,518.3
13	ADECCO GROUP Zurich	441	26,669.9
14	LAFARGEHOLCIM Jona	444	26,545.3
TOTAL			158,021.6

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
TAIWAN 9 COMPANIES			
1	HON HAI PRECISION INDUSTRY New Taipei City	24	154,699.2
2	PEGATRON Taipei	285	39,237.6
3	QUANTA COMPUTER Taoyuan	354	33,563.8
4	TAIWAN SEMICONDUCTOR MANUFACTURING Hsinchu	368	32,126.4
5	COMPAL ELECTRONICS Taipei	404	29,175.2
6	CATHAY LIFE INSURANCE Taipei	410	28,804.5
7	WISTRON Taipei	432	27,480.0
8	CPC Kaohsiung	436	27,105.5
9	FUBON FINANCIAL HOLDING Taipei	479	24,688.3
TOTAL			398,880.5

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
THAILAND 1 COMPANY			
1	PTT Bangkok	163	58,819.0
TOTAL			58,819.0

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
TURKEY 1 COMPANY			
1	KOÇ HOLDING Istanbul	435	27,108.4
TOTAL			27,108.4

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
UNITED ARAB EMIRATES 1 COMPANY			
1	EMIRATES GROUP Dubai	474	24,836.9
TOTAL			24,836.9

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
U.S. 126 COMPANIES			
1	WALMART Bentonville, Ark.	1	500,343.0
2	EXXON MOBIL Irving, Texas	9	244,363.0
3	BERKSHIRE HATHAWAY Omaha, Neb.	10	242,137.0
4	APPLE Cupertino, Calif.	11	229,234.0
5	MCKESSON San Francisco, Calif.	13	208,357.0
6	UNITEDHEALTH GROUP Minnetonka, Minn.	15	201,159.0
7	CVS HEALTH Woonsocket, R.I.	17	184,765.0
8	AMAZON.COM Seattle, Wash.	18	177,866.0
9	AT&T Dallas, Texas	20	160,546.0
10	GENERAL MOTORS Detroit, Mich.	21	157,311.0
11	FORD MOTOR Dearborn, Mich.	22	156,776.0
12	AMERISOURCEBERGEN Chesterbrook, Pa.	25	153,143.8
13	CHEVRON San Ramon, Calif.	33	134,533.0
14	CARDINAL HEALTH Dublin, Ohio	34	129,976.0
15	COSTCO WHOLESALE Issaquah, Wash.	35	129,025.0
16	VERIZON COMMUNICATIONS New York, N.Y.	37	126,034.0
17	KROGER Cincinnati, Ohio	39	122,662.0
18	GENERAL ELECTRIC Boston, Mass.	41	122,274.0
19	WALGREENS BOOTS ALLIANCE Deerfield, Ill.	43	118,214.0
20	JPMORGAN CHASE & CO. New York, N.Y.	47	113,899.0

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
21	FANNIE MAE Washington, D.C.	48	112,394.0
22	ALPHABET Mountain View, Calif.	52	110,855.0
23	HOME DEPOT Atlanta, Ga.	57	100,904.0
24	BANK OF AMERICA CORP. Charlotte, N.C.	60	100,264.0
25	EXPRESS SCRIPTS HOLDING St. Louis, Mo.	61	100,064.6
26	WELLS FARGO San Francisco, Calif.	62	97,741.0
27	BOEING Chicago, Ill.	64	93,392.0
28	PHILLIPS 66 Houston, Texas	67	91,568.0
29	ANTHEM Indianapolis, Ind.	70	90,039.4
30	MICROSOFT Redmond, Wash.	71	89,950.0
31	VALERO ENERGY San Antonio, Texas	74	88,407.0
32	CITIGROUP New York, N.Y.	76	87,966.0
33	COMCAST Philadelphia, Pa.	80	84,526.0
34	INTERNATIONAL BUSINESS MACHINES Armonk, N.Y.	92	79,139.0
35	DELL TECHNOLOGIES Round Rock, Texas	93	78,660.0
36	STATE FARM INSURANCE COS. Bloomington, Ill.	95	78,330.8
37	JOHNSON & JOHNSON New Brunswick, N.J.	100	76,450.0
38	FREDDIE MAC McLean, Va.	106	74,676.0
39	TARGET Minneapolis, Minn.	116	71,879.0
40	U.S. POSTAL SERVICE Washington, D.C.	123	69,636.0
41	LOWE'S Mooresville, N.C.	128	68,619.0
42	MARATHON PETROLEUM Findlay, Ohio	131	67,610.0
43	PROCTER & GAMBLE Cincinnati, Ohio	135	66,217.0
44	METLIFE New York, N.Y.	136	66,153.0
45	UNITED PARCEL SERVICE Atlanta, Ga.	138	65,872.0
46	PEPSICO Purchase, N.Y.	144	63,525.0
47	INTEL Santa Clara, Calif.	146	62,761.0
48	DOWDUPONT Midland, Mich.	147	62,683.0
49	ARCHER DANIELS MIDLAND Chicago, Ill.	152	60,828.0
50	AETNA Hartford, Conn.	154	60,535.0
51	FEDEX Memphis, Tenn.	155	60,319.0
52	ALBERTSONS COS. Boise, Idaho	157	59,924.6
53	UNITED TECHNOLOGIES Farmington, Conn.	158	59,837.0
54	PRUDENTIAL FINANCIAL Newark, N.J.	160	59,689.0
55	SYSCO Houston, Texas	174	55,371.1
56	WALT DISNEY Burbank, Calif.	176	55,137.0
57	HUMANA Louisville, Ky.	183	53,767.0
58	PFIZER New York, N.Y.	187	52,546.0
59	HP Palo Alto, Calif.	190	52,056.0
60	LOCKHEED MARTIN Bethesda, Md.	200	51,048.0
61	AMERICAN INTERNATIONAL GROUP New York, N.Y.	207	49,520.0
62	CENTENE St. Louis, Mo.	210	48,572.0
63	CISCO SYSTEMS San Jose, Calif.	212	48,005.0
64	HCA HEALTHCARE Nashville, Tenn.	215	47,653.0
65	ENERGY TRANSFER EQUITY Dallas, Texas	217	47,487.0
66	BUNGE White Plains, N.Y.	233	45,794.0
67	CATERPILLAR Deerfield, Ill.	238	45,462.0
68	NATIONWIDE Columbus, Ohio	247	43,939.9
69	MORGAN STANLEY New York, N.Y.	249	43,642.0
70	LIBERTY MUTUAL INSURANCE GROUP Boston, Mass.	255	42,687.0
71	NEW YORK LIFE INSURANCE New York, N.Y.	258	42,296.0
72	GOLDMAN SACHS GROUP New York, N.Y.	259	42,254.0
73	AMERICAN AIRLINES GROUP Fort Worth, Texas	260	42,207.0
74	BEST BUY Richfield, Minn.	261	42,151.0
75	CIGNA Bloomfield, Conn.	263	41,616.0
76	CHARTER COMMUNICATIONS Stamford, Conn.	264	41,581.0
77	DELTA AIR LINES Atlanta, Ga.	266	41,244.0

