FORTUNE

DECEMBER 15, 2016

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2017 INVESTOR'S GUIDE

WHAT TO BUY, WHAT TO SELL, AND
HOW TO TURN SMALL BETS INTO BIG WINS

23 Stocks and Funds to Buy Right Now

How to Thrive in the Trump Economy

Dividend Stocks That Will Pay You Today

Go Global! Where to Find Hot Foreign Stocks

America's Colleges Flunk Money Management

Warren Buffett Goes Long on Clean Energy

Fund Giant Vanguard Flexes Its Muscles

ASIA PACIFIC EDITION NUMBER 16


ROLEX
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SWISS MADE
CELLINI TIME

CONTENTS

DECEMBER 15, 2016

VOLUME 174 /// NUMBER 8

FEATURES

INVESTOR'S GUIDE 2017

▲ ON THE COVER:
PHOTOGRAPH BY **TERU ONISHI**

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DEPARTMENTS

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CORRECTION

In "Out of the Box" [Dec. 1], we incorrectly identified the material Amazon uses for its gift bags. It is organza, not velvet. *Fortune* regrets the error.

TOM COOPER—GETTY IMAGES FOR BOOM TECHNOLOGY

© TOM COOPER—GETTY IMAGES FOR BOOM TECHNOLOGY

NO TIME TO WAIT

WHEN I WAS 37, my brother-in-law's next-door neighbor Tony told me to stop renting and buy an apartment. I couldn't afford it, I told him. "You won't be able to afford it next year either," he said. "Only by then, you'll have spent another year in rent money you'll never get back."

Within a month of that conversation, my wife and I put in a bid to buy our first home. The down payment check was the largest either of us had ever written, by a factor of at least 10. Then we spent more money we didn't have, to renovate. It was the best investment we ever made.

Well, until the next big investment.

When my wife and I decided to have a child, we both wondered how we would be able to afford one. (We had just bought an apartment, after all.) Years earlier, as a budding reporter, one of my first magazine pieces had been headlined "Pricing That Bundle of Joy." The story—which was little more than a tally of child-related expenses—had scared the heck out of me.

But, yes—as every Tony and Tina in my life told me it would be—having a daughter was, and is, the best thing either my wife or I have ever done.

When it comes to living, waiting to start has always been a sucker's game. And the same goes for investing. As the great sages tell us, you can't time the market. If you're building a nest egg for the long term, there is no "right" moment to get in.

That's one key takeaway from our 2017 Investor's Guide—a veritable bounty of insight, advice, and wealth-growing ideas that begins on page 36. As my colleague Matt Heimer, who shepherded this extraordinary package of stories, points out in the guide's introduction, anyone who reviewed a quick B-roll of 2016 would have seen a terrain that looked utterly inhospitable for investors. Corporate earnings floundered. Then came Brexit. Then came a Trump tsunami that the market commentariat had previously predicted would sink stocks.

"So how serious was the damage?" asks Heimer. As of late November, the S&P 500 was *up* 8.7%, including dividends, over the previous 12 months. And over the same period, *Fortune*'s picks from our 2016 Investor's Guide nearly doubled that gain—garnering a 16.7% return. So much for market timing.

There is little question that 2017 will offer its own share of scares: from the continued fallout of Brexit to a possible Frexit (or Italeave) to the ever present threat of a disabling cyberattack. And then there are the more endemic challenges of lofty stock valuations, ballooning budget deficits, and the turbulent end of a three-decade-long bull market in bonds. Add the gyrations of a new kingpin and Congress in Washington, and it's all likely to make investors' heads spin.

We're hoping this special double issue of *Fortune* can serve as an antidote. In the pages that follow, you'll find 34 of our own best stock and fund recommendations to get your investment portfolio soaring—and keep you grounded. We also offer 14 stock picks from our distinguished roundtable of expert investors.

Of course, you could wait another year or so until all this craziness calms down. But then someone will have to break the news to my friend Tony.

CLIFTON LEAF
Deputy Editor, *Fortune*
@CliftonLeaf

© TOM SCHIERLITZ—TRUNK ARCHIVE

Cannabiz Hype Is About to Go Up in Smoke

Voters love legal weed, but Trump's White House and market economics could harsh the industry's mellow. BY JENNIFER ALSEVER

ELECTIONS **THREE WEEKS AFTER** the November election, 10,000 marijuana industry officials gathered in Las Vegas for the industry's largest trade show, partying with celebrities like Jim Belushi to celebrate the promise of an industry poised to grow to $50 billion by 2026. After all, voters in eight states had just approved marijuana proposals, allowing either recreational pot sales or medical marijuana. California, which in 2018 will allow both recreational and ▷▷

▷▷ medical uses, will soon become the largest weed market in the nation, accounting for an estimated $6 billion in 2018.

But the celebratory vibe was hushed the next morning when President-elect Donald Trump announced that Sen. Jeff Sessions (R-Ala.) was his pick for U.S. attorney general. Sessions has been an outspoken opponent of the industry, telling a Senate meeting last spring, "Good people don't smoke marijuana." And ominously: "We need grown-ups in charge in Washington to say marijuana is not the kind of thing that ought to be legalized ... that it is, in fact, a very real danger."

Sessions' appointment means that marijuana legalization, while enormously popular with voters, could be on track to hit big roadblocks in a Trump administration—grim news for an industry that has already spent hundreds of millions gearing up for a coming pot bonanza. Says Aaron Herzberg, chief counsel for CalCann Holdings, a California marijuana real estate firm: "It's hard to imagine we'd make a 180 on marijuana, but nothing is impossible with Trump."

The uncertainty descends as the National Cannabis Industry Association pushes to open banking access for state-compliant marijuana businesses, ditch federal tax codes that force pot companies to pay triple the rates of other businesses, and decriminalize the drug nationwide.

But instead of preparing for greater victories, the industry now finds itself retrenching. Particularly at risk: budding pot companies. Smaller entrepreneurs have already found themselves edged out by cash-flush businesses like Native Roots, LivWell, and the Green Solution, which have laid the groundwork for chain stores and multistate expansion. In Denver, for example, 10 business owners control 20% of the market, with 1,046 licenses.

Big companies from other industries have started making plays for weed money too. In November, Constellation Brands, the alcohol giant that sells Corona, revealed it was looking at beverages that contain cannabis. Scotts Miracle-Gro Co. spent $255 million to acquire pot businesses that sell fertilizers, soils, and hydroponics equipment—and plans to invest another $150 million this year. This past summer Microsoft created a partnership with pot company Kind Financial to sell software that tracks marijuana plants from "seed to sale." And Big Tobacco has long seen smoking weed as both a threat and an opportunity to sell joints and marijuana-tobacco blends.

That leaves the country's new class of weed entrepreneurs in a precarious spot, particularly if expansion slows or stops. "You can't have a little grow and a little store," says Tim Cullen, owner of three dispensaries. "You'll have to do more than that to survive." ■

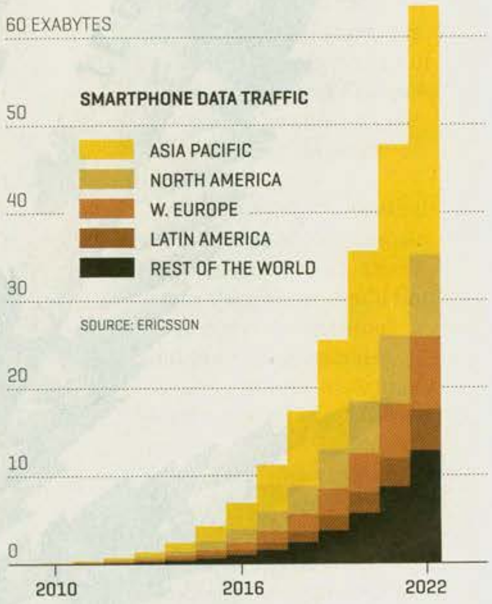
ANALYTICS

SEEING TRENDS IN THE DATA

■ TECH

THE MOBILE DATA SQUEEZE IS COMING

SMARTPHONE data use is exploding by almost every measure. In North America, mobile traffic increased 46% from last year, according to a recent report from telecom gear maker Ericsson, and it's expected to quintuple by 2022. Around the world, the numbers are equally dramatic. Credit the rise of video: It accounts for about half of all data traffic and is projected to soak up 75% by 2022. Look for carriers to start downgrading the average quality of their video definition as a result. AT&T, Sprint, and T-Mobile already have. **—AARON PRESSMAN**



■ TRADE

CUBA TANTALIZES U.S. INDUSTRY

Cuba gets more of its imports from Venezuela (about $3.2 billion) than from any other country. But as Cuba turns outward, it may mean opportunity for U.S. businesses, which are quite a bit closer geographically.

■ WHO'S WHO

TRUMP'S KEY ADVISERS BY THE NUMBERS

17

YEARS STEVEN MNUCHIN SPENT AT GOLDMAN SACHS

Trump's national finance chairman quit Goldman in 2002 to start a hedge fund [and finance movies], but his industry ties could complicate Trump's populist pledge to crack down on Wall Street.

35

AGE OF JARED KUSHNER, TRUMP'S SON-IN-LAW

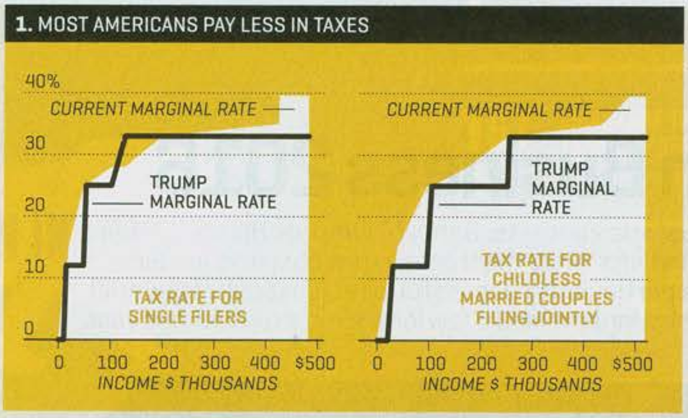
Like his father-in-law, Kushner is a New York real estate baron born into wealth and brand-new to politics. But he's become one of Trump's most trusted advisers and is primed to wield enormous influence in the White House—with or without a formal role.

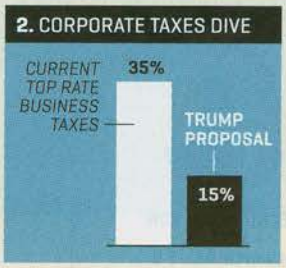
$3.9

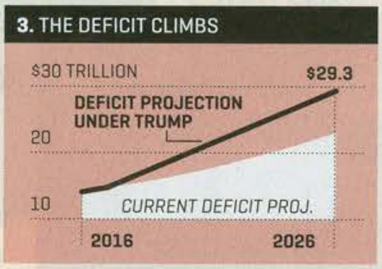
TRILLION IN ASSETS HELD BY COMMUNITY BANKS AND CREDIT UNIONS

That's the untapped power of small lenders that Jeb Hensarling, House financial services chairman, thinks could be unleashed by rewriting Dodd-Frank's capital requirements.

—TORY NEWMYER







SOURCES: TAX POLICY CENTER; CONGRESSIONAL BUDGET OFFICE

■ TAXES

ANATOMY OF A TRUMP TAX CUT

1. The Trump plan simplifies the tax code, combining seven tax brackets into three while raising the threshold at which workers begin paying income tax. Many married couples will see a substantial reduction, as will wealthy taxpayers, with the top rate dropping from 39.6% to 33%.

2. One of the most important elements of the plan: Corporate taxes dive from 35% to 15%. The new rules would also allow pass-through entities, such as sole proprietors, to be taxed at this low rate rather than at the higher personal rate. According to the Tax Policy Center, the plan has no provision to "limit the number of employees who would redefine themselves as sole proprietors." Dentists [and hedge funds], rejoice.

3. The cuts [plus the lack of commensurate budget reductions] would add $6 trillion more to the national debt relative to baseline projections.

4. Trump's plans would lower taxes for most Americans but would raise taxes on some large families and single parents because of the elimination of some exemptions. Take-home pay for the top 1% of earners could rise substantially.

—Chris Matthews

■ RETAIL

THIS MAY BE PEAK FIFTH AVENUE

Manhattan's Fifth Avenue again claimed the mantle of the world's priciest shopping district in 2016, with annual average rent at $3,000 per square foot. But the luxury mecca is slipping—rent is down 14% from last year—as online shopping and rising Asian markets threaten its title. —PHIL WAHBA

MOST EXPENSIVE SHOPPING STRIPS

$3,000 per square foot
NEW YORK UPPER FIFTH AVENUE

$2,878
HONG KONG CAUSEWAY BAY

$1,368
PARIS CHAMPS-ÉLYSÉES

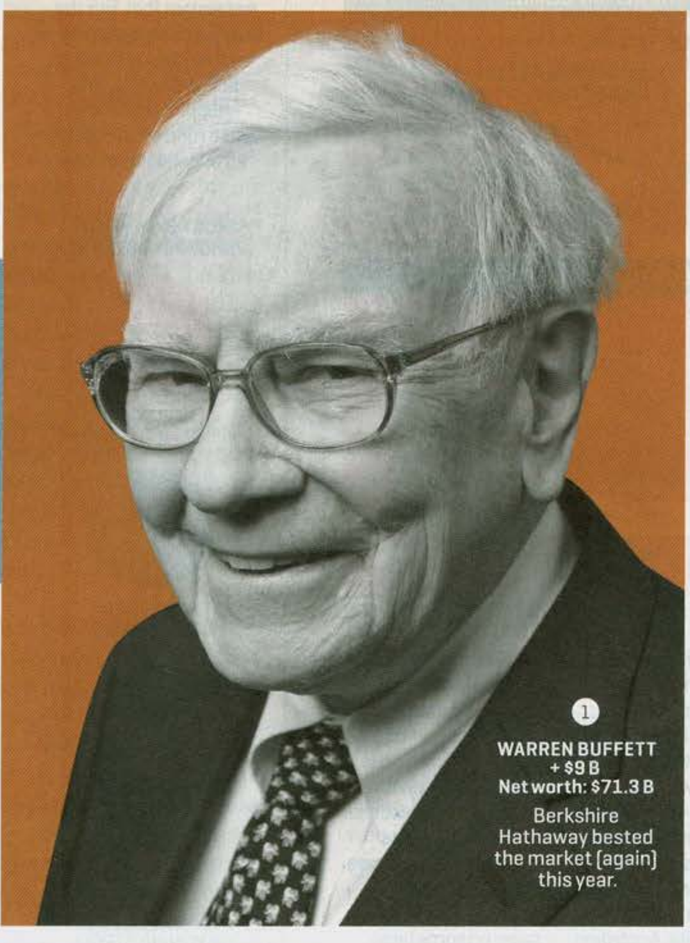
$1,283
LONDON NEW BOND STREET

$1,249
TOKYO, GINZA

SOURCE: CUSHMAN & WAKEFIELD

The Best in Business 2016

This year has been one for historic contests: Donald Trump vs. Hillary Clinton, Brexit vs. Bremain, Cubs vs. Indians. Amid the fracas, a few business leaders and companies stood out as particularly successful, or at least consequential. Here, *Fortune*'s roundup of the winners—and a few losers—in a tumultuous year.



1
WARREN BUFFETT
+ $9 B
Net worth: $71.3 B
Berkshire Hathaway bested the market (again) this year.

2
SHELDON ADELSON
+ $8.9 B
Net worth: $31.9 B
The casino owner expanded holdings in Macau.

3
HAROLD HAMM
+ $8.7 B
Net worth: $15.6 B
The exec's Continental Resources beat the S&P 500.

4
JEFF BEZOS
+ $8.6 B
Net worth: $68.3 B
Amazon's growth continued to soar in 2016.

■ BIGGEST GAINERS

WARREN BUFFETT

BERKSHIRE HATHAWAY CHIEF Warren Buffett, the legendary investor who purchased his first stock at age 11, is still at it. Buffett's net worth increased by about $9 billion in 2016 through late November—more than any other billionaire, according to Bloomberg estimates—as Berkshire's returns handily beat the S&P 500. (See our Q&A in this issue.) Other big gainers: casino magnate Sheldon Adelson, fracking proponent Harold Hamm, and Amazon's Jeff Bezos. As the site continued its march toward online shopping domination, Bezos's net worth rose by a cool $8.6 billion.

BEST PERFORMING S&P 500 STOCKS YEAR-TO-DATE PRICE CHANGE

SOURCE: S&P GLOBAL

■ BEST PERFORMING STOCKS OF THE S&P 500

A CHIPMAKER, A GAS COMPANY, MINERS, AND ... URBAN OUTFITTERS

NVIDIA, a leader in computer graphics chips, applied its expertise to growing industries like AI, self-driving cars, and cloud computing in 2016. The stock skyrocketed 161.5%, more than any other, through November. Other top stocks included two mining companies, a natural gas giant, and ever-fashionable retailer Urban Outfitters.

BUFFETT: COURTESY OF BERKSHIRE HATHAWAY; ADELSON: ANDREW HARRER—BLOOMBERG/GETTY IMAGES; HAMM: ANDREW HARRER—BLOOMBERG/GETTY IMAGES; BEZOS: GREG DOHERTY—GETTY IMAGES

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1ST AMONG THE WORLD'S FASTEST GROWING ECONOMIES IN BOTH 2016 AND 2017
Source: WESP Report 2016, United Nations

1ST CHOICE FOR THE WORLD'S TECH MNCS TO SET UP OFFSHORE R&D BASES
Source: Zinnov Management Consulting Report

1ST AMONG THE WORLD'S MOST ATTRACTIVE INVESTMENT DESTINATIONS
Source: The Carlyle Group

6TH LARGEST MANUFACTURING NATION IN THE WORLD
Source: United Nations Industrial Development Organization Yearbook, 2016

7TH MOST VALUED NATION BRAND IN THE WORLD
Source: Brand Finance

UP 15 PLACES
ON THE GLOBAL INNOVATION INDEX 2016
Source: Cornell University, INSEAD and the World Intellectual Property Organization

UP 19 PLACES
ON THE LOGISTICS PERFORMANCE INDEX 2016
Source: The World Bank

UP 32 PLACES
ON THE GLOBAL COMPETITIVENESS INDEX IN 2 YEARS [2014-16]
Source: World Economic Forum

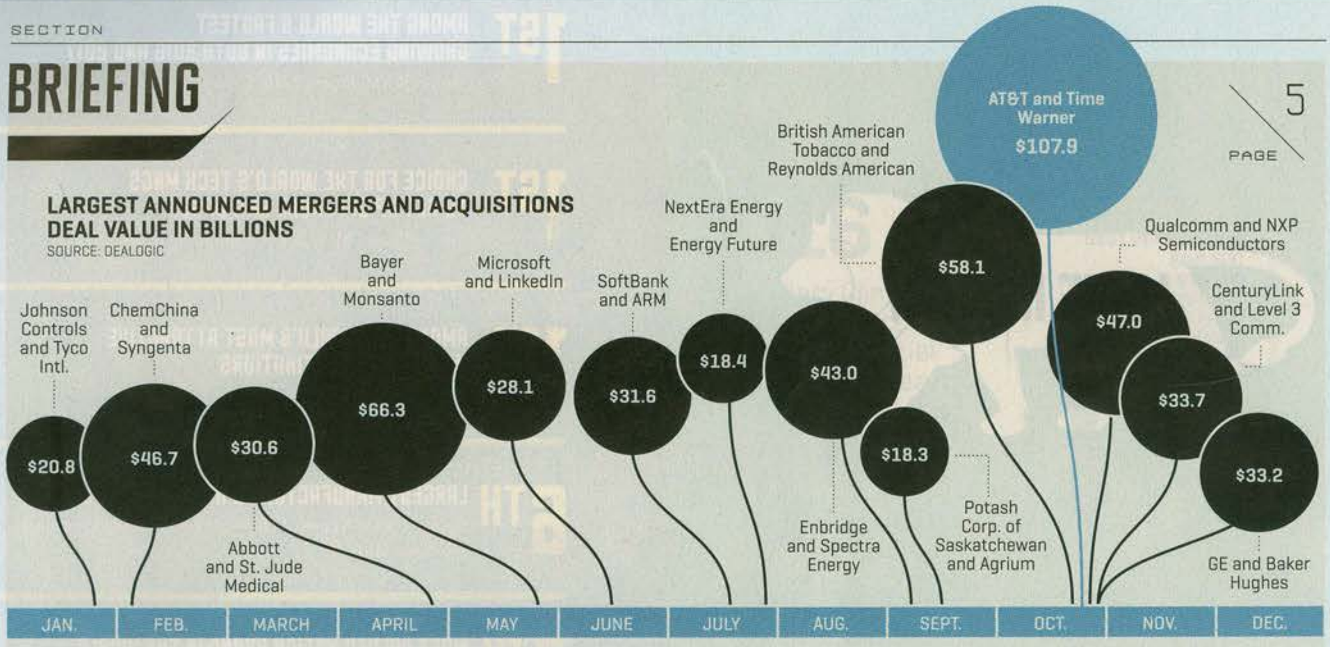
USD 55.5 BILLION
INDIA'S HIGHEST EVER RECORDED FDI INFLOW [2015-2016]
Source: Department of Industrial Policy & Promotion, Government of India

52% GROWTH
IN INDIA'S FDI EQUITY INFLOW [2014-2016]
FDI equity inflow increased from USD 46.72 Billion in 2012-2014 to USD 70.93 Billion in 2014-2016
Source: Department of Industrial Policy & Promotion, Government of India

BUFFETT: COURTESY OF BERKSHIRE HATHAWAY; ADELSON: ANDREW HARRER—BLOOMBERG/GETTY IMAGES; HAMM: ANDREW HARRER—BLOOMBERG/GETTY IMAGES; BEZOS: GREG DOHERTY—GETTY IMAGES

BEST IN BUSINESS 2016

LARGEST ANNOUNCED MERGERS AND ACQUISITIONS
DEAL VALUE IN BILLIONS
SOURCE: DEALOGIC



■ BIGGEST DEAL

THE AT&T–TIME WARNER MERGER (UNLESS . . .)

IN A BUSY YEAR for M&A, if not quite as busy as record-breaker 2015, AT&T CEO Randall Stephenson proposed the biggest combination of all. AT&T offered $107.9 billion (including debt) for entertainment giant Time Warner. Bringing HBO, CNN, and the hit-making movie and TV studio Warner Bros. into the fold would allow Stephenson to gin up new Internet services to appeal to the 20 million cord-cutting households, while diversifying his company's revenue. But in a year that did break the record for *busted* deals, regulators may block the merger—even Donald Trump said it concentrated too much power in the hands of too few. —**AARON PRESSMAN**

■ MOST PROMISING BREAKTHROUGH

INNOVATIONS IN DRUG DELIVERY

BETWEEN CRISPR gene-editing and cancer therapies that harness the immune system, 2016 had plenty of innovation. But one of the most promising trends is progress in the actual delivery of drugs to the body. That includes a newly approved implant from Braeburn Pharmaceuticals that can treat opioid addiction for six months, and Medtronic's "artificial pancreas," now cleared as a treatment for Type 1 diabetes.
—**SY MUKHERJEE**

■ BEST COMPROMISE

VERIZON'S STRIKE SETTLEMENT

THE TELECOM GIANT'S long, ugly history of labor strife took another dark turn in April, when 40,000 workers in the company's telephone and Internet businesses walked off the job after a year of fruitless contract talks. Secretary of Labor Tom Perez had to bring the sides together to end the strike, the largest in five years. The truce they reached, after seven weeks: Workers got higher pay, Verizon got health care savings. —**A.P.**

■ MOST MAGICAL YEAR

WALT DISNEY BREAKS RECORDS

DISNEY became the biggest movie studio on earth this year in terms of revenue. It followed up a huge 2015 [see: *Star Wars*] with the largest one-year box office haul in Hollywood history, smashing Universal's $6.9 billion sales record in 2015. Disney's hits this year include three billion-dollar blockbusters, with a hotly anticipated *Star Wars* spinoff, *Rogue One*, due in December. **—TOM HUDDLESTON JR.**

■ BEST COMEBACK

BRAZIL'S SPORTS, SCANDAL, AND MARKET RALLY

BRAZIL'S economy is barely limping out of a three-year recession, but in 2016, a year in which the country also saw Zika, Ryan Lochte's gas-station episode, and the impeachment of its president, its stock market crushed it. Brazil's benchmark climbed 49% through late November. Thank a commodities rally, confidence in the new political order, and a low starting point. **—ERIKA FRY**

SOURCE: S&P GLOBAL

■ BEST PHRASE

Post-Truth

[adjective].

After an election cycle where the opposing sides seemed to disagree on everything—including the veracity of basic facts—the sad term "post-truth" was named the Oxford Dictionaries' word of the year. The phrase's monthly usage shot up 2,000% over last year, according to Oxford's count.

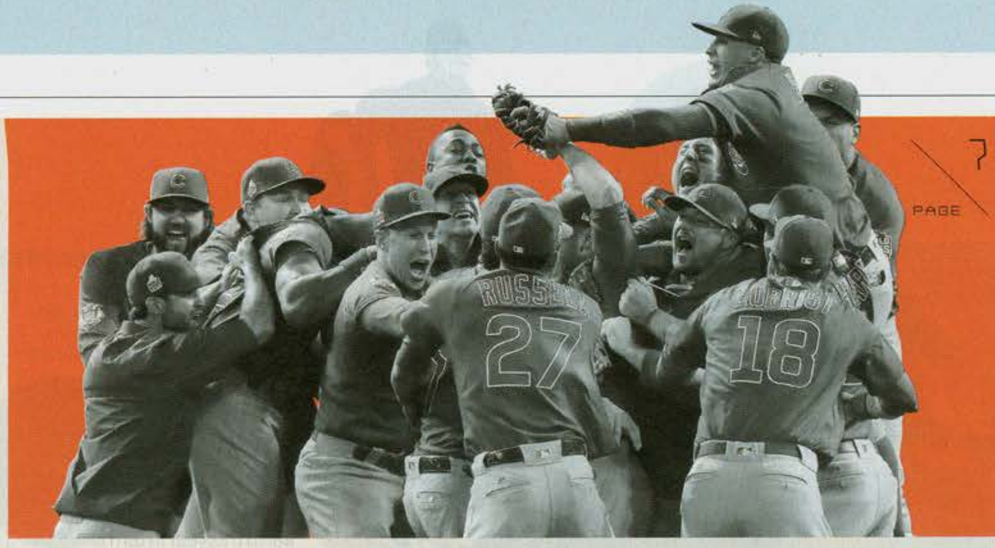
■ PRICE HIKE THAT NEARLY TRIGGERED SEPTIC SHOCK

EPIPEN PANIC

MOVE OVER, Martin Shkreli. This year, pharma got a new villain, sparking a scandal contentious enough to make Shkreli's Daraprim price hike seem bush league. Under CEO Heather Bresch, Mylan jacked up the price of the widely used EpiPen [the shot that saves the lives of people who are deathly allergic to peanuts and more] by 500%. The ensuing nationwide scandal enraged Congress, presidential candidates, and investors—who sent the company's stock plummeting. Regulators eventually compelled the company to pay the government a $465 million settlement. **—JEN WIECZNER**

○ MOVIES: COURTESY OF WALT DISNEY; EPIPEN: ALAMY STOCK PHOTO

BRIEFING



GADGETRY

■ LEAST NERDY TECH HEADSET
SNAPCHAT SPECTACLES

WEARABLES for your face are a fashion challenge. (RIP, Glass.) But Snapchat's shades cracked the cool code.

■ BEST/WORST CRAZE
POKÉMON GO

AFTER THE most successful app launch ever, it led millions to risk trespassing and traffic accidents to chase imaginary monsters.

■ HOTTEST GADGET (LITERALLY)
SAMSUNG GALAXY NOTE 7

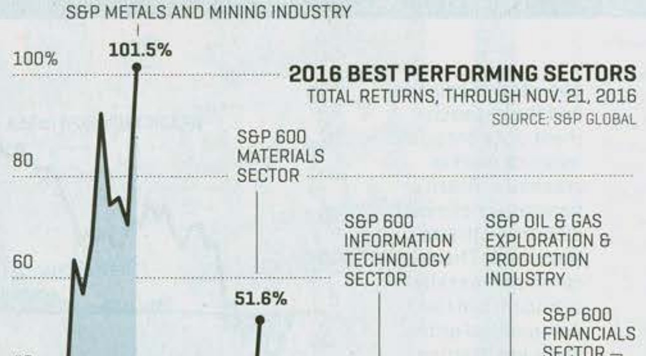
IT WAS a bomb—meaning it caught fire in customers' hands, until Samsung pulled the plug. **—JEFF JOHN ROBERTS**

■ MVP AND LVP
VIEWERS TUNE IN FOR CUBS' EPIC WIN, TUNE OUT THE REST

MORE THAN 40 MILLION PEOPLE watched the Cubbies end their 108-year championship drought—at the expense of the also title-hungry Cleveland Indians—in Game 7 of the World Series, the most watched baseball game in 25 years. Other live sports fumbled, however. NFL ratings sank, and Olympics primetime viewership dipped 17%. Blame a nail-biter of an election and YouTube-addicted millennials. **—TOM HUDDLESTON JR.**

■ BEST PERFORMING SECTOR
METALS' TIME TO SHINE

IN RECENT YEARS, metals were hit first by the global financial crisis and then by the slowdown in China. These forces caused miners to drastically cut supply, but the sector's extraordinary rebound this year shows that they overcorrected—leading to price-boosting shortages. **—CHRIS MATTHEWS**



■ BEST PERFORMING COMMODITY
ZINC

ZINC WON GOLD as the best performing commodity in 2016. It leapt 60.4% through November, joining other metals like lead and copper with double-digit gains.

YEAR-TO-DATE TOTAL RETURNS	
60.4%	ZINC
45.8%	ORANGE JUICE
39.8%	SUGAR
26.6%	NICKEL

BEST IN BUSINESS 2016

■ BEST
Apocalyptic World-Destroying Stock Market Catastrophes That Didn't Actually Happen

TRUMP, BREXIT, AND THE CHINA SLOWDOWN

FOR FINANCIAL MARKETS, 2016 has been the year that cried wolf. It started with a scare about a "hard landing" for the Chinese economy as GDP growth dipped below 7% for the first time since 1989. But Beijing managed to quell fears by lifting deficits, loosening credit, and indulging in some perhaps overly sunny accounting. Next up was the shock of the June Brexit vote. The S&P 500 quickly lost 5.5% in the next two days, but rebounded with a vengeance once markets realized the volatility would keep the Fed from raising interest rates. Finally, there was the shortest-lived scare of all: Stock futures tanked on election night as the results came in for Donald Trump. But within hours, fears of trade wars and other maverick economic policies gave way to hopes for less regulation, lower taxes, and higher government spending. Only a curmudgeon would point out that China's debt metrics are now even more terrifying, that Brexit is an unholy mess, and that Trumpian reflation means, most likely, the return of inflation. The S&P, DJIA, and Nasdaq don't seem to mind: They're at record highs. **—GEOFFREY SMITH**

U.S. President-elect Donald Trump, U.K. Prime Minister Theresa May, and Chinese president Xi Jinping.

■ TOP TWEET
@HILLARYCLINTON

"To all the little girls watching ... never doubt that you are valuable and powerful & deserving of every chance & opportunity in the world."

This postelection missive had more retweets [over 600,000] and "likes" [over 1 million] than anything else on Twitter in 2016, according to Favstar.

■ LEAST PROFITABLE SCANDAL
WELLS FARGO'S FAKE ACCOUNTS

WELLS FARGO'S fake-account scandal cost the bank $184 million in fines, lost the CEO his job, and savaged its stock. But as for the phony accounts themselves? Settlement details suggest the bank collected only about $2.5 million in ill-gotten fees. Making for a fraud that, as far as bank scandals go, was shockingly unremunerative.

■ JUMBO IPO
POSTAL SAVINGS BANK OF CHINA GOES BIG

THE LAST OF China's big state-owned lenders to list a portion of their shares publicly, Postal Savings notched the largest IPO since 2014. But as with those other banks, the shares have mostly gone nowhere, weighed down by traders' skepticism of balance sheets saddled with shaky debt. **—SCOTT CENDROWSKI**

WORLD'S LARGEST IPOs
SOURCE: S&P GLOBAL

O TRUMP: DREW ANGERER—GETTY IMAGES; MAY: JACK TAYLOR—GETTY IMAGES; XI: LINTAO ZHANG—GETTY IMAGES; CLINTON: CARLOS BARRIA—REUTERS

FOCUS

PRACTICAL EXPERTISE

TECH

SUPERSONIC TRAVEL IS BOOMING

A new generation of ultrafast jetliners could kick off the next age of supersonic passenger flight. BY CLAY DILLOW

STARTING IN THE EARLY 2020s, business-class travelers will get something more than mere celebrity-chef-curated menus and flat-reclining seats when they plunk down a few thousand dollars for a transoceanic flight. If Blake Scholl has his way, they'll also get extra time on the ground—three hours and 45 minutes on each leg of a typical seven-hour New York to London route.

Scholl is the CEO of Denver-based Boom Technology, a venture-backed aerospace startup developing a 45-seat jetliner that will cruise at 1,451 miles per hour, or Mach 2.2. That's more than twice as fast as conventional airliners. At that speed, a traveler could theoretically have breakfast in New York, attend afternoon meetings in Europe, and arrive back home in time to tuck the kids into bed. But first the company will have to overcome the bad economics that forced the last generation of supersonic airliners into retirement.

The first era of supersonic passenger flight ended in 2003 when a British Airways Concorde jetliner made that aircraft's last commercial journey. For three decades the Concorde lost money for its operators. It was a notorious fuel guzzler, and its high operating costs made for costly tickets that proved tough to sell. Most passengers simply weren't willing to pay a huge premium for a shorter flight.

Boom grew out of Scholl's realization that the Concorde could have survived and thrived if it had been 30% more efficient, a threshold that recent advances in design, materials, and manufacturing put within reach. Like the Concorde, Boom's jetliner offers only premium-class seats—from which conventional airlines generate nearly half their revenue—and puts them on a three-engine supersonic airframe. Ticket prices will stay roughly in line with those for conventional business-class seats, Scholl says, but passengers will spend about half as much time in the air.

Boom isn't the only aerospace company looking to reintroduce supersonic passenger flight. Boeing and Dassault have dabbled in supersonic aircraft designs. Gulfstream—whose coveted G650 business jet cruises at just below the speed of sound—is quietly studying supersonic business jet concepts. Aerion of Reno and Spike Aerospace of Boston round out the group.

But challenges remain. "One thing all of these concepts have in common: They don't yet have an engine," says Richard Aboulafia, vice president for analysis at Teal Group, an aerospace consultancy. "Until they have an engine, they don't have market."

Scholl disagrees. His company aims to use a modified version of the engines that power Boeing's 787 Dreamliner. "We have buy-in from the guys that design these engines that this is going to work," he says. Boom plans to fly a prototype next year to test some of its technologies. The company has already taken orders for 25 aircraft (10 for Virgin) and predicts demand for 1,300 supersonic jetliners over 10 years starting in 2023—and that's just for existing intercontinental business-class markets.

Says Scholl: "There's line of sight to making this work at economy prices." Buckle up. ■

From San Francisco to Tokyo and back before midnight? A new crop of companies believes supersonic passenger flight is ready for a reboot thanks to technological advances. Above, the Aerion AS2 business jet concept.

"I PASSED ON TESLA" Regrets of the VCs

BY POLINA MARINOVA

TECH

In 2004, Jeremy Levine of Bessemer Venture Partners spent a weekend at a retreat avoiding a Harvard student who was relentlessly trying to pitch him on a social media company he had just cofounded. Finally, Levine snapped and delivered the brutal truth: "Kid, haven't you heard of Friendster? Move on. It's over [for you]!" The student was Eduardo Saverin. The company? That would be Facebook.

We often hear about venture capitalists' hits and misses, but we learn less often about a more elusive category: the companies they declined to invest in. Here, a sampling of unfortunate passes. We'll call them the Mike Smith Awards. The name doesn't ring a bell? He was the British record executive who opted to sign a band called Brian Poole and the Tremeloes rather than the Beatles. We all make mistakes—but some are bigger than others.

SNAPCHAT
When **Josh Elman** of **Greylock Partners** was asked about his biggest pass, he answered, "Snapchat. I just wrote the answer of why, but it already disappeared."

AMAZON
OVP Venture Partners had a handshake deal with Jeff Bezos to invest $2 million for 20% of Amazon.com. At the last minute, John Doerr of Kleiner Perkins offered $8 million for the same 20% stake, and OVP's deal fell through. "To get even, we buy all our books at Barnes & Noble," OVP's website reads. "We don't think Amazon has noticed."

EBAY
How did **Bessemer's David Cowan** react to the idea of buying a stake in eBay? "Stamps? Coins? Comic books? You've *got* to be kidding," he said at the time. "No-brainer pass."

D'OH!

GOPRO
Chris Sacca of **Lowercase Capital** dismissed Nick Woodman's GoPro pitch, saying there was "no way GoPro could compete with China/Taiwan/Korea."

UBER
John Greathouse of **Rincon Venture Partners** refused to listen to Uber founder Travis Kalanick's pitch. "Note to my loving wife: The next time a friend knocks me over the head with a billion-dollar opportunity, I'm going to listen. Promise," he says.

GOOGLE
A college friend of **Cowan's** rented her garage to Google's cofounders in the company's first year. When she tried to introduce them to Cowan, he wasn't too thrilled about a student-founded search engine. He responded with, "How can I get out of this house without going anywhere near your garage?"