RANK	Company, Headquarters	500 rank	REVENUES \$ millions
78	FACEBOOK Menlo Park, Calif.	274	40,653.0
79	HONEYWELL INTERNATIONAL Morris Plains, N.J.	275	40,534.0
80	MERCK Kenilworth, N.J.	276	40,122.0
81	ALLSTATE Northbrook, Ill.	293	38,524.0
82	TYSON FOODS Springdale, Ark.	297	38,260.0
83	UNITED CONTINENTAL HOLDINGS Chicago, Ill.	301	37,736.0
84	ORACLE Redwood City, Calif.	302	37,728.0
85	TECH DATA Clearwater, Fla.	315	36,775.0
86	TIAA New York, N.Y.	319	36,025.3
87	TJX Framingham, Mass.	321	35,864.7
88	AMERICAN EXPRESS New York, N.Y.	327	35,583.0
89	COCA-COLA Atlanta, Ga.	328	35,410.0
90	PUBLIX SUPER MARKETS Lakeland, Fla.	334	34,836.8
91	NIKE Beaverton, Ore.	340	34,350.0
92	ANDEAVOR San Antonio, Texas	344	34,204.0
93	WORLD FUEL SERVICES Miami, Fla.	351	33,695.5
94	EXELON Chicago, Ill.	356	33,531.0
95	MASSACHUSETTS MUTUAL LIFE INSURANCE Springfield, Mass.	357	33,495.4
96	CONOCOPHILLIPS Houston, Texas	363	32,584.0
97	CHS Inver Grove Heights, Minn.	372	31,934.8
98	3M St. Paul, Minn.	376	31,657.0
99	TIME WARNER New York, N.Y.	379	31,271.0
100	GENERAL DYNAMICS Falls Church, Va.	383	30,973.0
101	SCHLUMBERGER Houston, Texas	386	30,440.0
102	RITE AID Camp Hill, Pa.	387	30,215.4
103	UNITED SERVICES AUTOMOBILE ASSN. San Antonio, Texas	390	30,015.8
104	CAPITAL ONE FINANCIAL McLean, Va.	391	29,999.0
105	DEERE Moline, Ill.	394	29,737.7
106	INTL FCSSTONE New York, N.Y.	400	29,423.6
107	NORTHWESTERN MUTUAL Milwaukee, Wis.	401	29,331.0
108	ENTERPRISE PRODUCTS PARTNERS Houston, Texas	403	29,241.5
109	TRAVELERS COS. New York, N.Y.	407	28,902.0
110	HEWLETT PACKARD ENTERPRISE Palo Alto, Calif.	409	28,871.0
111	PHILIP MORRIS INTERNATIONAL New York, N.Y.	411	28,748.0
112	TWENTY-FIRST CENTURY FOX New York, N.Y.	416	28,500.0
113	ABBVIE North Chicago, Ill.	422	28,216.0
114	ABBOTT LABORATORIES Abbott Park, Ill.	433	27,390.0
115	PROGRESSIVE Mayfield Village, Ohio	437	26,839.0
116	ARROW ELECTRONICS Centennial, Colo.	440	26,812.5
117	KRAFT HEINZ Pittsburgh, Pa.	451	26,232.0
118	PLAINS GP HOLDINGS Houston, Texas	452	26,223.0
119	GILEAD SCIENCES Foster City, Calif.	455	26,107.0
120	MONDELEZ INTERNATIONAL Deerfield, Ill.	459	25,896.0
121	NORTHROP GRUMMAN Falls Church, Va.	461	25,803.0
122	RAYTHEON Waltham, Mass.	467	25,348.0
123	MACY'S Cincinnati, Ohio	473	24,837.0
124	DXC TECHNOLOGY Tysons, Va.	484	24,556.0
125	US FOODS HOLDING Rosemont, Ill.	488	24,147.2
126	U.S. BANCORP Minneapolis, Minn.	490	23,996.0
TOTAL			8,881,643.4