TESLA
Bessemer's Byron Deeter put a deposit down on a Tesla Model X but opted not to place any money in the company. As he put it at the time, "It's a win-win. I get a great car and some other VC pays for it!"

OOPS!

SALESFORCE
Ron Conway of **Angel Investors LP** passed on Salesforce because its $30 million valuation "seemed too high at the time."

PAYPAL
Cowan declined to invest in PayPal's Series A round, citing its team of rookies and the potential for a "regulatory nightmare."

PINTEREST
After **Kevin Rose**, formerly of **Google Ventures**, was shown the website, Pinterest founder Ben Silbermann offered him an investment opportunity at a $5 million valuation. Rose said, "I thought, Wow, that's really high."

AIRBNB
Fred Wilson of **Union Square Ventures** turned up his nose at Airbnb because he just couldn't get behind the idea of "air mattresses on the living room floor."

NOOO!

APPLE
Then-**Bessemer** partner **Neill Brownstein** called pre-IPO shares of Apple "outrageously expensive" after having the chance to invest at a $60 million valuation.

TECH

PERSON OF INTEREST

STACY BROWN-PHILPOT

CEO, TASKRABBIT

AGE: 41

FROM: Detroit

THE BIG TASK: After three years at TaskRabbit, which provides a marketplace for short-term freelance labor, Brown-Philpot rose to its top job earlier this year. Her priority is to "build a strong culture around growth and improvement," she says. It's followed by a goal to push the eight-year-old company along its path to profitability.

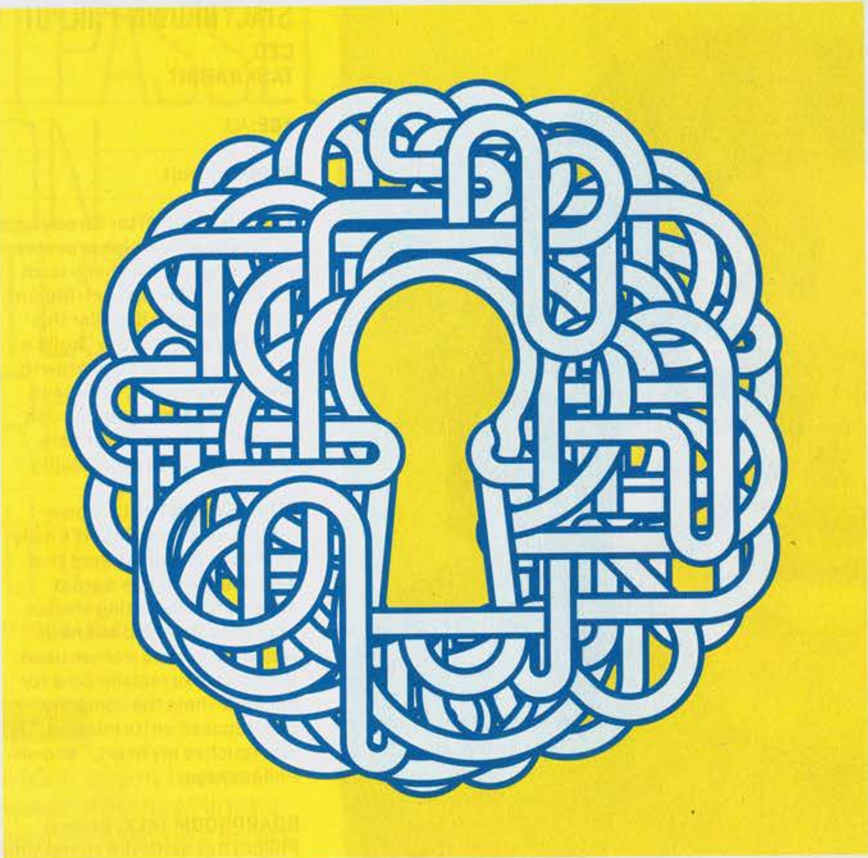
QUALITY CONTROL: Brown-Philpot says TaskRabbit's daily challenge is making sure that each customer has a great experience. Resulting stories of gratitude—such as one in which a divorced woman used the service to reclaim time for her kids—help the company stay focused on its mission. "It just touches my heart," Brown-Philpot says.

BOARDROOM TALK: Brown-Philpot has achieved something few African-American women have—a seat on the board of a major public tech company. She joined the board of HP Inc. last year. "It's a step for me to grow as a leader," she says.

CHANGING THE RATIO: Over her 16 years in Silicon Valley [nine at Google], Brown-Philpot says she's seen the conversation about diversity become more grounded in reality. "Going from one male-dominated industry to another," she says, referencing her early career in financial services, "I was prepared with how to deal with being one of the minority." Still, the tech industry has work to do. "We need to be more accountable."

THE FUTURE OF WORK: Will we all become freelancers someday? Maybe, Brown-Philpot posits. "The future of work is really about people deciding to live and work in the way that they want." —KIA KOKALITCHEVA

▲ PHOTOGRAPH BY **BENJAMIN RASMUSSEN**



SALESFORCE SETS ITS SIGHTS ON $20 BILLION

Key to unlocking the cloud-software king's audacious revenue target? An elite team of evangelists tasked with winning over companies on the digital precipice.

BY HEATHER CLANCY

TECH **WHEN IT COMES** to digital transformation, most companies don't know what they don't know. That could prove crucial for Salesforce, the San Francisco business software company led by Marc Benioff and lately known for its unsuccessful pursuit of social media stalwarts LinkedIn and Twitter.

Over the past three years, Salesforce has quietly assembled an elite team of strategists (it won't reveal how many) with pedigrees from the likes of Booz Allen, IBM, McKinsey, and Oracle. Its task: guide companies that are struggling to translate the promise of so-called digital technologies—cloud computing, data analytics, mobile devices, and so forth—into some kind of meaningful investment strategy.

The centerpiece of the initiative is what Salesforce calls Ignite, a two- to three-month-long formal process intended to get existing and potential customers thinking differently about how the digital revolution might spark new revenue streams, improve operational efficiency, or transform corporate culture. This is more than a consulting exercise. For one, the "deliverable" is an actual prototype for the customer—a mobile application or digital service that happens to use Salesforce software. The sessions are also free of charge.

"We are not just selling cloud technology, we are selling a vision, and we are selling the value of that vision," explains Keith Block, Salesforce's chief operating officer. The evangelism effort has been one of Block's pet projects since the former Oracle executive joined three years ago as Benioff's deputy. "This is an absolute imperative for every company of every shape and size," he adds.

It's easy to see why. There are dozens of studies trumpeting the billions, if not trillions, of dollars in new revenue that could be generated through investments in cloud services and mobile apps. Consulting firm Cognizant recently estimated the impact at

▲ ILLUSTRATIONS BY **GARBETT DESIGN**

more than $20 trillion by 2018—and that's just for the retail, life sciences, financial services, health care, insurance, and manufacturing industries.

But the money won't come cheap. In addition to overhauling or replacing legacy software and systems that underpin core business processes—everything from manufacturing operations to customer service—big companies must spend an average of hundreds of millions of dollars to hire software engineers and application designers who can shepherd them through this transition, according to McKinsey. It's disrupt or be disrupted. But where to start?

That's where Salesforce's SWAT team comes in. In the past 18 months, it has nudged more than 250 established and emerging companies toward the digital precipice, including *Fortune* 500 fixtures Farmers Insurance Group, Unilever, and UnitedHealth. Think of it as a digital blood transfusion. "It takes a very agnostic view of the aspiration," says Farmers chief information officer Ron Guerrier. "It's not a sales-y approach; it's a visioning approach, a 'who do you want to be when you grow up' conversation." (Guerrier is an Ignite two-timer: He requested a session for Farmers when he joined in December 2015, after using the resource in his previous role at Toyota Motor.)

Salesforce's rivals—among them Microsoft, Oracle, and SAP—also employ experts responsible for making the "business case" for their complex, mission-critical enterprise applications. So-called digital design is all the rage for IBM's storied consulting division too: Big Blue has spent millions to buy boutique software firms staffed with developers and designers who specialize in making business software far simpler to implement and use.

What makes Salesforce stand out is how much time it is willing to spend on this in its quest to become a "trusted adviser." Farmers, for example, received weeks of advice on how to liberate data trapped in more than a half-dozen legacy systems across its call centers, sales organizations, marketing teams, and finance operations. The result is one of the first mobile apps to use Einstein, a Salesforce artificial-intelligence technology that automates certain tasks, such as prioritizing sales leads, as a way for customers and agents to track down policy information more quickly. "It's not just a matter of getting people to think differently," says Guerrier. "It's also integrating the cool new with the must-have old."

The transformation at security firm Tyco was equally dramatic. The company, which was acquired by building automation giant Johnson Controls in September, received guidance about how to use data gathered from sensors, mobile apps, and predictive analytics to reimagine customer service. Almost 60 Tyco employees participated in a two-day meeting with Salesforce to talk through the possibilities—fewer than 20% of them were actually involved in sales.

"These were people on the front lines, not vice presidents," notes Brian Young, the senior vice president of global enterprise sales who championed the project. "Someone from the monitoring center. Someone scheduling technicians. Someone routing leads. Everywhere where handoffs were causing less than a superior customer experience." Since Tyco embraced Salesforce's recommendations about a year ago, its sales conversion rate has increased appreciably, Young says.

Salesforce's digital strategists don't have formal sales quotas, but their work corresponds with a growth in bigger deal sizes. After Tyco finished its Ignite engagement, for example, it bought Salesforce subscriptions for more than 30,000 employees—up substantially from its previous commitment of 7,500. In the second quarter of 2016, the latest period for which this sort of data was available, Salesforce counted more than 1,000 customers with contracts worth more than $1 million annually. A year earlier, it had only 800.

Ignite and Salesforce's team of crack consultants are a key part of the cloud company's growth goals. Salesforce has declared that it will cross the $10 billion revenue threshold during its next fiscal year, which ends on Jan. 31, 2018. It's a bold claim: The company's fiscal 2016 sales totaled $6.7 billion, and it predicts it will rake in $8.4 billion in fiscal 2017. If Salesforce succeeds, the 17-year-old company would become the first pure-play cloud business software company to reach that mark. And Salesforce would be well on its way to an even more audacious revenue goal: $20 billion in the next three to four years.

Reaching both targets is almost certain to come at the expense of profits—and historically, Salesforce hasn't shied away from spending as much as half its revenue on sales and marketing to fuel growth. (It lost money in its last five fiscal years.) Still, expect Salesforce to invest even more in its digital design expertise in the months to come, Block says.

"The way you paint a vision or motivate a customer comes in understanding their problem," he says. "Helping them reimagine their future." ■

▼

TOP HURDLES TO DIGITAL TRANSFORMATION

1. **Skills**
2. **Culture**
3. **Technology**

CAPGEMINI

TECH WITH THE BEST RETURN ON INVESTMENT, ACCORDING TO CEOs

1. **Data analytics**
2. **Customer-relationship management software**
3. **Social media**

PWC

NOW TRENDING: #ethicalproblems

For **Twitter,** the business of selling social data to companies seeking intelligence is booming. But pitfalls of the practice—indirectly giving governments new ways to conduct surveillance on unsuspecting citizens, for example—have the company rethinking its role in the ecosystem. BY JEFF JOHN ROBERTS

TECH **TWITTER HAD A ROUGH RIDE** this year as its share price slumped and would-be suitors like Salesforce and Disney walked away. Now the social media company faces a new controversy over its fabled "firehose," the flood of data that its users generate every second.

At first blush, Twitter information doesn't seem useful—at best a jumble of Internet musings. But taken in aggregate, the data contains powerful insights about brand perception, political leanings, and even market movements. Twitter data is public, but there's a ton of it, and the company limits how much someone can access at once. Companies pay for full or partial access to the firehose—the source data, available instantly—to offer intelligence to their own customers.

ONLY 4% OF COMPANIES EXCEL AT ANALYTICS

BUT THEY'RE 5X MORE LIKELY TO MAKE FASTER DECISIONS

BAIN & CO.

It's a substantial business: Twitter generated $71 million of its $616 million in third-quarter revenue from data licensing. But the practice has also caused Twitter an ethical headache as some of its corporate customers repackage the data for sale to law enforcement and governments.

These companies—among them Geofeedia, which drew scrutiny from the American Civil Liberties Union—market their ability to identify activists (such as those affiliated with Black Lives Matter) and monitor dissidents in countries such as Turkey and Saudi Arabia. Their software blends information from several social media platforms to unearth insights that one platform alone could not provide.

Twitter and Facebook swiftly cut access to Geofeedia and its ilk in the wake of reports about surveillance. In a statement, Twitter data chief Chris Moody writes that the reports caused the company "great concern" and that using Twitter data "to track or profile protesters and activists is absolutely unacceptable and prohibited." Facebook, which does not charge companies for access to its data, says it is reviewing its enforcement processes for third-party use of data from its platform.

But an executive from one of the companies that lost access to the Twitter firehose says his firm had behaved lawfully. He believes Twitter overreacted because it feared that bad publicity would hurt its effort to be acquired. (The executive declined to be identified for fear of reprisal.)

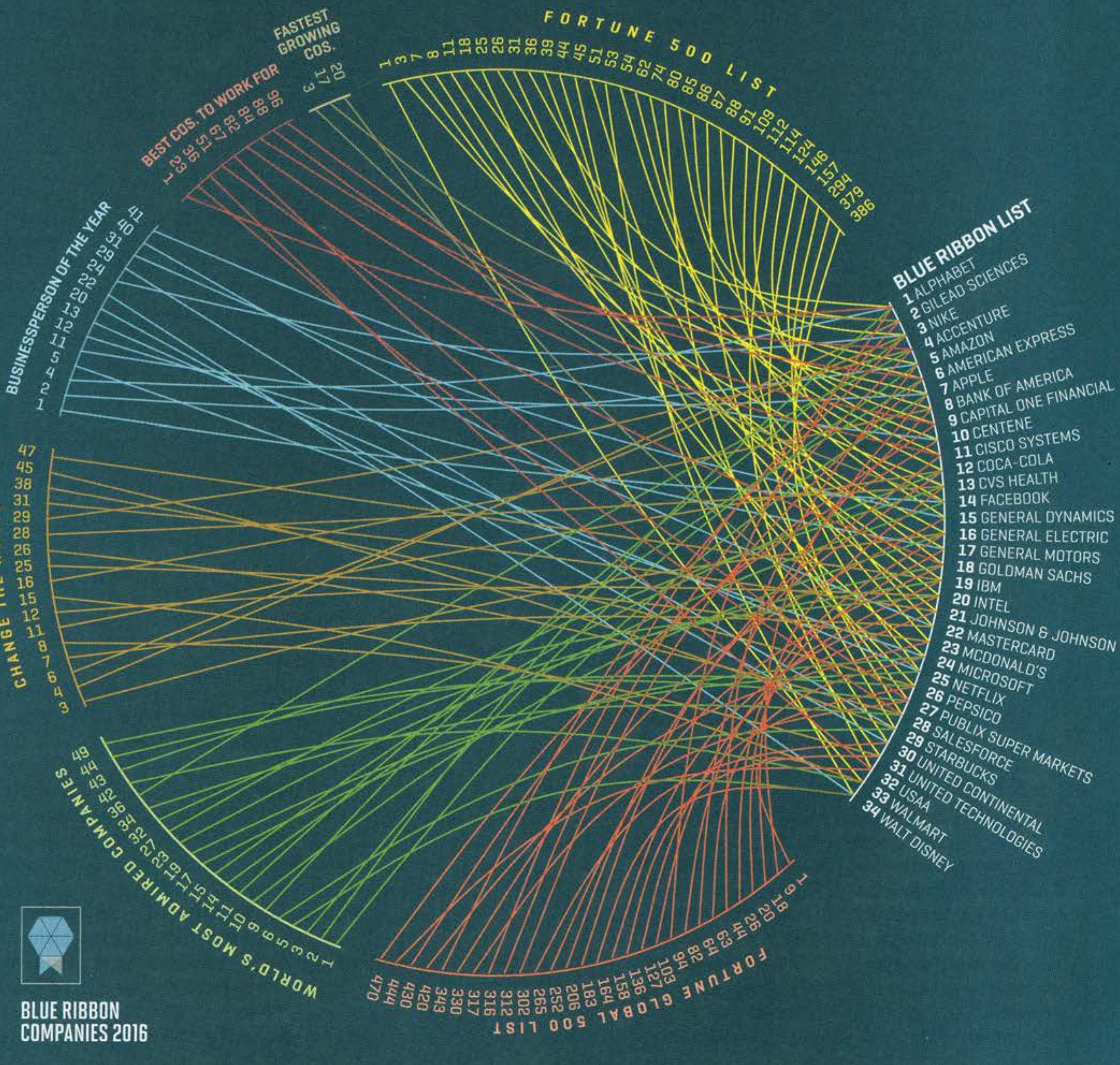
Such issues are unlikely to go away in an age when organizations of all kinds, well-intentioned or otherwise, are willing to pay top dollar for data to help them make better decisions.

All the more reason for companies like Twitter to reevaluate their roles, says Human Rights Watch researcher Cynthia Wong. "It's really about the responsibility to protect users as much as possible when the government comes knocking at the door." ■

▲ ILLUSTRATION BY **NICHOLAS LITTLE**

THE COMPANIES OF THE YEAR

VENTURE **WHO ARE 2016'S** top corporate dogs? This year, 34 names showed up on at least four of our seven most rigorous annual rankings—the *Fortune* 500, Global 500, Best Companies to Work For, Change the World list, World's Most Admired Companies, 100 Fastest-Growing Companies, and Businessperson of the Year. Now they're on one more: our Blue Ribbon list. —CHRISTINA AUSTIN



BLUE RIBBON COMPANIES 2016

CHART BY **NICOLAS RAPP** DATA BY **SCOTT DECARLO**

KEEPING CHARITY IN THE FAMILY

Ron and Marty Cordes launched their charitable foundation a decade ago. And after some soul-searching and a trial run, their daughter is preparing to someday take the reins. BY RYAN DEROUSSEAU

VENTURE

IN 2006, while closing a $230 million deal to sell his financial firm, AssetMark Investment Services, Ron Cordes realized just how little he and his wife, Marty, had discussed money with their daughter. Ron was working around the clock, and one day Stephanie—16 at the time—declared to him, "I hope they're paying you overtime." Ron couldn't help chuckling: CEOs may work overtime, but most don't get paid by the hour.

The Cordes family—Marty, Ron, and Stephanie (from left)—have designed an estate plan that will secure a future for their philanthropy.

Fast-forward to 2014, and it was Stephanie, the Cordeses' only child, who was a step ahead in financial sophistication. After learning in a finance class about trusts and the role they play in passing wealth to the next generation, Stephanie asked if she had one. Ron could only shrug: "We had

PHOTOGRAPH BY PATRICK JAMES MILLER

never set one up," he says. And the stakes were even higher for the Cordes family because they control a charitable foundation with more than $10 million in assets.