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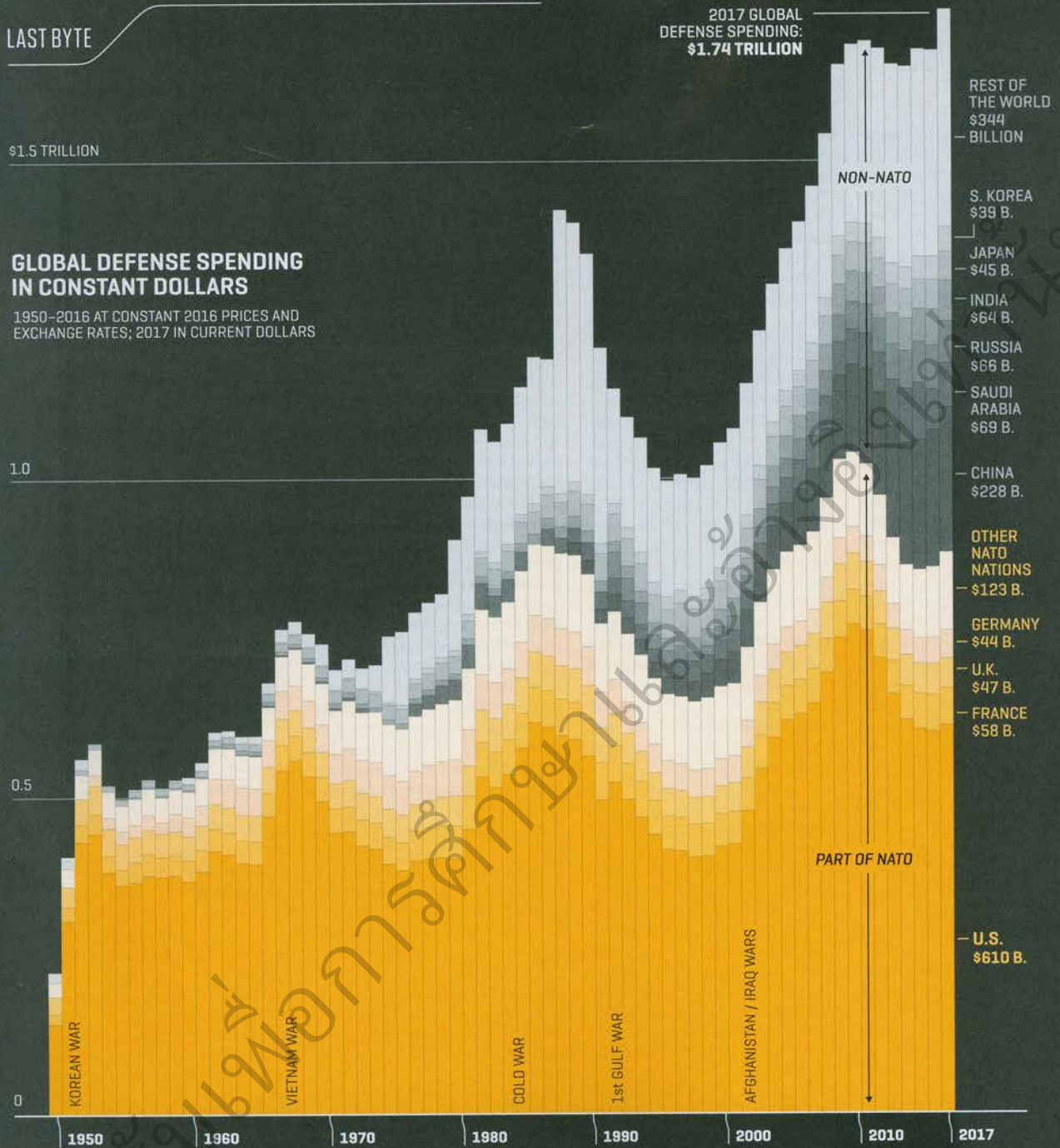
Company	Country	Global 500 rank
ABB	SWITZERLAND	341
ABBOTT LABORATORIES	U.S.	433
ABBVIE	U.S.	422
ACCENTURE	IRELAND	316
ACHMEA	NETHERLANDS	472
ACS	SPAIN	284
ADECCO GROUP	SWITZERLAND	441
ADIDAS	GERMANY	480
AEGON	NETHERLANDS	139
AEON	JAPAN	103
AETNA	U.S.	154
AGRICULTURAL BANK OF CHINA	CHINA	40
AIA GROUP	CHINA	295
AIRBUS GROUP	NETHERLANDS	105
AIR FRANCE-KLM GROUP	FRANCE	406
AISIN SEIKI	JAPAN	329
ALBERTSONS COS.	U.S.	157
ALIBABA GROUP HOLDING	CHINA	300
ALIMENTATION COUCHE-TARD	CANADA	299
ALLIANZ	GERMANY	38
ALLSTATE	U.S.	293
ALPHABET	U.S.	52
ALTICE	NETHERLANDS	445
ALUMINUM CORP. OF CHINA	CHINA	222
AMAZON.COM	U.S.	18
AMÉRICA MÓVIL	MEXICO	180
AMERICAN AIRLINES GROUP	U.S.	260
AMERICAN EXPRESS	U.S.	327
AMERICAN INTERNATIONAL GROUP	U.S.	207
AMER INTERNATIONAL GROUP	CHINA	111
AMERISOURCEBERGEN	U.S.	25
ANDEAVOR	U.S.	344
ANGLO AMERICAN	BRITAIN	449
ANHEUSER-BUSCH INBEV	BELGIUM	170
ANSTEEL GROUP	CHINA	428
ANTHEM	U.S.	70
APPLE	U.S.	11
ARCELDORMITAL	LUXEMBOURG	127
ARCHER DANIELS MIDLAND	U.S.	152
ARROW ELECTRONICS	U.S.	440
ASSICURAZIONI GENERALI	ITALY	58
AT&T	U.S.	20
AUCHAN HOLDING	FRANCE	156
AUSTRALIA & NEW ZEAL. BNKG.	AUSTRALIA	448
AVIATION INDUSTRY CORP. OF CHINA	CHINA	161
AVIVA	BRITAIN	143
AXA	FRANCE	27
BAE SYSTEMS	BRITAIN	498
BANCO BILBAO VIZCAYA ARGENTARIA	SPAIN	224
BANCO BRÁDESCO	BRAZIL	166
BANCO DO BRASIL	BRAZIL	175
BANCO SANTANDER	SPAIN	77
BANK OF AMERICA CORP.	U.S.	60
BANK OF CHINA	CHINA	46
BANK OF COMMUNICATIONS	CHINA	168
BANK OF NOVA SCOTIA	CANADA	430
BARCLAYS	BRITAIN	336
BASF	GERMANY	112
BAYER	GERMANY	193
BEIJING AUTOMOTIVE GROUP	CHINA	124
BERKSHIRE HATHAWAY	U.S.	10
BEST BUY	U.S.	261
BHARAT PETROLEUM	INDIA	314
BHP BILLITON	AUSTRALIA	296
BMW	GERMANY	51
BNP PARIBAS	FRANCE	44
BOEHRINGER INGELHEIM	GERMANY	491
BOEING	U.S.	64
BOSCH GROUP	GERMANY	75
BOUYGUES	FRANCE	307
BP	BRITAIN	8
BRIDGESTONE	JAPAN	365
BRITISH AMERICAN TOBACCO	BRITAIN	453
BROOKFIELD ASSET MANAGEMENT	CANADA	272
BT GROUP	BRITAIN	377
BUNGE	U.S.	233
CANON	JAPAN	317
CAPITAL ONE FINANCIAL	U.S.	391
CARDINAL HEALTH	U.S.	34
CARREFOUR	FRANCE	68
CATERPILLAR	U.S.	238
CATHAY LIFE INSURANCE	TAIWAN	410
CECONOMY	GERMANY	486
CEDAR HOLDINGS GROUP	CHINA	361
CENTENE	U.S.	210
CENTRICA	BRITAIN	318
CFE	MEXICO	454
CHARTER COMMUNICATIONS	U.S.	264
CHEMCHINA	CHINA	167
CHEVRON	U.S.	33