When it comes to talking about estate planning—a topic that combines the ultra-awkward subjects of death and taxes—families with fortunes aren't any more comfortable than the average American is. But when the older generation wants to leave a philanthropic legacy (and on average, the wealthy plan to give away 12% of their estate to charities, according to U.S. Trust), the conversation can't be put off. Families fare better when they work together to develop a detailed wealth plan in which a "mission is clearly stated," says Greg Mech, managing director at high-net-worth wealth management firm Caprock Group. That's the journey the Cordes family took this past summer.

Ron and Marty started the Cordes Foundation in 2006 with some of the proceeds from the AssetMark sale. They devoted it to helping women entrepreneurs in underdeveloped parts of the world. As cochairman, Ron has become a prominent advocate of "impact investing," which involves investing in companies whose values align with the foundation's and avoiding those that don't. The Cordes Foundation, for instance, does not invest in companies that lack women in their top ranks. By 2014, 100% of its endowment was invested according to impact-investing principles. Ron is "basically transforming the business model" for his foundation and guiding others who are curious about it, says Paula Goldman, global leader of impact investing at the philanthropic Omidyar Network.

Notwithstanding their commitment to empowering women, Ron and Marty avoided recruiting Stephanie. "We never wanted her to feel as if we pushed her into this," says Ron. She didn't seem to have philanthropy on the brain, either; after college, she took a job selling advertising at *Self* magazine. But three years ago she joined her parents on a retreat the foundation hosts in Ixtapa, Mexico. After interacting with some 400 leaders and entrepreneurs devoted to eradicating poverty, Stephanie found that selling $250,000 Mercedes-Benz ads no longer seemed fulfilling.

Stephanie, now 26, joined the foundation in 2014 as vice chair. She convenes with her parents and their foundation advisers for regular meetings at the round dinner table in their Park Avenue apartment in New York City, where the doorbell is on the fritz. It was there that the team decided to narrow the foundation's focus—a move catalyzed by Stephanie's interest in the fashion industry. Now its grants and investments primarily support women entrepreneurs whose businesses enrich their communities and engage women throughout the supply chain. This includes supporting clothing-focused efforts like the U.S.-based nonprofit Nest, which helps entrepreneurs in disadvantaged countries scale up their apparel-production shops.

Seeing Stephanie's passion for this work helped persuade Ron and Marty to include her this past summer when they at last updated their estate plan and set up that trust. When Ron and Marty will have both passed away, 75% of their assets will transfer to the foundation via the trust. None of the funds earmarked for the foundation will be hit with an estate tax (assuming one still exists; congressional Republicans and President-elect Trump say they plan to repeal it).

Stephanie will choose which 25% of the couple's assets she would prefer to keep for herself. She will pay estate taxes on any assets transferred to her that surpass the federal level, which is currently $5.45 million. That will leave her with the means to devote as much time as she wishes to the foundation. "We would fully expect" the directors to vote Stephanie in as chairwoman, says Ron, though that's not required. As chair, Stephanie would decide whether impact investing remains part of the foundation's strategy, and she would have the flexibility to change the focus of future grants as long as the foundation holds to the agreed-upon mission that she helped create.

Whatever Stephanie chooses, her actions will have helped the Cordes Foundation continue its work even after Ron and Marty no longer can. "Every parent wants to leave a legacy," says Ron. Now he's pretty confident he will. ■

THREE KEYS TO LEAVING A LEGACY

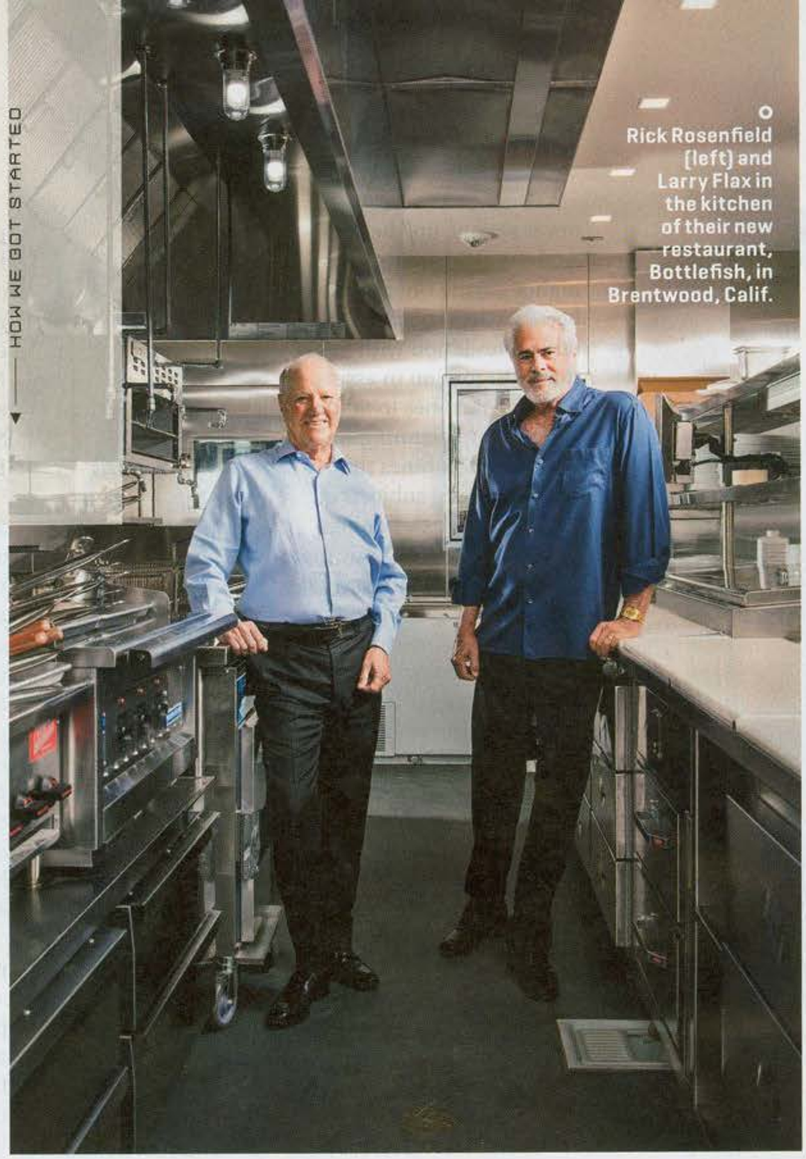
Here's how to increase the odds that your philanthropy will outlive you.

Develop a mission. Discuss what values your family cherishes the most and leave wiggle room in the mission statement so future generations can put their own stamp on the foundation.

Offset your weaknesses. Not everyone excels at investing or networking. Hire outside help to bolster weaknesses in your family's skill set.

Let the kids drive. Give your heirs projects to run so they can get practice utilizing their skills—and possibly failing—before they take over.

HOW WE GOT STARTED



Rick Rosenfield (left) and Larry Flax in the kitchen of their new restaurant, Bottlefish, in Brentwood, Calif.

SAVED BY BARBECUE CHICKEN PIZZA

It's hard to tell which was more improbable: the lawyer founders of **California Pizza Kitchen**—or the item that made the chain a hit.

INTERVIEW BY DINAH ENG

WHEN LARRY FLAX AND RICK ROSENFIELD left a lucrative law practice to open a restaurant, they had no idea what they were in for. They loved to cook and tapped a pedigreed pizza chef to design their menu. It bombed, except for one item: the barbecue chicken pizza. That unlikely hit ended up launching California Pizza Kitchen. The chain now has nearly 300 restaurants in 16 countries. In 2011, CPK sold for $470 million. Flax, 74, and Rosenfield, 71, plan to open a new upscale seafood restaurant chain called Bottlefish this month. Their story:

RICK ROSENFIELD: I grew up in a family of lawyers in Chicago and ended up in Washington, D.C., working for the Department of Justice, handling cases in the U.S. Supreme Court and the U.S. Court of Appeals.

LARRY FLAX: I grew up in Los Angeles, where my dad was in advertising for the studios. I studied law, and in 1968, I joined the U.S. Attorney's Office in L.A.

ROSENFIELD: I came out to California as a special prosecutor, and when the opportunity arose, I requested a transfer to L.A. I prosecuted the heads of the Detroit and St. Louis Mafia for holding unlicensed interests in the Frontier Hotel in Vegas.

FLAX: Rick and I became good friends.

ROSENFIELD: Larry left in 1971 to go into private practice and lured me to his firm.

FLAX: Less than a year later we split off into our own firm. We worked all over the country. We both love to cook and were silent partners in a restaurant for a short time.

ROSENFIELD: We lost money, but it whetted our appetites for

▲ PHOTOGRAPH BY **MICHAEL LEWIS**

running a restaurant. One day a friend said, "You chickens__t lawyers. Are you going to practice law your whole life, or are you going to do what you really want to do?"
FLAX: That was in 1984, when we were commuting to San Francisco for 2½ months on a currency-fraud trial. By then, Rick and his wife had a baby, and I had a girlfriend in Houston. The work was lucrative, but we were burned out with traveling.
ROSENFIELD: We'd been thinking of leaving the practice of law. That case was so frustrating because we thought the facts were in our favor, but we got a hung jury. That broke the camel's back. We came back to L.A. and said, "Let's go into the restaurant business." We had no idea what we were doing but signed a lease in Beverly Hills. It cost about half a million to open. We took out second mortgages on our houses and borrowed a quarter-million from the bank. When we needed more money, we put together a limited partnership. We called 23 friends, and 22 said yes, raising $300,000.
FLAX: When we needed even more, we loaned the company $50,000 of our own money because we were too embarrassed to go back to the investors.
ROSENFIELD: California-style pizza was just emerging. When Wolfgang Puck's Spago opened, you couldn't get in for weeks. Our idea was to bring Spago to the masses. The pizza cook from Spago consulted for us, and he created the original CPK menu, with things like rabbit sausage, radicchio, pine nut, grape-leaf pizza. None of it sold.
FLAX: What did sell was the barbecue chicken pizza.
ROSENFIELD: That's where the future was: taking items people loved and putting it on pizza. So Larry and I created a new menu. Our next success was the Thai chicken pizza.
FLAX: As lawyers, we're cautious and logical. If we had known then what we know now, we never would have opened a restaurant. Sometimes you have to be blind to risk and just take it. Once you take the first step, you just keep going.
ROSENFIELD: I stopped practicing six months before opening, and Larry kept the practice going, with the expectation we'd wind it down. But once we opened the restaurant, we never got another client.
FLAX: Opening night was crazy. Someone made a reservation for 7:30 p.m. for his son's 16th birthday party and was late. The place was jammed, and we had to deal with angry people waiting in line while there was an empty table for 12 in the middle of the restaurant. The next night, we stopped taking reservations.

OUR BEST ADVICE

LARRY FLAX AND RICK ROSENFIELD
Cofounders, CPK

GIVE RESPECT, OPPORTUNITY, COMMUNICATION, AND KINDNESS. If employees don't feel good, the company has no chance. In 1991 we met with managers to figure out smoking and nonsmoking sections. One asked, "How do I explain to servers why they have to work in a smoking section?" From that point on, CPK became the first national restaurant chain to go nonsmoking.

THE MOST VITAL DECISIONS ARE MADE IN THE BEGINNING. How you structure the company's finances determines how you can grow or how you'll get stymied. Don't give investors too much, or it could cripple you.

GUARD YOUR REPUTATION. You can have a full house, but if you don't serve people quickly enough, they get mad and word spreads.

ROSENFIELD: We did close to $1.5 million in revenue the first year, far exceeding our expectations.
FLAX: But without a law practice, we had to raise money and open more restaurants to pay ourselves a salary. So we converted the limited partners to stockholders in CPK Inc. Every time we'd sign a new restaurant, we'd sell more stock.
ROSENFIELD: Attracting labor was a challenge whenever we went to a new town. We weren't known and had to send in temporary teams of cooks, dishwashers, and waiters. Once we had a national reputation, it wasn't an issue. By 1992 we had 25 restaurants and $55 million in annual revenue.
FLAX: We were preparing to go public when we heard from PepsiCo, which wanted to buy into casual dining.
ROSENFIELD: They bought two-thirds of the company and wanted us to build 50 units a year. We got caught up in that and put restaurants in neighborhoods that didn't do well. In 1994, PepsiCo pulled the plug and brought in its own executive. That was the worst period for Larry and me.
FLAX: Two years later PepsiCo spun off their restaurant division and announced they would sell CPK.
ROSENFIELD: Because of our agreement, we had veto power. CPK was sold to Bruckmann Rosser Sherrill & Co. in 1997. Larry and I still owned a third of the company. We served as co-CEOs and cochairmen, staying until 2011, when the company was sold to Golden Gate Capital for $470 million.
FLAX: Over the years it was our synergy that pulled us through. We never walked away mad from disagreements. We always argued like lawyers and brought the other one around.
ROSENFIELD: When people talk about it being lonely at the top, we never had that. We shared the decisions. We both have healthy egos, but we were never vested in being right. That's one of the great secrets to our success.

FACING THE DARKNESS

Depression still carries a stigma for entrepreneurs, who are expected to be energetic optimists. But the problem is emerging from the shadows. BY LAURA ENTIS

BACK IN THE 1990S, Brad Feld's life seemed to be in ascent. As the cofounder of a burgeoning software company, he had a thriving career. But the emotional reality was more complicated. By the time he got home every night after 10 to 12 hours at the office, Feld says, "I'd have nothing left. I'd lay in the bed staring at the ceiling. I'd sit in the bathtub for three hours. I didn't want to see anyone." A few people knew the truth—his cofounder, his girlfriend—but to everyone else, "I was maybe distant, a little flat."

Feld was depressed. The fog lasted three years. When it finally lifted, a change he attributes to

▲ ILLUSTRATION BY JEE-OOK CHOI

psychotherapy, events sped up again. He began investing in startups, moved to Boulder, and married his girlfriend.

His life since then has often seemed charmed. Today he is cofounder of venture firm the Foundry Group and the startup accelerator Techstars. He's an author, a blogger, a husband, and by all accounts a decent guy.

Despite all that, Feld still crashes occasionally. He suffered a prolonged dark episode after 9/11. Then, in 2013, following a grueling stretch of work and a nearly fatal bicycle accident, the emotional walls collapsed again.

This time was different. Feld was now a prominent figure in the startup community. And the tech world had been rocked by a series of high-profile suicides, including those of programmer and hacktivist Aaron Swartz and Ecomom cofounder Jody Sherman. Feld decided to write about his struggle and published it online.

Responses flooded in. "A number of entrepreneurs and investors whose names you'd recognize, many of them very successful, reached out one-on-one," Feld says. Some people told him it was the first time they had discussed their experiences.

The door has begun opening lately to discuss the prevalence of depression in businesses and its stigmatization in a realm that puts a huge premium on energy and optimism. Entrepreneurs are beginning to have more honest discussions about the emotional toll of pouring everything into a company that, statistically, isn't likely to make it. But even today, certain types of depression stories are more palatable than others. The rare founders willing to reveal their troubles tend to portray them as part of a contained arc: Burnout, anxiety, and clinical sadness are searing but ultimately surmountable bumps on the road to achievement.

"In a lot of stories you read, it regresses back to happy talk at the end: There was a problem, we solved it, and now it's all fixed," says Michael Freeman, a psychiatrist who is studying the personality traits of entrepreneurs at the University of California at San Francisco. "But that's not the case with mental-health issues," including depression, which he believes affects entrepreneurs at a higher rate than the general population.

"No one wants to talk about the fact that the black hole never really goes away," says Jerry Colonna, who in 2014 founded Reboot.io, a Boulder company that helps executives address their emotions via intensive workshops.

It's not so much that founders have melancholy personalities as that they take more risks and suffer more failures. According to a frequently cited Harvard Business School study, nine out of 10 startups go bust. Silicon Valley and business thinkers have fetishized the alleged benefits of failure, but the truth is it can be emotionally devastating.

Before Taylor McLemore, 31, started his own company in 2010, he had never experienced depression. In the beginning, when it was nothing but shiny expectations and $500,000 in seed funding, the future looked bright. But two years later the company ran out of capital. That meant letting go of employees

AFTER 12 HOURS AT WORK, SAYS BRAD FELD, "I'D SIT IN THE BATHTUB FOR THREE HOURS. I DIDN'T WANT TO SEE ANYONE."

and telling backers their investments were worthless. A question gnawed at him: "If this business was a failure, does that mean I'm a failure?"

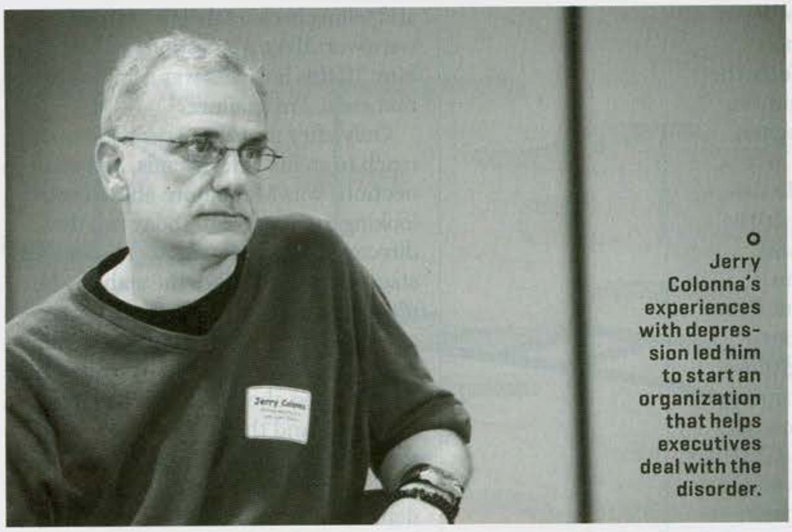
Only after months of persistent outreach from his wife, friends, and connections was McLemore able to start looking for a new job. Today he's the director of business operations at a later-stage startup. He likes the stability but ultimately wants to go out on his own again. "That's just the paradox of being an entrepreneur," he says. You need to be informed about the industry's mortality rate and then "you have to expel that disbelief to start something."

Colonna got involved in fighting depression because he suffers from it himself. He had enjoyed early success as a venture capitalist, working with Fred Wilson to launch one of New York City's first VC firms. But when the dotcom bubble burst, the firm shut down. Shortly afterward, he watched the World Trade Center towers crumble. In 9/11's wake, Colonna struggled emotionally and professionally. "I was filling my calendar because I couldn't bear the loneliness and emptiness," he says, "and then canceling them because I couldn't bear to go."

One morning after leaving a meeting in the financial district, he decided he couldn't do it anymore. He called his therapist and told her he was going to jump in front of a train. She persuaded him to come to her office instead.