CHINA AEROSPACE SCIENCE & INDUSTRY	CHINA	346
CHINA AEROSPACE SCIENCE & TECH.	CHINA	348
CHINA BAOWU STEEL GROUP	CHINA	162
CHINA COMMUNICATIONS CONSTR.	CHINA	91
CHINA CONSTRUCTION BANK	CHINA	31
CHINA COSCO SHIPPING	CHINA	335
CHINA DATANG	CHINA	468
CHINA ELECTRONICS	CHINA	369
CHINA ELECTRONICS TECHNOLOGY GROUP	CHINA	388
CHINA ENERGY ENGINEERING	CHINA	333
CHINA ENERGY INVESTMENT	CHINA	101
CHINA EVERBRIGHT GROUP	CHINA	322
CHINA EVERGRANDE GROUP	CHINA	230
CHINA FAW GROUP	CHINA	125
CHINA HUADIAN	CHINA	397
CHINA HUANENG GROUP	CHINA	289
CHINA LIFE INSURANCE	CHINA	42
CHINA MERCHANTS BANK	CHINA	213
CHINA MERCHANTS GROUP	CHINA	280
CHINA MINMETALS	CHINA	109
CHINA MINSHENG BANKING	CHINA	251
CHINA MOBILE COMMUNICATIONS	CHINA	53
CHINA NATIONAL AVIATION FUEL GROUP	CHINA	371
CHINA NATIONAL BLDG. MATERIAL GROUP	CHINA	243
CHINA NATIONAL OFFSHORE OIL	CHINA	87
CHINA NATIONAL PETROLEUM	CHINA	4
CHINA NORTH INDUSTRIES	CHINA	140
CHINA PACIFIC INSURANCE	CHINA	220
CHINA POLY GROUP	CHINA	312
CHINA POST GROUP	CHINA	113
CHINA RAILWAY CONSTRUCTION	CHINA	58
CHINA RAILWAY ENGINEERING	CHINA	56
CHINA RESOURCES	CHINA	86
CHINA SHIPBUILDING INDUSTRY	CHINA	245
CHINA SOUTHERN POWER GRID	CHINA	110
CHINA SOUTH INDUSTRIES GROUP	CHINA	242
CHINA STATE CONSTR. ENGINEERING	CHINA	23
CHINA STATE SHIPBUILDING	CHINA	393
CHINA TAIPING INSURANCE GROUP	CHINA	465
CHINA TELECOMMUNICATIONS	CHINA	141
CHINA UNITED NETWORK COMM.	CHINA	273
CHINA VANKE	CHINA	332
CHS	U.S.	372
CHUBB	SWITZERLAND	366
CHUBU ELECTRIC POWER	JAPAN	462
CIGNA	U.S.	263
CISCO SYSTEMS	U.S.	212
CITIC GROUP	CHINA	149
CITIGROUP	U.S.	76
CJ CORP.	SOUTH KOREA	493
CK HUTCHISON HOLDINGS	CHINA	374
CNP ASSURANCES	FRANCE	201
COCA-COLA	U.S.	328
COFCO	CHINA	122
COMCAST	U.S.	80
COMMONWEALTH BANK	AUSTRALIA	349
COMPAL ELECTRONICS	TAIWAN	404
COMPASS GROUP	BRITAIN	413
CONOCOPHILLIPS	U.S.	363
CONTINENTAL	GERMANY	206
COOP GROUP	SWITZERLAND	412
COSTCO WHOLESALE	U.S.	35
COUNTRY GARDEN HOLDINGS	CHINA	353
CPC	TAIWAN	436
CRÉDIT AGRICOLE	FRANCE	82
CREDIT SUISSE GROUP	SWITZERLAND	373
CRH	IRELAND	382
CRRC	CHINA	385
CVS HEALTH	U.S.	17
DAI-ICHI LIFE	JAPAN	145
DAIMLER	GERMANY	16
DAIWA HOUSE INDUSTRY	JAPAN	342
DANONE	FRANCE	426
DATONG COAL MINE GROUP	CHINA	497
DEERE	U.S.	394
DELL TECHNOLOGIES	U.S.	93
DELTA AIR LINES	U.S.	266
DENSO	JAPAN	229
DEUTSCHE BAHN	GERMANY	211
DEUTSCHE BANK	GERMANY	223
DEUTSCHE POST DHL GROUP	GERMANY	119
DEUTSCHE TELEKOM	GERMANY	81