After that, Colonna stepped off the VC ladder for good. Wilson, meanwhile, has climbed to its highest rung. As Colonna joked onstage at a conference in Brooklyn this summer, "*New York* magazine had called Fred and I the 'princes of New York.' He's now a f__king king, and I'm a court jester." Colonna says he doesn't regret the decision; it has allowed him to live a healthy, honest, and meaningful life.

For many, depression can strike at any moment, even when times seem good. Tim Sae Koo, 26, started Tint, a San Francisco social discovery site, in college and is now its CEO. ▷▷



Jerry Colonna's experiences with depression led him to start an organization that helps executives deal with the disorder.

▷▷ It hasn't been easy. Early on, after a dispute over office space caused two cofounders (a childhood friend and an ex-girlfriend) to leave, he used work as a distraction. He would stay at the office until 10 p.m. and return home to grind out more emails. Exercise, social events, even casual conversations with colleagues—he viewed them all as mere distractions. Then one day he overheard coworkers swapping funny stories from the weekend. He was struck by a "feeling of sorrow." His life felt so small. In 2013, when Tint hit its goal of becoming profitable, he felt emptiness rather than elation. "I realized, no one else really cares," he says. "What am I doing all this for?"

Since then, he's taken steps to change his routine. He works less and eats better. He makes time for physical activity, for socializing, for "living in the present." But by its nature, being a founder remains difficult. Earlier this year the company cut its projected revenue, and Koo had to lay off five employees.

Psychologists encounter different forms of depression in entrepreneurs. John Gartner, a psychologist and clinical assistant professor of psychiatry at Johns Hopkins University Medical School, says he has encountered a number of high achievers who deflate when they're under-stimulated. He recounts a client who, after selling his business, took to the sea on a yacht. It seems like a nice life, Gartner says, but "without the challenge of a new frontier the client felt like he had no purpose."

And some business launchers don't have anything resembling a stereotypical get-up-and-go personality. For example, David Mandell, 49, has always been a melancholy guy. "We all have a set point," he says. "Some people's set points are on the happy side, some people's set points are on the not as happy side. My set point is edged toward the depression side."

WHEN HIS COMPANY REACHED A KEY GOAL, TIM KOO FELT EMPTINESS. "WHAT AM I DOING ALL THIS FOR?" HE WONDERED.

Mandell lost faith in the first business he cofounded because of what he calls strategic whiplash (the startup began as a social media platform, rebranded as a real-time search engine, and finally morphed into a real-time ad exchange platform). He hated what the culture had become. "It wasn't friendly," Mandell recalls. "The good people were leaving because they were unhappy, and the bad people were staying because they didn't care."

And so in 2008, he left. His inability to stop his startup from turning into something he wasn't proud of made him feel like a total failure. An ugly mantra cycled through his head: He was letting down his employees, his investors, his family.

Mandell initially retreated. He didn't even want to leave the house. He couldn't shake his feelings of inadequacy until a friend asked if he would be an adviser to a startup. The request was the lifeline Mandell needed; his experience and skills were worth something. It was enough to get him out of the house, and he started to feel better. Since then he has launched another startup, PivotDesk, which lets startups rent out their extra space.

If his business fails, Mandell knows his mood will plunge, and why wouldn't it? Freeman argues that entrepreneurs should treat depression the way they would "any other issue that poses a risk for the business": Acknowledge the issue and develop a strategy for tackling it.

Feld deploys what he calls tactical steps—no more coffee or alcohol, no screen time from Friday evening to Sunday morning—when he feels vulnerable to despondency. "This s__t is really hard," he says. "As a founder, you are going to go through some rough spots. If those rough spots include a depression, that's okay." He wants to end the perception that depression bars someone from being a successful founder or executive. "I reject that," he says. "More and more people are rejecting that." Instead, it's more analogous to a broken leg or diabetes—an undeniable impediment, but a manageable one if addressed. F

PASSIONS

TIME
WELL SPENT

CULTURE

MAKING IT ON BROADWAY

They met in a performing arts camp. Now they run a mobile ticketing app that is turning millennials on to theater.

BY TOM HUDDLESTON JR.

TodayTix now sells about 5% of Broadway tickets.

ON A WET, late-October evening, Merritt Baer and Brian Fenty sat in the audience of *Tick, Tick ... Boom!*—an off-Broadway musical about a SoHo waiter who pines for Broadway success before he turns 30.

The two men could relate. Baer and Fenty, the founders of TodayTix, a mobile app selling theater tickets, met as teens at ▷▷

WARING ABBOTT—GETTY IMAGES

▷▷ a summer theater camp. Theater geeks who dreamed of acting careers, they had both seen and loved *Tick, Tick* before, back in the early 2000s (Fenty, during its off-Broadway run; Baer, on its national tour in Florida). And they each gave up performing after college. "We both were very passionate about the theater," Baer, the CEO, says. "But somewhere along the way, [we] realized that other people's talents were continuing to grow, and ours were plateauing."

The TodayTix cofounders: CEO Merritt Baer [left] and executive chairman Brian Fenty hanging out at New York City's Cherry Lane Theatre.

Unlike many other wannabe actors, though, Baer, 31, and Fenty, 30, figured out a way to turn their passion into a business. Launched only three years ago, TodayTix is an app for last-minute theater tickets (tickets can be purchased for events up to one week in advance). It has already become a familiar New York sight, with its red-shirted agents delivering tickets to customers outside Broadway and some off-Broadway theaters.

With nearly $16 million in funding, from a mix of venture capitalists and investors such as Shake Shack founder Danny Meyer and United Talent Agency CEO Jeremy Zimmer, TodayTix now operates in 10 cities, including Chicago, London, San Francisco, Washington, D.C., and Los Angeles. It has sold more than 1 million in tickets so far and has partnerships with more than 400 theaters worldwide, focusing on moving unsold inventory.

Even more notable, it has managed to attract young customers. According to the Broadway League, the average age of Broadway-goers is 44, while TodayTix says its average customer is 29. "We're creating this next generation of theatergoers by making theater accessible" to millennials, says Baer.

In retrospect, TodayTix seems like a foregone conclusion.

Although Baer and Fenty drifted apart after attending the theater camp, French Woods, they ended up following remarkably similar career

▲ PHOTOGRAPH BY **ROGER KISBY**

paths after college. Fenty became a venture capitalist with Hamilton Investment Partners while also producing David Mamet's *Oleanna* on Broadway in 2009. Baer worked at Lazard Frères and the European ticketing website Viagogo, and he also began producing shows on Broadway. He ultimately won a Tony Award for the 2012 production of *Death of a Salesman.*

In 2010, the two reconnected through another French Woods alum and began tossing around business ideas related to theater. With up to 19% of tickets unsold annually on Broadway, "there's roughly $300 million of unsold inventory," Baer says. At the same time, they both noticed the industry's lack of innovation when it came to ticketing. Finding discount tickets online can be a cumbersome process, with many sites requiring codes and several steps.

Fenty and Baer's goal: to sell tickets languishing in inventory at discount prices—and make it a simple, one-stop process. The result is an app that sells "week of" theater tickets, offering discounts and even some free or deeply discounted ticket lotteries. Another improvement: It takes less than 30 seconds to buy a ticket.

Service fees are also kept slightly lower—$7.50 to $12.50 per ticket in New York, $5 in other cities—compared with roughly $14 at Telecharge, owned by the Shubert Organization.

"If you have TodayTix, you can scroll down the list, even if you're not thinking about going to something, and your night might take a totally different turn," says Fenty.

FAVORITE THEATERS

THE WARNER THEATRE
Torrington, Conn.: The stunning, over-the-top Art Deco theater, which opened in 1931, offers a mix of local community theater, regional tours, and rock acts, says Fenty.

LONDON PALLADIUM
London (right): Make sure to catch a West End musical in this iconic theater. Andrew Lloyd Webber, the owner, is an oenophile, Fenty notes, so there is also "a great bar upstairs."

VIENNA STATE OPERA
Vienna (left): Even if you're not a hard-core opera fan, it's worth checking out this "gilded gem," Baer says. Built in the mid-1800s, it features top-notch productions.

THE DELACORTE THEATER
New York City: The Public Theater offers free Shakespearean productions, with A-list actors, in an open-air venue. "Always memorable," Baer says.

As executive chairman, Fenty is responsible for managing investors, partnerships, and business development, while Baer, the CEO, manages product, marketing, and operations. But the two work very closely. "It's one of the benefits of having a cofounder that is a best friend, sounding board, and longtime part of my life," says Fenty.

With headquarters in New York City, TodayTix now claims about 5% of all Broadway's ticket sales, and at least 70% of TodayTix customers are millennials. "Consumers have taken to it very quickly," says Ken Davenport, a Tony Award–winning producer and writer who has blogged about the need for the theater industry to innovate.

To be sure, TodayTix is still a relatively minor player. Some top Broadway theater owners haven't made agreements with TodayTix, so when you purchase through the app, you can choose theater sections and ticket prices, but not specific seats. And some non-partner theaters on Broadway won't even let TodayTix customers pick up tickets at the box office, which is the reason for the quirky, New York–only work-around where TodayTix couriers in red shirts buy the tickets in person before hand-delivering them.

Still, as the company expands into new markets, Fenty and Baer speak of ambitious aims to tap user data so the app can make recommendations based on customers' past choices and ratings, just as Netflix does. "We're opening people's eyes to just how much theater there is out there," Baer says. Fenty agrees, adding, "It's funny the way the world works. But there's no better path we could've had to get to this business." ■

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A BOOM WITH A VIEW

IT WAS BUZZ AT FIRST SIGHT

The company behind **Snapchat** defies industry wisdom with novel "smart" eyewear and IPO plans. The crazy part? It's working. BY ERIN GRIFFITH

FIVE YEARS AGO Snapchat burst onto the scene as a mobile messaging app unlike any other. Under its new name, Snap, the Los Angeles company hasn't stopped defying convention. In recent weeks Snap pulled off two things that its Silicon Valley peers haven't been able to figure out: connected eyewear and an IPO.

First, the eyewear. Snap managed to get people excited about wearing cameras on their faces. In November Snap began selling Spectacles, a $130 pair of sunglasses with a camera that connects to the Snapchat app. If positive early reviews, long lines to buy, and heated eBay auctions are any indication, Spectacles are a hit.

The Spectacles spectacle must be shocking to the engineers at X, the "moonshot factory" of Google parent company Alphabet. They spent years working on Google Glass, their take on connected eyewear. Glass had more features and uses than Spectacles, but its $1,500 price tag, creepy sci-fi look, and eager adoption by elite techies made the device an object of ridicule. Not even a collaboration with fashion designer Diane von Furstenberg could make Glass hip.

FOR MORE
Follow Erin Griffith on Twitter (@eringriffith) or at fortune.com/boom.

Spectacles, on the other hand, are destined to be on every cool kid's Christmas list this year. Snap knows its young fans want the product to be fun. The Spectacles are brightly colored, like novelty sunglasses, and cheap enough to buy for a beach day or a night out. Moreover, Snap made Spectacles artificially scarce to stoke demand, limiting sales to vending machines dropped in far-flung locations like the Grand Canyon.

Snap's second feat is its forthcoming IPO. In November the five-year-old company confidentially filed to go public, according to reports, defying conventional wisdom among highly valued startups. The latest generation of startup CEOs disdain the short-termism of quarterly earnings reports; they see going public as a necessary evil to be avoided as long as possible. But not Snap CEO Evan Spiegel. This year has seen the slowest IPO market since the 2008 financial crisis. Snap's IPO will be the most talked-about debut since Alibaba went public in 2014.

Wall Street's thirst for a buzzy IPO like Snap is palpable. Why else would the New York Stock Exchange plaster a giant banana-yellow banner on its stately edifice, imploring passersby to "Add us on Snapchat"? NYSE executives have even donned neon Spectacles during opening and closing bell ceremonies.

The listing could do more than warm up a chilly IPO market. The investment world is hoping that Snap's IPO will help get millennials interested in investing. Most young people don't play the stock market, according to surveys, because they don't have the money or the understanding. Personally, I would be surprised if Snap's IPO will change that reality. But the company twice defied the world's expectations to generate buzz for connected eyewear and a public offering. Why not a third time? ■

▲ ILLUSTRATION BY **MICHAEL GEORGE HADDAD**

NEW-TECH'S PROFIT BLACK HOLE

Judging by the last half-decade's worth of tech IPOs, you might think a company has to forgo profits for years and years in order to grow. Don't buy it. **BY DAN LYONS**

THERE WAS A TIME when a company could not sell its shares to the public unless its revenues were growing and it was turning a profit. Companies that lost money were deemed too risky for public investors. Those startups raised money from venture capitalists, who accepted the outsize risk for the chance to reap outsize returns.

Oh, how quaint that time was. Most of the tech companies that have gone public since 2011 are still posting losses. Facebook, the biggest of the new public companies, is a mighty exception, of course. But the six next-biggest newly public tech companies, ranked by market value, all lose money, and not a little. LinkedIn, Workday, Palo Alto Networks, ServiceNow, Twitter, and Splunk lost a combined $1.7 billion in their most recent fiscal years.

This is not by accident. It's a new business model. These companies, in some cases, could turn a profit but instead choose to plow money back into the business to fuel growth. Presumably one day they will reap enormous profits, once they have conquered their respective markets.

DAN LYONS is the bestselling author of *Disrupted: My Misadventure in the Start-Up Bubble.*

The game plan doesn't always work out. Groupon and Zynga were two of the hottest IPOs of 2011. Venture capitalists hailed them as category killers. Investment bankers flogged the shares to mom-and-pop investors eager to get in on the new tech boom. But soon after going public both companies fizzled. Since 2011, Groupon has lost $730 million, and Zynga has lost just over $1 billion. Twitter has been in business for 10 years and went public in 2013. Since then, the company has lost $2 billion.

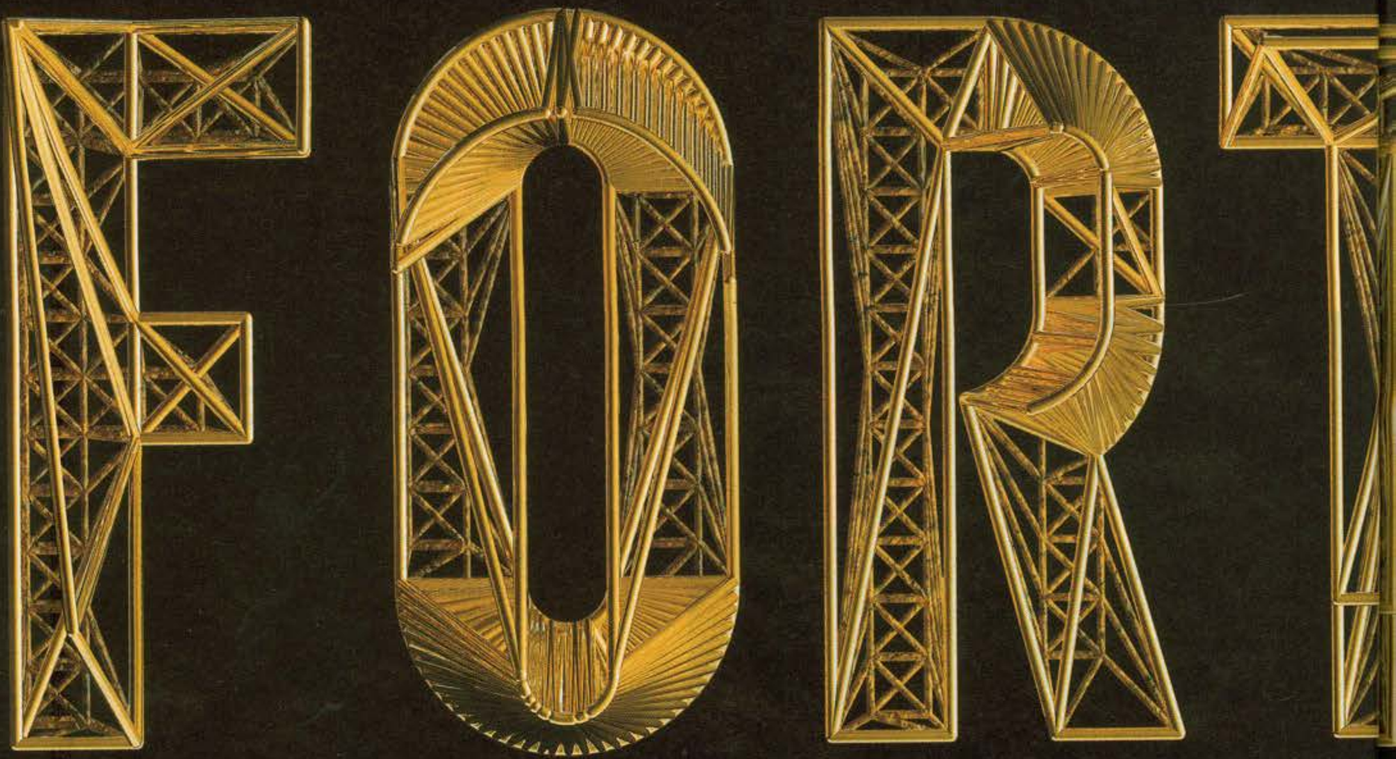
Sure, some of today's money losers may one day earn shareholders a golden payday. But this was the risk-and-reward proposition traditionally offered to VCs—not to ordinary investors, who have little hope of getting a VC-level return.

You can blame low interest rates for part of this role switch—which are pushing some investors to seek returns any way they can. "The Fed has created a bunch of 'invinceabulls,'" says Fred Hickey, the editor of *The High Tech Strategist* and a longtime tech analyst. And the approach has even worked—at least so far. Even money-losing "concept stocks" tend to do well in extended bull markets, says Hickey.