DIOR (CHRISTIAN)	FRANCE	208
DISNEY (WALT)	U.S.	176
DONGFENG MOTOR	CHINA	65
DOWDUPONT	U.S.	147
DXC TECHNOLOGY	U.S.	484
DZ BANK	GERMANY	355
EAST JAPAN RAILWAY	JAPAN	443
EDEKA ZENTRALE	GERMANY	310
ELECTRICITÉ DE FRANCE	FRANCE	94
EMIRATES GROUP	U.A.E.	474
ENBRIDGE	CANADA	345
ENEL	ITALY	83
ENERGIE BADEN-WÜRTTEMBERG	GERMANY	477
ENERGY TRANSFER EQUITY	U.S.	217
ENGIE	FRANCE	104
ENI	ITALY	89
ENTERPRISE PRODUCTS	U.S.	403
E.ON	GERMANY	254
EQUINOR	NORWAY	150
ERICSSON	SWEDEN	500
EXELON	U.S.	356
EXOR GROUP	NETHERLANDS	19
EXPRESS SCRIPTS HOLDING	U.S.	61
EXXON MOBIL	U.S.	9
FACEBOOK	U.S.	274
FANNIE MAE	U.S.	48
FEDEX	U.S.	155
FINATIS	FRANCE	196
FLEX	SINGAPORE	466
FONTECO ECONÓMICO MEXICANO	MEXICO	487
FORD MOTOR	U.S.	22
FREDDIE MAC	U.S.	106
FRESENIUS	GERMANY	298
FUBON FINANCIAL HOLDING	TAIWAN	479
FUJITSU	JAPAN	313
GAS NATURAL FENOSA	SPAIN	429
GAZPROM	RUSSIA	49
GENERAL DYNAMICS	U.S.	383
GENERAL ELECTRIC	U.S.	41
GENERAL MOTORS	U.S.	21
GILEAD SCIENCES	U.S.	455
GLAXOSMITHKLINE	BRITAIN	290
GLENCORE	SWITZERLAND	14
GOLDMAN SACHS GROUP	U.S.	259
GREENLAND HOLDING GROUP	CHINA	252
GROUPE BPCE	FRANCE	151
GS CALTEX	SOUTH KOREA	438
GUANGZHOU AUTO. INDUSTRY GROUP	CHINA	202
HANWHA	SOUTH KOREA	244
HBIS GROUP	CHINA	239
HCA HEALTHCARE	U.S.	215
HEINEKEN GROUP	NETHERLANDS	475
HENAN ENERGY & CHEMICAL	CHINA	496
HENGLI GROUP	CHINA	235
HERACUS HOLDING	GERMANY	482
HEWLETT PACKARD ENTERPRISE	U.S.	409
HITACHI	JAPAN	79
HOME DEPOT	U.S.	57
HONDA MOTOR	JAPAN	30
HONEYWELL INTERNATIONAL	U.S.	275
HON HAI PRECISION INDUSTRY	TAIWAN	24
HP	U.S.	190
HSBC HOLDINGS	BRITAIN	90
HUAWEI INVESTMENT & HOLDING	CHINA	72
HUMANIA	U.S.	183
HYUNDAI MOBIS	SOUTH KOREA	380
HYUNDAI MOTOR	SOUTH KOREA	78
IBERDROLA	SPAIN	330
IDEMITSU KOSAN	JAPAN	398
INDIAN OIL	INDIA	137
INDITEX	SPAIN	408
INDUSTRIAL BANK	CHINA	237
INDUSTRIAL & COMMER. BANK OF CHINA	CHINA	26
ING GROUP	NETHERLANDS	171
INTEL	U.S.	146
INTERNATIONAL AIRLINES GROUP	BRITAIN	460
INTERNATIONAL BUSINESS MACHINES	U.S.	92
INTESA SANPAOLO	ITALY	324
INTL FCSTONE	U.S.	400
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JAPAN POST HOLDINGS JAPAN	45	MORGAN STANLEY U.S.	249	ROSNEFT OIL RUSSIA	115	3M U.S.	376
JARDINE MATHESON CHINA	283	MSGAD INSURANCE JAPAN	221	ROYAL AHOLD DELHAIZE NETHERLANDS	118	THYSSENKRUPP GERMANY	218
JBS BRAZIL	199	MUNICH RE GERMANY	120	ROYAL BANK OF CANADA CANADA	292	TIAA U.S.	319
JD.COM CHINA	181	NATIONAL AUSTRALIA BANK AUSTRALIA	485	ROYAL DUTCH SHELL NETHERLANDS	5	TIME WARNER U.S.	379
JFE HOLDINGS JAPAN	358	NATIONWIDE U.S.	247	ROYAL PHILIPS NETHERLANDS	423	TJX U.S.	321
JIANGSU SHAGANG GROUP CHINA	364	NEC JAPAN	463	RWE GERMANY	214	TOKIO MARINE HOLDINGS JAPAN	209
JIANGXI COPPER CHINA	370	NESTLÉ SWITZERLAND	69	SABIC SAUDI ARABIA	281	TOKYO ELECTRIC POWER JAPAN	486
JIZHONG ENERGY GROUP CHINA	359	NEW YORK LIFE INSURANCE U.S.	258	SAIC CHINA	36	TORONTO-DOMINION BANK CANADA	337
JOHNSON CONTROLS INTERNATIONAL IRELAND	389	NIKE U.S.	340	SAINSBURY (J.) BRITAIN	303	TOSHIBA JAPAN	326
JOHNSON & JOHNSON U.S.	100	NIPPON LIFE INSURANCE JAPAN	126	SAINT-GOBAIN FRANCE	231	TOTAL FRANCE	28
JPMORGAN CHASE & CO. U.S.	47	NIPPON STEEL & SUMITOMO METAL JAPAN	198	SAMSUNG C&T SOUTH KOREA	458	TOYOTA MOTOR JAPAN	6
JXTG HOLDINGS JAPAN	99	NIPPON TELEGRAPH & TELEPHONE JAPAN	55	SAMSUNG ELECTRONICS SOUTH KOREA	12	TOYOTA TSUSHO JAPAN	165
KANSAI ELECTRIC POWER JAPAN	420	NISSAN MOTOR JAPAN	54	SAMSUNG LIFE INSURANCE SOUTH KOREA	421	TRAFIGURA GROUP SINGAPORE	32
KB FINANCIAL GROUP SOUTH KOREA	471	NOBLE GROUP CHINA	339	SANDFI FRANCE	271	TRAVELERS COS. U.S.	407
KDDI JAPAN	236	NOKIA FINLAND	457	SAP GERMANY	446	TWENTY-FIRST CENTURY FOX U.S.	416
KIA MOTORS SOUTH KOREA	219	NORTHROP GRUMMAN U.S.	461	SBERBANK RUSSIA	205	TYSON FOODS U.S.	297
KOC HOLDING TURKEY	435	NORTHWESTERN MUTUAL U.S.	401	SCHLUMBERGER U.S.	386	UBS GROUP SWITZERLAND	306
KOREA ELECTRIC POWER SOUTH KOREA	188	NOVARTIS SWITZERLAND	203	SCHNEIDER ELECTRIC FRANCE	424	ULTRAPAR HOLDINGS BRAZIL	470
KRAFT HEINZ U.S.	451	OIL & NATURAL GAS INDIA	197	SEVEN & I HOLDINGS JAPAN	179	UNICREDIT GROUP ITALY	402
KROGER U.S.	39	ONEX CANADA	447	SHAAIXI COAL & CHEMICAL INDUSTRY CHINA	299	UNILEVER BRITAIN/NETHERLANDS	153
LAFARGEHOLCIM SWITZERLAND	444	ORACLE U.S.	302	SHAAIXI YANCHANG PETROLEUM CHINA	288	UNIPER GERMANY	88
LA POSTE FRANCE	434	ORANGE FRANCE	225	SHANDONG ENERGY GROUP CHINA	234	UNITED CONTINENTAL HOLDINGS U.S.	301
LEGAL & GENERAL GROUP BRITAIN	172	PACIFIC CONSTRUCTION GROUP CHINA	96	SHANDONG WEIQIAO PIONEERING CHINA	185	UNITED HEALTH GROUP U.S.	15
LENDOV GROUP CHINA	240	PANASONIC JAPAN	114	SHANGHAI PUJONG DEVEL. BANK CHINA	227	UNITED PARCEL SERVICE U.S.	138
LG DISPLAY SOUTH KOREA	483	PEGATRON TAIWAN	285	SHANGHAI JINCHENG ANTHRACITE COAL CHINA	481	UNITED SERVICES AUTO. ASSN. U.S.	390
LG ELECTRONICS SOUTH KOREA	178	PEMEX MEXICO	107	SHANXI LUAN MINING GROUP CHINA	495	UNITED TECHNOLOGIES U.S.	159