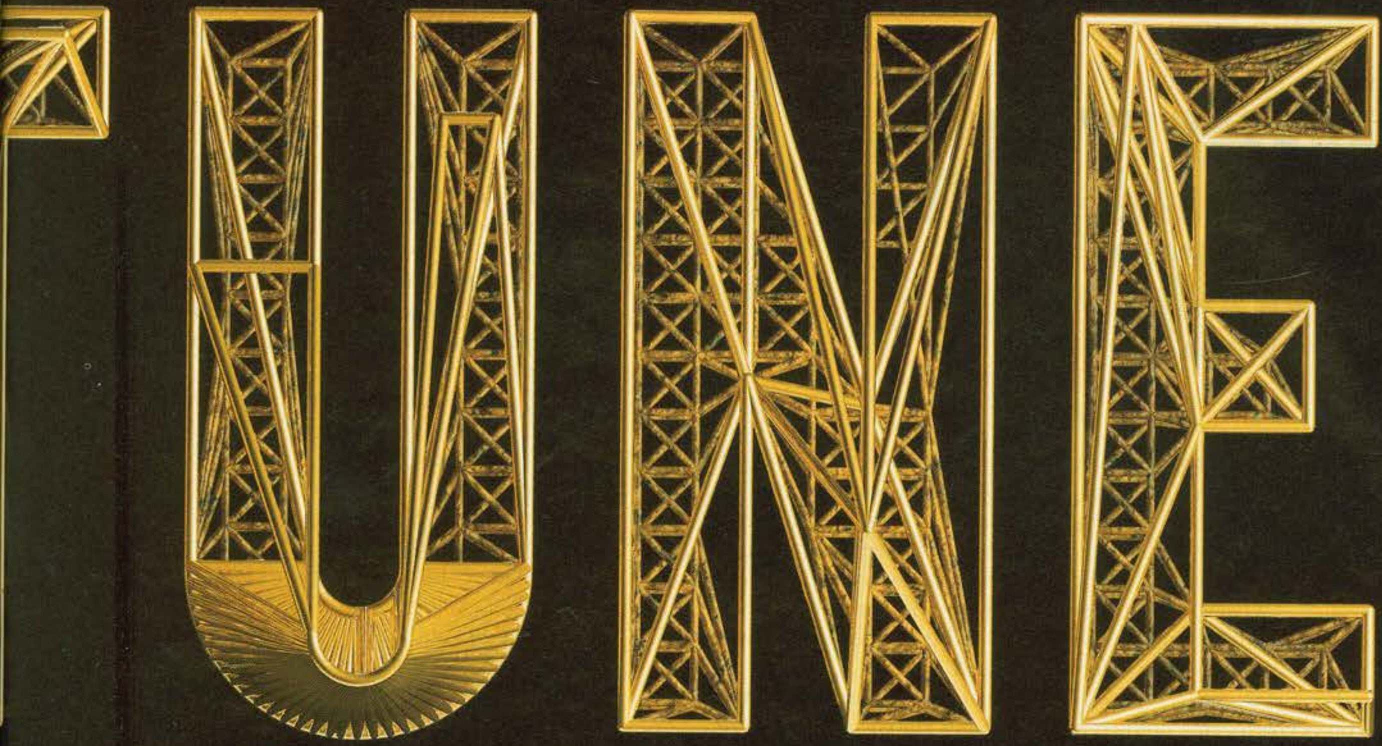
A bigger question is what this new lose-money-for-years template says about the tech industry. Why can't modern tech companies both grow and turn a profit at the same time? Their predecessors did. Has something fundamentally changed about this business such that new companies now need to be in the red for a decade or more?

Well, before you sign on to that vision, consider Facebook—which followed the old-fashioned route of not going public until it proved it could turn a profit. The social network IPO'd in 2012 after netting $1 billion on sales of $3.7 billion in 2011—and it has been growing and making money since. Last quarter its revenues grew 59%, and it earned $2.4 billion. Hmm, maybe things haven't changed that much after all. F

▲ILLUSTRATION BY **SAM ISLAND**



2017 INVESTOR'S GUIDE



Stay Cool and Stay Invested

Gut-churning headlines don't have to add up to a bad year for your portfolio. Here's how investors can have a panic-free and profitable 2017.

BY MATT HEIMER

ILLUSTRATION BY **NON-FORMAT**

2017 INVESTOR'S GUIDE

A YEAR AGO, as we wrapped up the previous installment of our annual Investor's Guide, many of our sources (and this editor) were feeling bearish enough to snarf a few salmon and crawl off to hibernate. Corporate profits were weakening, a long U.S. bull market had limped to a near standstill, and the angry populism of the presidential primaries made us wonder whether American capitalism was about to take a pitchfork in the gut.

We know what happened next. Earnings continued to flounder. Voters got angrier, not just in the U.S. but globally, and delivered two shocks—Brexit in the U.K. and Donald Trump's victory in the U.S.—that pundits all but guaranteed would tank the stock markets. So how serious was the damage from these disasters? For the 12 months through late November, the S&P 500 was *up* 8.7%, including dividends. And how was *Fortune* punished for its bearishness? Our picks nearly doubled that, with a 16.7% return.

There's a lesson here about the difference between panicked pessimism, in which you swap your savings for Krugerrands and move into the bomb shelter, and prudent pessimism. Under the influence of the latter, you stay clear-eyed about possible threats—and stay invested, in the faith that a long-term, calm approach to your portfolio will eventually pay off.

Make no mistake: 2017 will pose plenty of threats to investors, including serious headwinds for the American economy and the overpriced U.S. stock market (see "Trump: Why the Stock Market Is Stacked Against Him" on page 40). But our 2016 portfolio and our 2017 picks share some common principles that we're confident can help you make money in the year ahead. Among them:

DIVERSIFICATION MATTERS. Putting all your eggs in one basket boosts your odds of a big payoff—and your odds of needing to move back in with Mom. Diversification makes it more likely that you'll benefit if any sector of the market rises, without losing your shirt when others fall. To see how our 23 stock and fund picks this year put that principle into action, read "Stocks to Keep a Nest Egg Growing" on page 56.

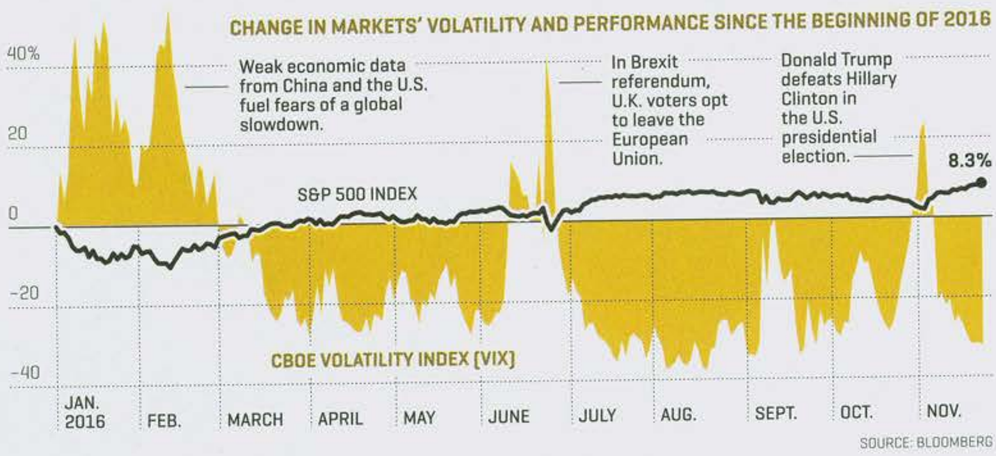
DIVIDENDS MAKE A DIFFERENCE. Almost 80% of the winners in our 2016 portfolio owed a sizable chunk of their gains to dividends. And dividend income can make a so-so year better for investors in years when stock prices are sluggish. Our take on today's dividend stocks begins on page 78.

TIMING ISN'T EVERYTHING. Three of our 2016 picks returned better than 40%, and two of those three reaped most of their gains over spans of just a few weeks—Virgin America, when it announced that it was negotiating with a buyer and then closed a deal; and Wynn Resorts, after a better-than-expected earnings report lured investors back to the stock. The lesson: Rather than try to time the market, buy stocks with good fundamentals at a good price, so you'll be on the ground floor if and when good news arrives.

The year ahead will undoubtedly test your composure many times. We hope our guide will help you ace those tests. And for expanded coverage, visit fortune.com/investors-guide-2017.

Tuning Out The Noise

Bursts of headline-driven anxiety, as measured by the VIX volatility index, only briefly interrupted the U.S. stock market's upward march in 2016.



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INVESTOR'S GUIDE 2017

TRUMP

Why the Stock Market Is Stacked Against Him

U.S. stocks enjoyed a few weeks of exuberance after Donald Trump's surprise win in the presidential election. The honeymoon won't last. Here's what investors should do when it's over.

BY SHAWN TULLY

ILLUSTRATION BY **NON-FORMAT**

FOR A FEW GOLDEN WEEKS in November, U.S. stock markets loved Donald Trump. As this magazine went to press in late November, equities were in the middle of a record-setting rally that charged Wall Street pundits and strategists with a fresh sense of optimism. Market watchers at Goldman Sachs, JPMorgan Chase, and Raymond James cited Trump's pledge to roll back burdensome regulations and lower corporate tax rates as decidedly bullish for U.S. stocks.

But for investors who study the forces that govern stock prices *long* term, the outlook was no more upbeat after the election than it was before—and it was far from terrific. Put simply, equities are really, really expensive, and only became more so after Trump's surprise victory. "The best predictor of future returns is whether you buy at low or high prices relative to earnings," says Chris Brightman, chief investment officer of Research Affiliates, a firm that oversees strategies for $161 billion in mutual funds and ETFs. "Today individual investors and fund managers who expect the near-double-digit returns we've seen over history will be sorely disappointed."

James Montier, a value investor at asset-management firm GMO, provided this dim appraisal of U.S. stocks: "This is a hideously expensive market, and I don't need to own it."

Take a deeper dive into the thinking of pessimists like these, and it's hard not to reach similar conclusions. (More on that in a moment.) Fortunately, investors can garner much bigger rewards by looking beyond the super-rich American market and beyond stocks in general. This is the time to take a broad, venturesome view encompassing all the best—meaning mainly the cheapest—places to put your money.

As we'll see, spreading your portfolio across a broad range of underpriced assets can add crucial percentage points to your returns. Best of all: If you do it thoughtfully, you can improve your odds while shouldering little or no extra risk.

LET'S EXAMINE WHY the near future for U.S. stocks looks downbeat. Over the past 100 years, the S&P 500 has delivered average annual returns of 9.6%. Wall Street optimists and many pension fund managers believe that past is prologue and that equities will continue to deliver those historical returns. But it won't happen for a while for one reason: On average the folks who pocketed those nearly double-digit gains in past decades were buying at far lower prices than the big valuations prevailing today.

Here's why the market math is so daunting. When you purchase a broad swath of equities, say an S&P 500 index fund, the returns you can expect over the next decade or so comprise four building blocks: the starting dividend yield, projected growth in real earnings per share, expected inflation, and the expected change in "valuation"—that is, the expansion or contraction in the price/earnings (P/E) multiple.

Let's start with the first building block: the dividend yield. The main reason high prices foretell paltry gains is that rich valuations make dividend yields smaller. It's dividends that have provided the richest rewards to investors. Since 1871, the S&P dividend yield has averaged 4.9%, though it has been lower in recent decades.

The problem is today's highly elevated P/E ratio. The P/E of the S&P 500 stands at 24; that's well above the average of 16 over the past century, and 19 since around 1990. Big U.S. companies, on average, pay out half their earnings in dividends. But because the "P" is so towering, you get far fewer dollars in dividends for every dollar you pay for stocks. Today the S&P dividend yield stands at a slim 2%.

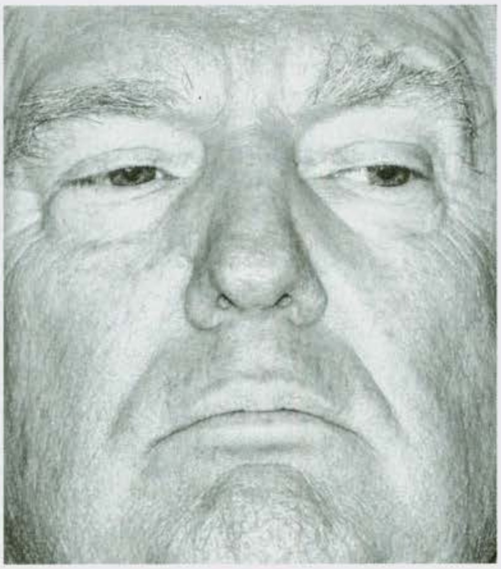
So how much will the second building block—real growth in earnings per share—add to that weak yield? In today's bluebird forecasts for stocks, the biggest fallacy is highly inflated expectations for earnings. "Since the mid-1980s, profits have grown at unusually high rates, giving rise to the mistaken idea that we were in a 'new normal,'" says Brightman. "Earnings rose to a historically high share of national income that they couldn't possibly sustain." In fact, the inevitable decline has already begun. S&P profits, based on trailing earnings per share over the past four quarters,

INVESTING FOR A TRUMP ECONOMY

GO ABROAD
Chris Brightman, chief investment officer of Research Affiliates, thinks that a foreign-centric stock portfolio could outperform a U.S.-only portfolio by as much as three percentage points a year over the next decade. For *Fortune*'s stock picks in Europe and emerging markets, see our stocks-and-funds story in this issue.

The Trump Economy

Strong headwinds for the head of state.
BY AARON TASK



MARK PETERSON—REDUX

Donald Trump shocked the world and confounded the pundits by winning the presidency. And just as confounding was the way U.S. stocks surged in the aftermath—because implicit in that surge was a belief that a Trump administration could overcome some very challenging economic obstacles.

The bullish bet is that Trump's plans to cut taxes (corporate and personal), boost spending on defense and infrastructure ($1 trillion is a *lot* of money), and cut regulations (so long, Dodd-Frank) will unleash a glorious cycle of faster GDP growth, leading to surging corporate profits, thus spurring hiring and more robust consumer spending and even-faster growth (lather, rinse, repeat).

Seemingly lost in the postelection euphoria was any concern about the potential negative effects of Trump's planned restrictions on immigration and trade, not to mention these five macro headwinds any incoming President would have had to grapple with.

peaked in September 2014 and have dropped by 15% over the past two years.

Although earnings careen in a zigzag pattern from year to year, their trend stretching over long periods is remarkably consistent. U.S. profits expand with the overall economy, growing at an annual clip that has exceeded 3% over the past century. But what matters to investors is earnings per share, what they're effectively receiving in dividends, buybacks, and reinvested profits that drive capital gains. And it turns out EPS expands at just half that rate, or around 1.5%, adjusted for inflation.

The reason for the big lag is twofold. First, companies constantly issue new stock to reward executives and make acquisitions, and the new issues far exceed buybacks. Those extra shares dilute the portion of profits flowing to existing shareholders. Second, new enterprises, often funded by IPOs, invade their markets and reduce the incumbents' share of the industry's profit pie. "Profits can grow above trend for certain periods, but they're still elevated," says Brightman. "The best assumption is that they grow at the historical real rate of 1.5%."

To sum up so far: A 2% dividend yield, plus the 1.5% projected EPS growth, should deliver a future real return of 3.5% a year for the next

INVESTING FOR A TRUMP ECONOMY

PLAY INFLATION
Rising inflation could be a mixed blessing for stocks. But it's good for investors in floating-rate bank loans [whose interest payments rise with inflation] and TIPS, Treasury securities whose principal rises with consumer prices. For more, see our Investor Roundtable in this issue.

Overpriced

U.S. stocks are very expensive relative to their earnings, which makes strong returns unlikely in the short term.

SOURCES: BLOOMBERG; S&P DOW JONES INDICES *BOTTOM LINE

1 It's the Cycle, Stupid
As measured by the National Bureau of Economic Research, the current economic expansion began in June 2009 and is already the fourth longest in the postwar era. That said, economic growth cycles don't typically die of old age but are scuttled by higher taxes, unwise regulation, or—most often—tighter monetary policy, which leads us to obstacle No. 2 for Trumponomics...

2 Hawks in Flight at the Fed
Minutes of meetings from the Federal Open Market Committee and speeches by Fed officials suggest that the Federal Reserve has been itching to "normalize" policy for some time now. Trump's promises to boost fiscal spending, which tends to spur inflation, gives the Fed reason to raise rates. No matter the impetus, higher rates will lead to constraints on credit for both consumers and businesses, which will crimp growth. For investors, the old Wall Street saw "Three hikes and a stumble" is worth remembering.

3 D.C. Dysfunction
Control of both ends of Pennsylvania Avenue gives the GOP a chance to enact Trump's fiscal stimulus policies. That said, the proposals are budget busters—according to the Tax Policy Center at the Brookings Institution and the Urban Institute, Trump's tax plan would add close to $800 billion to the annual deficit when it first takes effect, with that amount increasing over time. That will likely stir opposition from Tea Party members and fiscal conservatives in the House. Plus, Republicans won't have a filibuster-proof Senate majority.

4 Global Retreat
Even before Trump gets a chance to enact his "America First" policies, global trade is already on the downswing. If he sticks to his promises to build a wall on the Mexican border, sharply limit immigration, and renegotiate [or abandon] trade deals, that will certainly dampen global GDP growth and hurt the U.S. as well. As Kevin Brady, chairman of the House Ways and Means Committee, said shortly after the election, "To grow our economy, it's just not enough to buy American. We have to sell American around the world."

▷▷

decade. Add the third building block, the approximately 2% inflation predicted by the Fed, and the total expected return on big-cap U.S. equities comes to just 5.5%.

The fourth building block, expected change in the P/E, is a cause for concern. It's possible that high P/Es are a new normal. Monetary policy in recent decades has been successful in keeping inflation in check, a plus for valuations. And the shift of the economy from volatile manufacturing to a relatively steady service sector has added stability to revenues. Still, it's unlikely that a P/E of 24 will rise further; indeed, it's more likely in danger of shrinking, in which case stocks would take a beating.

Bottom line: Even under the optimistic assumption that for the next decade P/Es stay about where they are today, the expected return on equities remains 5.5% a year—the sum of the dividend yield and EPS growth, including inflation. What's more, to dampen risk, many investors will want a balanced portfolio of stocks and bonds; the classic mix is 60% equities and 40% fixed income. With the current yield on the 10-year Treasury at 2.2%, the expected return of the 60/40 blend comes to 4.2%—and that, too, is disappointing compared with the historical average of 7.6% for that asset mix.

INVESTING FOR A TRUMP ECONOMY

COLLECT A CHECK When stock price growth is sluggish, dividends account for a much bigger share of investors' gains. The problem: Dividend-paying stocks are historically expensive right now. To find out where professional money managers are looking for bargains, see our dividends feature in this issue.

IT'S SAFE TO ASSUME a 4.2% return isn't what average Americans need to swell their nest eggs for retirement or propel their college savings plans. What to do? To boost returns, go broad and abroad.

American mutual fund investors have an average of around 25% of their portfolios in non-U.S. stocks. But it makes sense to boost that allocation now because years of underperformance have made foreign stocks so much more affordable relative to American ones—in Asia and Europe and in emerging markets from South Korea to Turkey.