LIBERTY MUTUAL INSURANCE GROUP U.S.	255	PEOPLE'S INSURANCE CO. OF CHINA CHINA	117	SHOUGANG GROUP CHINA	431	U.S. BANCORP U.S.	490
LLOYDS BANKING GROUP BRITAIN	189	PEPSICO U.S.	144	SIEMENS GERMANY	66	US FOODS HOLDING U.S.	488
LOCKHEED MARTIN U.S.	200	PETAMINA INDONESIA	253	SINOCHEM CHINA	98	U.S. POSTAL SERVICE U.S.	123
L'ORÉAL FRANCE	392	PETROBRAS BRAZIL	73	SINOMACH CHINA	256	VALE BRAZIL	325
LOUIS DREYFUS NETHERLANDS	173	PETRONAS MALAYSIA	191	SINOPEC GROUP CHINA	3	VALERO ENERGY U.S.	74
LOWE'S U.S.	128	PEUGEOT FRANCE	108	SINOPHARM CHINA	194	VEOLIA ENVIRONNEMENT FRANCE	419
LUFTHANSA GROUP GERMANY	277	PFIZER U.S.	187	SK HOLDINGS SOUTH KOREA	84	VERIZON COMMUNICATIONS U.S.	37
LUKOIL RUSSIA	63	PHILIP MORRIS INTERNATIONAL U.S.	411	SK HYNIX SOUTH KOREA	442	VINCI FRANCE	226
LYONDELBASELL INDUSTRIES NETHERLANDS	338	PHILLIPS 66 U.S.	67	SNCF FRANCE	320	VODAFONE GROUP BRITAIN	158
MACY'S U.S.	473	PHOENIX PHARMA GERMANY	417	SOCIÉTÉ GÉNÉRALE FRANCE	121	VOLKSWAGEN GERMANY	7
MAERSK GROUP DENMARK	305	PING AN INSURANCE CHINA	29	SOFTBANK GROUP JAPAN	85	VOLVO SWEDEN	286
MAGNA INTERNATIONAL CANADA	287	PKN Orlen GROUP POLAND	469	SOMPO HOLDINGS JAPAN	347	WALGREENS BOOTS ALLIANCE U.S.	43
MANULIFE FINANCIAL CANADA	241	PLAINS GP HOLDINGS U.S.	452	SONY JAPAN	97	WALMART U.S.	1
MAPFRE GROUP SPAIN	439	POSCO SOUTH KOREA	184	SSE BRITAIN	265	WELLS FARGO U.S.	62
MARATHON PETROLEUM U.S.	131	POSTE ITALIANE ITALY	304	STATE BANK OF INDIA INDIA	216	WESFARMERS AUSTRALIA	195
MARUBENI JAPAN	130	POWERCHINA CHINA	182	STATE FARM INSURANCE COS. U.S.	95	WESTON (GEORGE) CANADA	308
MASSACHUSETTS MUTUAL LIFE U.S.	357	POWER CORP. OF CANADA CANADA	282	STATE GRID CHINA	2	WESTPAC BANKING AUSTRALIA	414
MAZDA MOTOR JAPAN	378	PROCTER & GAMBLE U.S.	135	STATE POWER INVESTMENT CHINA	395	WILMAR INTERNATIONAL SINGAPORE	248
MCKESSON U.S.	13	PROGRESSIVE U.S.	437	SUBARU JAPAN	384	WISTRON TAIWAN	432
MEDIPAL HOLDINGS JAPAN	418	PRUDENTIAL BRITAIN	50	SUMITOMO JAPAN	250	WOOLWORTHS GROUP AUSTRALIA	228
MEDTRONIC IRELAND	396	PRUDENTIAL FINANCIAL U.S.	160	SUMITOMO ELECTRIC INDUSTRIES JAPAN	425	WORLD FUEL SERVICES U.S.	351
MEIJI YASUDA LIFE INSURANCE JAPAN	809	PTT THAILAND	163	SUMITOMO LIFE INSURANCE JAPAN	350	WUCHAN ZHONGDA GROUP CHINA	270
MERCK U.S.	276	PUBLIC SUPER MARKETS U.S.	334	SUMITOMO MITSUI FINANCIAL GROUP JAPAN	192	XIAMEN CGO CHINA	362
METLIFE U.S.	136	QINGDAO HAIER CHINA	499	SUNCOR ENERGY CANADA	476	XIAMEN ITG HOLDING GROUP CHINA	360
METRO GERMANY	269	QUANTA COMPUTER TAIWAN	354	SUNING.COM GROUP CHINA	427	XIAMEN XIANGYU GROUP CHINA	375
MICHELIN FRANCE	478	RABOBANK NETHERLANDS	492	SUNING.COM GROUP CHINA	427	XINJIANG GUANGHUI INDUSTRY CHINA	456
MICROSOFT U.S.	71	RAJESH EXPORTS INDIA	405	SUZUKI MOTOR JAPAN	348	XINXING CATHAY INTERNATIONAL CHINA	381
MIDEA GROUP CHINA	323	RANDSTAD HOLDING NETHERLANDS	450	SWISS RE SWITZERLAND	257	YANGU LONGKING GROUP CHINA	464
MIGROS GROUP SWITZERLAND	415	RAYTHEON U.S.	467	TAIKANG INSURANCE GROUP CHINA	489	YANGQUAN COAL INDUSTRY GROUP CHINA	494
MITSUBISHI JAPAN	129	RELIANCE INDUSTRIES INDIA	148	TAIWAN SEMICONDUCTOR TAIWAN	368	YANKUANG GROUP CHINA	399
MITSUBISHI CHEMICAL HOLDINGS JAPAN	352	RENAULT FRANCE	134	TALANX GERMANY	291	ZF FRIEDRICHSHAFEN GERMANY	268
MITSUBISHI ELECTRIC JAPAN	279	REPSOL SPAIN	262	TARGET U.S.	116	ZHEJIANG GEELY HOLDING GROUP CHINA	267
MITSUBISHI HEAVY INDUSTRIES JAPAN	311	RIO TINTO GROUP BRITAIN	278	TATA MOTORS INDIA	232	ZURICH INSURANCE GROUP SWITZERLAND	142
MITSUBISHI UFJ FINANCIAL GROUP JAPAN	177	RITE AID U.S.	387	TECH DATA U.S.	315		
MITSUI JAPAN	246	ROCHE GROUP SWITZERLAND	169	TELEFÓNICA SPAIN	164		
MIZUHO FINANCIAL GROUP JAPAN	367			TENCENT HOLDINGS CHINA	331		
MONDELEZ INTERNATIONAL U.S.	459			TESCO BRITAIN	102		
				TEWOO GROUP CHINA	132		

\$1.5 TRILLION

GLOBAL DEFENSE SPENDING IN CONSTANT DOLLARS

1950-2016 AT CONSTANT 2016 PRICES AND EXCHANGE RATES; 2017 IN CURRENT DOLLARS



MILITARY BUDGETS ARE BOOMING

PRESIDENT TRUMP HAS made a habit of berating America's NATO allies for not spending enough on defense. But while Trump and his European counterparts bicker, the larger trend is clear: Military spending globally is at record levels. According to the Stockholm International Peace Research Institute (SIPRI), total defense expenditure globally was \$1.74 trillion in 2017, a new high when adjusted for inflation. China's \$228 billion defense budget was the world's second largest in 2017 and more than twice what it spent a decade ago. The U.S. remains by far the biggest spender. And in 2018 the Pentagon's budget will leap to some \$700 billion. —BRIAN O'KEEFE


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Do I have the right plan?

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