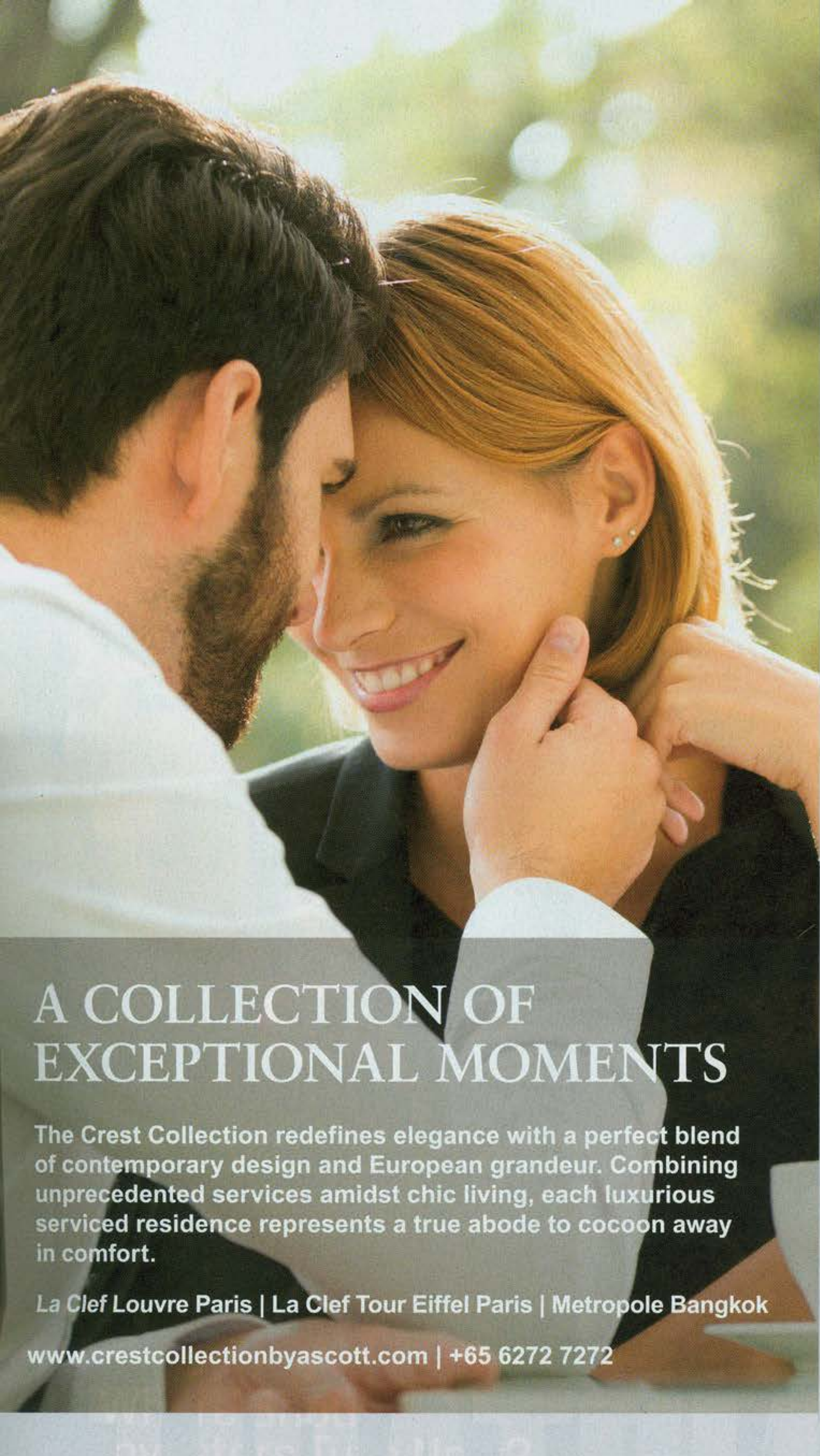
The best guide to future returns is the cyclically adjusted P/E ratio, or CAPE, developed by economist Robert Shiller. The higher the Shiller earnings yield, the better the bargain in general. If the Shiller methodology is adjusted using a formula from Larry Swedroe, director of research for the BAM group of investment firms, the earnings yield on developed market stocks excluding the U.S. and Canada is 7.4% net of inflation; for emerging markets, the number is a spectacular 9.2%. For S&P 500 stocks, it's 3.76%. "You have to be humble—a big range of outcomes is possible," says Swedroe. "But it's still the best yardstick we have for future returns."

To benefit from those big yields, Brightman designed two portfolios that shun U.S. shares in favor of developed and emerging-market foreign equities. The first choice, called Contrarian, is no more (or less) volatile than the U.S. 60/40 mix. It puts 25% into foreign stocks, 25% into U.S. Treasuries, and 10% each into commodities, emerging-market currency, bank loans, high-yield bonds, and 5% each into TIPS and local-currency emerging-market debt. The second portfolio, "Maverick," places 50% of assets into foreign shares and lowers the Treasuries allotment from 25% to 10%. Brightman expects Contrarian to deliver a 5.8% annual return in the next decade. Maverick is the champ, boasting a 7.2% expected return. It's a bit riskier than the 60/40 or Contrarian, because of the higher concentration of foreign equities, but its wide diversification across geographies and product groups makes it a still-safe bet.

Despite the Trump euphoria, the fun's over for a while in U.S. stocks. The investment world is vast, varied, and, outside of America, full of bargains. Over the next decade, investors should learn to say "bull market" in a few languages other than English. ■

The Trump Economy

5 Demographics as Destiny The U.S. population is aging; nearly 15% of Americans were over age 65 in 2015, according to the Census Bureau. Between now and 2050, population growth "is expected to tilt strongly to the oldest age groups," according to the Pew Research Center. An aging population will put more pressure on Social Security and Medicare. Assuming no change in legislation—and Trump campaigned on keeping those entitlements intact—the Congressional Budget Office predicts America's deficit will expand to $1.34 trillion by 2026. Such an increase would raise the U.S. debt-to-GDP ratio from 75% to 85% and send the cost of interest on our national debt to 13% of all spending from 7.5% currently. These scary numbers could crowd out investment in the private sector and result in global investors demanding much higher interest rates on Treasuries. Notably, while the stock market rejoiced in Trump's victory, the bond market suffered a vicious selloff that could be a harbinger of tough times ahead.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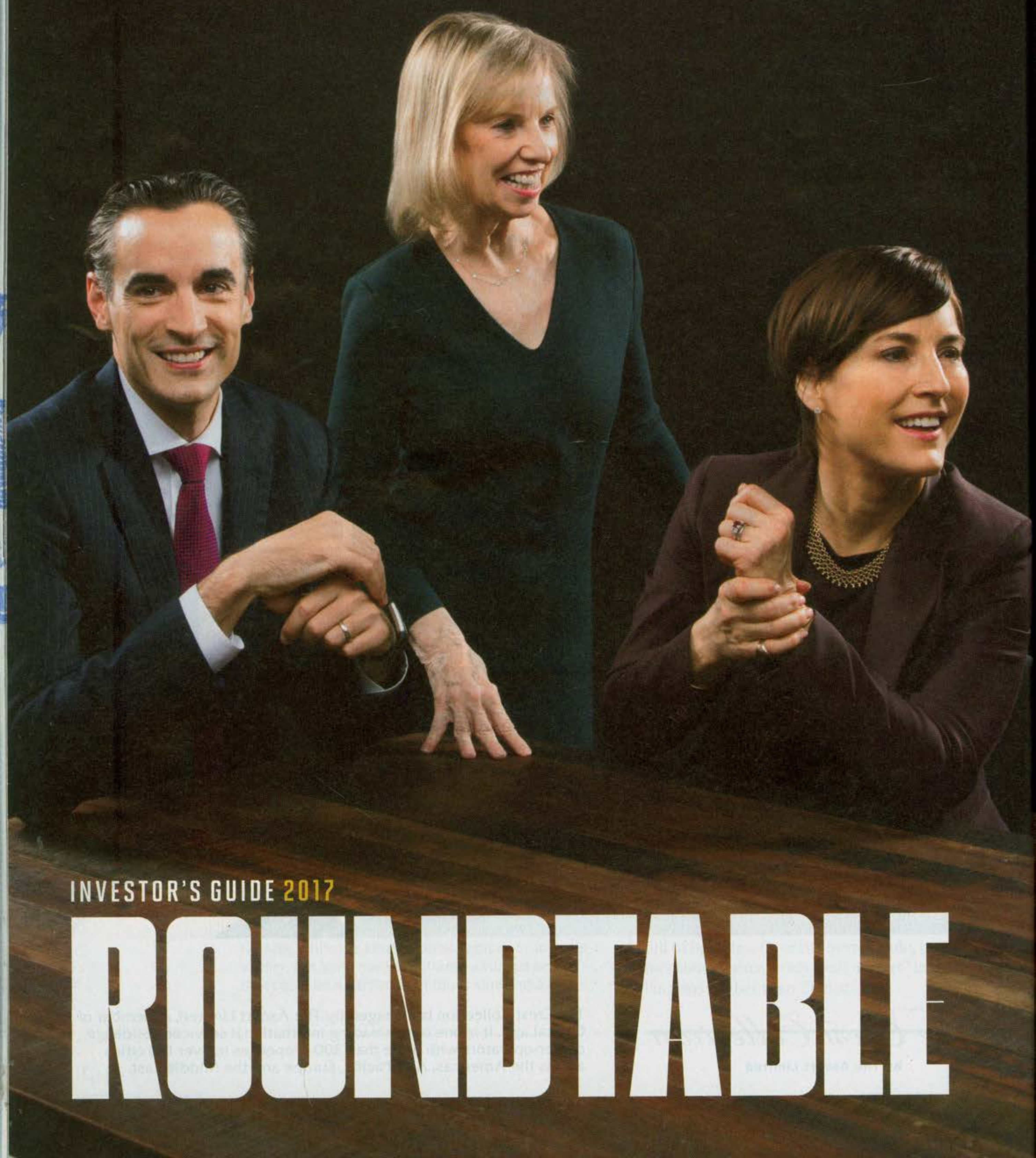
SEBASTIEN PAGE
T. Rowe Price
COHEAD, Asset Allocation Group

ANN WINBLAD
Hummer Winblad Venture Partners
COFOUNDER AND MANAGING PARTNER

SARAH KETTERER
Causeway Capital Management
CEO

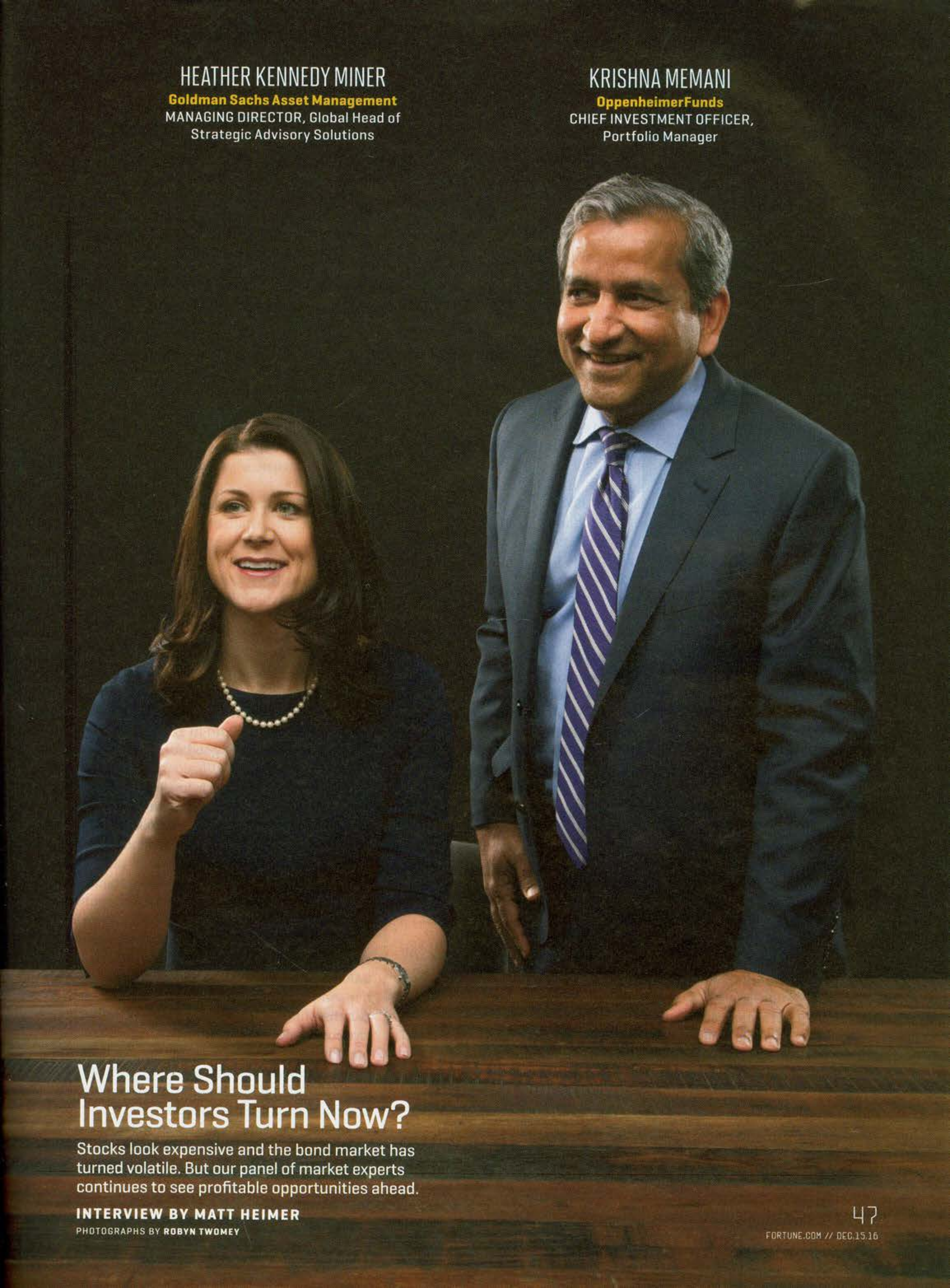


INVESTOR'S GUIDE 2017

ROUNDTABLE

HEATHER KENNEDY MINER
Goldman Sachs Asset Management
MANAGING DIRECTOR, Global Head of Strategic Advisory Solutions

KRISHNA MEMANI
OppenheimerFunds
CHIEF INVESTMENT OFFICER, Portfolio Manager



Where Should Investors Turn Now?

Stocks look expensive and the bond market has turned volatile. But our panel of market experts continues to see profitable opportunities ahead.

INTERVIEW BY MATT HEIMER

PHOTOGRAPHS BY **ROBYN TWOMEY**

FOR SEVEN YEARS and counting, U.S. investors have lived in a financial paradox—fretting about slow economic growth while watching stock markets steadily climb. Will a new era of Republican rule add more fuel to the aging bull market, or generate a new kind of uncertainty? To seek clarity for 2017, *Fortune* convened our annual roundtable of market experts.

This year's panel included Sarah Ketterer, CEO of Causeway Capital, a $44 billion asset-management firm; Sebastien Page, cohead of the asset-allocation group that sets strategy for $147 billion worth of target-date mutual funds at T. Rowe Price; Ann Winblad, cofounder and managing partner of Hummer Winblad Venture Partners, a venture capital firm that has been investing in enterprise software firms since 1989; Krishna Memani, chief investment officer at OppenheimerFunds, which has $219 billion under management; and Heather Kennedy Miner, global head of strategic advisory solutions at Goldman Sachs Asset Management, which manages over $1 trillion. Here, edited excerpts from their discussion.

***MATT HEIMER:* Let's start with what people on Wall Street have been calling the Trump Trade. Donald Trump surprised the pundits by winning the U.S. presidential election. Since then, stocks have been rallying and bond prices have fallen pretty sharply. What are investors anticipating and reacting to?**
KRISHNA MEMANI: These moves reflect a change in conversation and a change in the tone for the markets. For the longest time we have been talking about disinflation and deflation. All of a sudden somebody comes in and wants to reflate the world. And that has changed the mood for the markets.

***HEIMER:* Heather, how is your team reacting?**
HEATHER KENNEDY MINER: We are certainly looking at this as a regime change. I think that the equity market performance, postelection, really reflects an optimism about growth, particularly about earnings growth and lower taxes.

And to Krishna's point, the backup in rates is really a reflection of higher inflation expectations. The good news is that business confidence has improved, consumer confidence has improved.

***HEIMER:* Sebastien, what are you talking about at T. Rowe Price?**
SEBASTIEN PAGE: You can take the glass-half-full view or the glass-half-empty. The interesting thing is that the sentiment is going in different directions for stocks and bonds. The stock market's implied volatility is down 25% since the election. Bond implied volatility is up 30%. Typically, those indicators are 80% correlated.

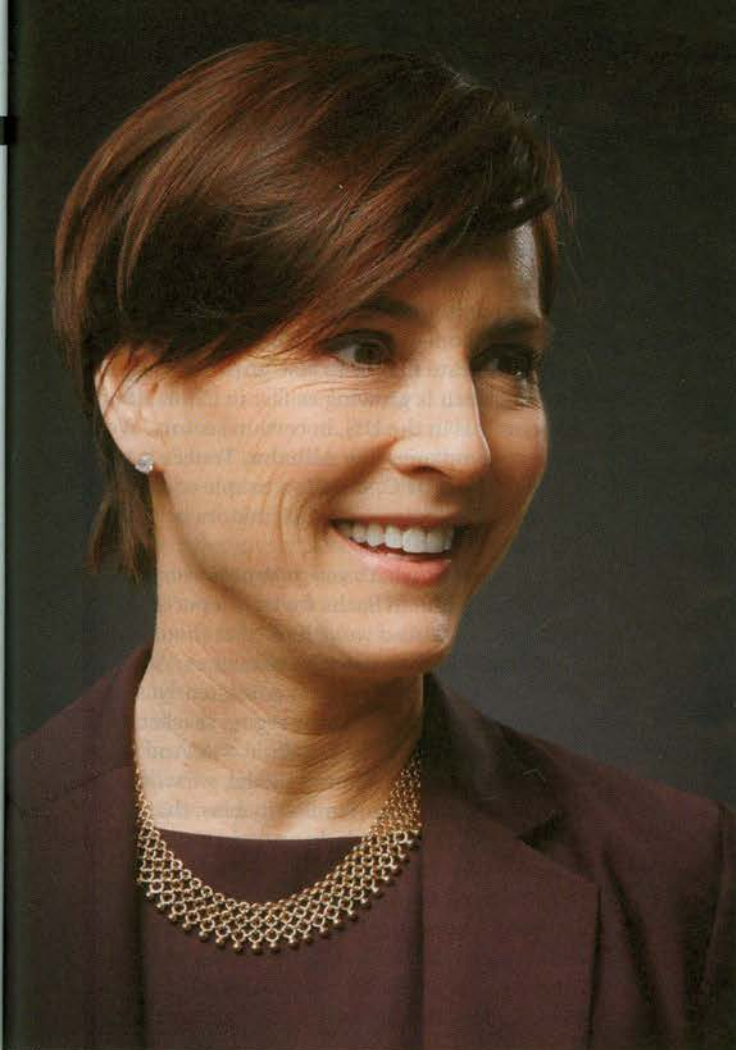
So perhaps the Trump Trade is a bit overdone, if you take the glass-half-empty view. And perhaps the market is underestimating the number of shovel-ready projects for fiscal spending, on the one hand, and maybe underestimating the impact of trade restrictions, and in general less immigration, which is not very good for growth.

***HEIMER:* So these changes in implied volatility essentially mean that investors think that stocks have suddenly become somewhat less risky? And vice versa, bonds more risky?**
PAGE: That's right.
MEMANI: I think bond volatility has gone up because bond volatility was very low to begin with. What the high bond volatility is telling you is we were expecting rates to remain low and constant, and that is not going to be the case anymore.
SARAH KETTERER: What's more interesting is what's happening beneath the surface. There's been this tectonic shift away from more economically defensive companies in consumer staples, utilities, and other interest rate-sensitive stocks—what we call long duration stocks, meaning they pay out cash over long periods. Those have fallen out of favor, and it's been amplified postelection.

Meanwhile, value stocks, especially the more cyclical, the more financially oriented—this election gave them another boost, which they deserve.

***HEIMER:* Ann, technology stocks sometimes sit outside the economic cycles we're discussing. How are the**

HAIR AND MAKEUP: DIANE NORDLANDER USING DERMALOGICA. ASSISTANT: SEEYON CHAI



companies that you watch reacting to the election?
ANN WINBLAD: Net neutrality is probably a concern. Immigration plays very heavily, because all of these companies are global. We frequently fund companies that have immigrant cofounders.

We also look ahead to IT budgets. Those have been growing steadily, and the growth of these companies depends upon feeling confidence about other enterprises increasing or maintaining their spending on IT.

Tech investors also really need to look ahead to open IPO windows. We've had that window slowly open in 2016. There are a number of great companies that are capable of being public companies in 2017, and the market dynamics will really shape the public markets for new entrants.
MEMANI: I think what has changed with respect to tech companies is slightly more subtle. The markets were assigning very significant premium valuations to those tech companies because nothing else was going to grow in the rest of the world. That has shifted. I think the luster of tech as being the sole growth arena has kind of come off a little bit. So those valuations have come down.
MINER: To comment specifically on taxes, we calculate that a one-percentage-point decline in the corporate tax rate can drive $1.50 of additional S&P earnings. And so if we're talking about a corporate tax rate coming from 26% down to 20%, which is a suggestion that's been made by some in the GOP, that could drive 10 percentage points plus in terms of earnings growth next year.
KETTERER: Not even counting the $2.4 trillion dollars that's parked overseas. If that's repatriated, and used to repay debt, for M&A, for capital expenditures, or returned to shareholders in the form of dividends, it could be very stimulative for the economy as well.
PAGE: And the interesting thing is that part of that reduction in the corporate tax rate is to be financed by getting away from interest-rate deduction at the corporate level. Which means that companies that are highly leveraged might not benefit as much as companies that have low levels of debt.
WINBLAD: I was going to comment on Krishna's point, about the premium given to the fast growers. Clearly we should see growth rates improve in other industries. And we'll see some of that growth-rate improvement because they are becoming more like tech companies. Look at General Electric as a good example. It effectively is a software company at this point. It started that process five years ago.

But I do think we'll still see very fast growth in the core tech companies themselves.

***HEIMER:* Which are the "core" companies?**
WINBLAD: McKinsey issued a report saying only about 18% of global enterprises are far into digital transformation. So it means we've got most of the planet still trying to digitize everything. Who are the beneficiaries here? The software arms merchants. They're **Amazon, Microsoft,** Google [parent **Alphabet**], and to some extent **IBM** as well. Anyone who offers a cloud platform.

Around them are another set of young companies like **Atlassian.** Atlassian is a company that develops tools to actually write the code. Goldman Sachs has 20,000 developers. And those developers need to write code 30% faster to keep up with their peers who are digitizing the financial services area.

***HEIMER:* I want to talk about international stocks, in part because you've been seeing even more volatility in those markets as people wonder what a Trump administration will do with regard to trade. Sarah, what's looking interesting to you?**
KETTERER: Value stocks are coming back. And the

> “VALUE STOCKS ARE COMING BACK. AND THE IMPETUS FOR THIS HAS BEEN, IN PART, THE SHAPE OF THE YIELD CURVE.”
> **Sarah Ketterer**
> Causeway Capital

impetus for this has been, in part, the shape of the yield curve. The U.S. rise in yields has pulled up yields abroad. This is great for banking systems. European companies depend on their banks. They don't have much of a debt capital market. And as a result, bank health equals corporate health.

So to the degree we could become more stimulative with fiscal policy in this country—accentuated by corporate tax cuts—the ramifications abroad are very positive. And we see this in the recent, really strong rally overseas in bank stocks. The only part of the world that's more uncertain now is the emerging world, in part due to the very strong U.S. dollar.

MEMANI: Emerging markets may be slightly under pressure at the moment because of expectation of Trump policies. But from a longer-term perspective, at the end of the day emerging markets are going to be the primary source of global growth for the foreseeable future.

We think the best approach to take with respect to emerging markets is really more about companies than it is about countries. So instead of allocating money to China, what you really want to do is allocate money to fast-growing companies in China. Tech is growing as fast in China, if not faster, as it is in the U.S. in certain sectors. We like Chinese companies like **Alibaba, Tencent;** banks in India like **HDFC, ICICI;** a couple of oil companies in Russia; grocery distributors in Russia.

"THE GOOD NEWS IS THAT BUSINESS CONFIDENCE HAS IMPROVED."
Heather Kennedy Miner
Goldman Sachs Asset Management

***HEIMER:* Heather, what's your take on looking abroad?**

MINER: At Goldman Sachs we have a portfolio-evaluation tool. And we've looked at thousands of portfolios of U.S. investment managers. And one of the things that we see very consistently is that many are underweight in emerging markets. The average allocation to EM is about 3%. And if you look at an optimal balanced model, we would suggest around 8%. That familiarity bias, that home bias, I think, is particularly acute in U.S. investors.

***HEIMER:* Sarah was speaking earlier about a rotation into value stocks. But Sebastien, in the U.S., you are seeing growth stocks as being actually a better buy.**

PAGE: Yeah, if you're looking at growth stocks in the U.S., relative to value, in the large-cap space, they're quite cheap. Their values were similar in the early '90s and postcrisis—both periods where growth stocks did quite well following those cheap valuation levels.

But if you step back and ask, "What's the macro story for growth stocks?" this is where we might defer a little bit. The population in the U.S. that's 65 and older is expected to go from 13% in 2010 to 20% in 2030. That's not good for growth. Debt? McKinsey estimates that the total stock of debt globally, household and corporations, over the last 15 years has gone from $88 trillion to $200 trillion. Lots of debt is not good for growth.

MEMANI: I think the point Sebastien's making is an extraordinarily good one. Let's not confuse a cyclical upturn in the U.S. economy, and to some extent in the global economy, for resolving the secular issues, the longer-term issues that we face.

Markets are discounting mechanisms. And in those discounting mechanisms, if we were expecting a certain trajectory of growth, and that trajectory got elevated because Donald Trump is now going to spend a trillion dollars and that is going to get that growth higher, we are supposed to mark our assets higher. Over time we will find out if all of this is for real.

***HEIMER:* Let's talk about the relationship between technology and growth. In a sense, all large companies are undergoing technological transformation**

so that they can increase productivity and be more competitive. What industries are starting to benefit?
WINBLAD: Let's look at the auto industry. The typical revenue per car is about $23,000 dollars. All the car companies have offices in Silicon Valley now. And they all are looking at making the car a platform for services [that can drive more revenue]. There are some very creative ideas here. We had Zipcar many years ago. Now Audi has its own version of Zipcar in Silicon Valley. Subaru has many different services that they're offering in their newest cars coming out.

Look at health care. **UnitedHealth** has done a great transition with Optum, building a big-data company side by side with a traditional health care company. We look at companies in the other industrial areas where they suddenly now see themselves as an "Internet of things" company. **Caterpillar**'s a great example there. **John Deere.** It's almost tractors.com now, not just a tractor, it is a smart vehicle.

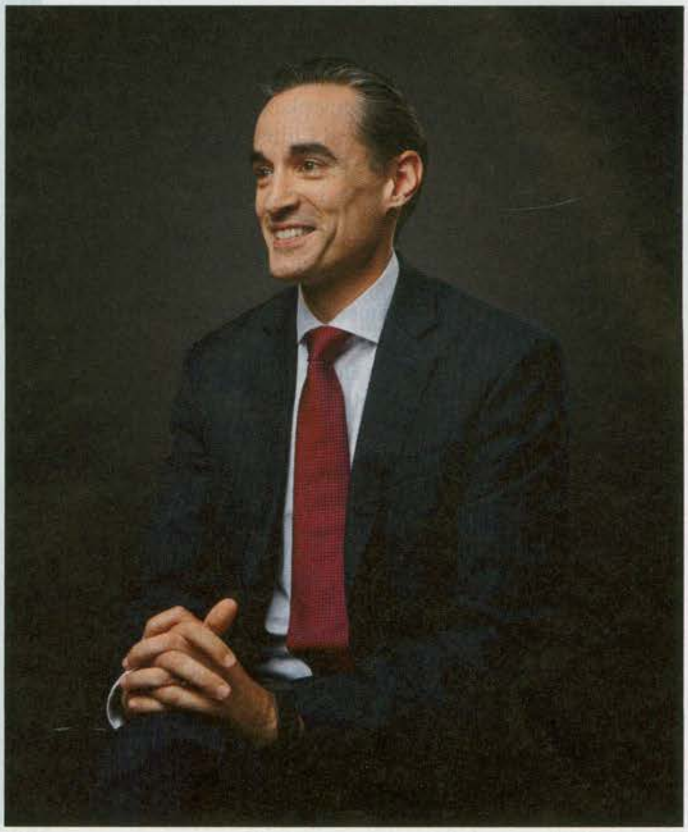
Another good example globally is **Unilever.** Jane Moran, the chief information officer, now calls herself the chief integration officer.

***HEIMER:* Sarah, of everyone here you're the one who is doing the most bottom-up stock picking. Tell me how technology is shaping your thinking.**
KETTERER: It's early days, but there are so many innovations to counter this sort of secular gloom. I'd mention **Komatsu.** Talking to their management in Tokyo, I learned that every single one of those pieces of equipment, whether it be construction equipment or mining equipment, is chip-enabled. So operators know when the equipment needs service. They know what parts are wearing down. All of that data is going to a central location to be analyzed and then sent out and implemented.

***HEIMER:* The conversation about technology makes me think about the training it takes to ensure that everyone can make the most of it.**
MINER: So look, this brings together a lot of this conversation. In the U.S., you're seeing the outlines of a pretty significant infrastructure plan that can benefit owners of hard assets.

But we're also quite hopeful that infrastructure and fiscal spending will include programs for softer infrastructure. [That means] thinking about retraining underemployed or unemployed folks back into the new economy.

If we actually get a sizable hard infrastructure program, many industries will benefit. But if we can also get soft infrastructure investment, that can drive higher productivity and, ultimately, drive greater output and reinforce monetary policy. That's going to have the best output and growth impact for the economy.



"VALUATIONS ARE FAIRLY RICH IN EQUITIES, BUT, BOY, ARE THEY RICH IN BONDS."
Sebastien Page
T. Rowe Price

***HEIMER:* Krishna, you've talked about low productivity being a barrier to growth. Can something like what Heather's talking about help get us out of our rut?**
MEMANI: I think at the end of the day, the driver of productivity growth is investments. If the Trump Trade, or if the expectation that growth rates are going to be higher than what we had assumed in that doom and gloom, then the pace of investment picks up. And if the pace of investment picks up, productivity certainly can pick up. This year may end up, in a really optimistic scenario, being the bottom of the productivity cycle.
KETTERER: I want to get back to what Krishna was saying about emerging-markets growth. One example I would give as a play on that is **Prudential Public Limited.** This is a life insurer listed in the U.K. market, so the baby was thrown out with the bathwater with Brexit. The referendum vote last June meant that U.K. stocks were considered just

the worst place to be. Of course, we couldn't get enough of them. And yet here's a company with 70% of its earnings in Asia. In not just Hong Kong and Singapore, but rapidly growing places like Indonesia, Vietnam, Thailand, and China, where they're typically in the top three in life insurance.

So if we can buy that cheaply and get a good dividend yield with it and there's growth, that is about as good as it gets.

***HEIMER:* Ann, are the data arms merchants poised to take advantage of possible pent-up growth in emerging markets, or for that matter in Europe or Asia?**

WINBLAD: All of these fast-growth companies look to expand to every possible market. And they're looking to partner with innovators in other markets. The partnership between India and Silicon Valley is extremely strong.

But we do see some real talent shortages. And we are not graduating enough STEM majors here in the United States, given our rising cost of education. It is also really hard to retool people into these specialty skills rapidly.

We do depend upon a global talent base to grow these companies. That's probably the biggest challenge and risk going ahead, given immigration issues that might happen.

PAGE: I didn't picture myself as the most bearish person on the panel. But some aspects of the Trump Trade might be overdone. I want to reemphasize that. Don't underestimate the impact of a hawkish Fed, and of rates going up and potentially putting a lid on growth.

MINER: This is a really important point that we haven't touched on yet: Valuations, particularly for U.S. equities, are full. And at these valuation levels, history tells us that you can really only generate mid-single digits going forward. So you have a lower-return environment than what you've had in the last five years. And you have higher volatility. And that requires a psychological shift of investor mind-set. Because the reality is, you're getting paid less for each unit of risk that you're taking in your portfolio.

PAGE: And valuations are fairly rich in equities, but, boy, are they rich in bonds. Have we really reached the end of the 30-year bull market in bonds? Bonds have been getting expensive, and more expensive, and more expensive. A third of the global government debt stock is in negative nominal yield territory. The global aggregate, postelection, is at 1.5% yield. This is extremely low.

> "TECHNOLOGY IS A DRIVER FOR LIFTING MANY COMPANIES THAT WE'VE THOUGHT OF AS 'OLD ECONOMY.'"
>
> **Ann Winblad**
> Hummer Winblad

That means that nowadays small moves in rates up are going to lead to big drops in bond prices.

MEMANI: If you take a step back, what the world wants more than anything else is a good, well-paying bond. Income and sources of income, if you go around and ask investors, is still the biggest challenge that they face.

In our view, the best opportunity really is in senior floating loans, because those have basically no interest rate risk. Even if rates rise, the prices on those loans don't come down. And they give you a 5% coupon.

***HEIMER:* Heather, are floating loans a part of your strategy?**

MINER: I think bank loans make sense in a rising interest rate environment. We talk to clients building a diversified income portfolio.

We start with a core equity allocation: higher-dividend-paying stocks. We don't want to buy the highest-dividend-paying, because you worry about the sustainability of those dividends. We add high-yielding fixed income, high-yield debt, emerging-market debt. We add bond proxies in terms of MLPs and REITs. And we overlay a buy/write strategy, which essentially allows you to own the equity market outright, and then sell call premiums to generate income for the portfolio.

So that type of diversified portfolio approach can get you to 4% annual income. Which is almost what we're expecting for the equity markets.

***HEIMER:* Ann, when I started covering investing, there was virtually no big tech company that paid dividends. Microsoft pays a dividend now, Apple pays a dividend. How can the big tech companies best deploy these big piles of cash that they're sitting on?**

WINBLAD: Most of these companies grow through acquisitions. And we've seen the acquisitions get bigger. It used to be these companies were too young to buy big companies. Two decades ago, Microsoft wouldn't buy a LinkedIn for 20-plus billion dollars. More of that's going to happen. I think we'll see some really unusual pairings too. We've certainly seen this in Verizon AOL.

The companies also have enormous R&D budgets. There is no national R&D anymore, per se. So venture-backed tech is the R&D arm of the world. When we see the innovation curves that have happened—cloud, big data, now intelligence, those are accelerating. Hiring is also accelerating. You see companies like Amazon where you've got 300,000 employees now.

KETTERER: I'd also point out that many of these great technology companies are listed in the U.S. market. The international developed-market indices have a mere 4% or 5% in technology.

MEMANI: I would say that there are really good tech companies overseas just as much.

KETTERER: But they're not on the indices.

MEMANI: You have companies in China that you can buy—a Tencent, a **Ctrip.com.** You have tech companies in India that you can buy that are growing at a pretty rapid clip. In size, technology may be a larger footprint in the U.S., and it's definitely more established. But the growth trajectory of technology in other countries may actually be higher than what it is in the U.S.

WINBLAD: In fact, looking at the number of billion-dollar M&A exits in the last two years, Stockholm ranked very high.

Infosys just invested in one of our young startups. Chinese companies are buying tons of small American companies, as well as investing in them. Global, cross-border investment is very, very substantial.

***HEIMER:* We could see real changes in health policy under a Trump administration. Where does health care figure in your minds right now?**

PAGE: You have insurers that could benefit, pharmas that could benefit. But then hospitals go the other way because now you have fewer people who are insured.

***HEIMER:* Or at least that's what we're anticipating.**

MEMANI: Within health care, biotechnology is a very interesting sector for people looking for growth. The way to think about biotechnology is basically as outsourcing of innovation that large pharma companies used to do. And because it is so uncertain, they don't want to do that anymore. So they let these companies develop new technologies and products and then they go out and buy them.

WINBLAD: You look at IBM's big bet on Watson. What was the first market they entered into with Watson? Health care. And that's independent of all the innovation that's happening in genomics. When you talk about biotechnology, the cost to start a young biotech company, to set up that lab, which is now all software and dependent on big data, is much, much less.

MINER: Clearly big data can be leveraged to drive revenues, to reduce costs and improve margins. As asset managers, we also have the opportunity to leverage big data.

We have eight times more data being created in 2016 than in just 2013. And asset managers who can leverage big data to find investment themes before they're reflected in the market, we think, can drive outsize returns for investors.

***HEIMER:* So the 20,000 coders Ann referred to earlier—this is what they're doing?**

MEMANI: People who can implement technology in an efficient way are going to distinguish themselves in any industry. And I think Ann was right, this is going to be the biggest differentiator.

***HEIMER:* The price of oil has rebounded of late, but it's still well below where it was in 2014. Presumably, if the economy strengthens globally, we'll see energy prices rise. How do you factor that in?**

MEMANI: From a secular standpoint, one has to wonder if the energy landscape has changed dramatically. Volkswagen is going to lay off 30,000 people because they are focusing on electric. And if that's the general trend, then the outlook for energy from a longer-term perspective is, I think, something that one has to be slightly skeptical of. For 2017 though, if the economic cycle in the U.S. picks up, and China has picked up already, the outlook for oil prices is reasonably good.

KETTERER: We've been overweight in oil and gas, and more so since the fall in oil prices. The next

Picks From the Experts

ABB
(ABB, $21)

ALIBABA
(BABA, $93)

ALPHABET
(GOOGL, $780)

AMAZON
(AMZN, $780)

ATLASSIAN
(TEAM, $27)

CTRIP.COM
(CTRP, $45)

HDFC BANK
(HDB, $64)

IBM
(IBM, $163)

ICICI BANK
(IBN, $8)

KOMATSU
(KMTUY, $23)

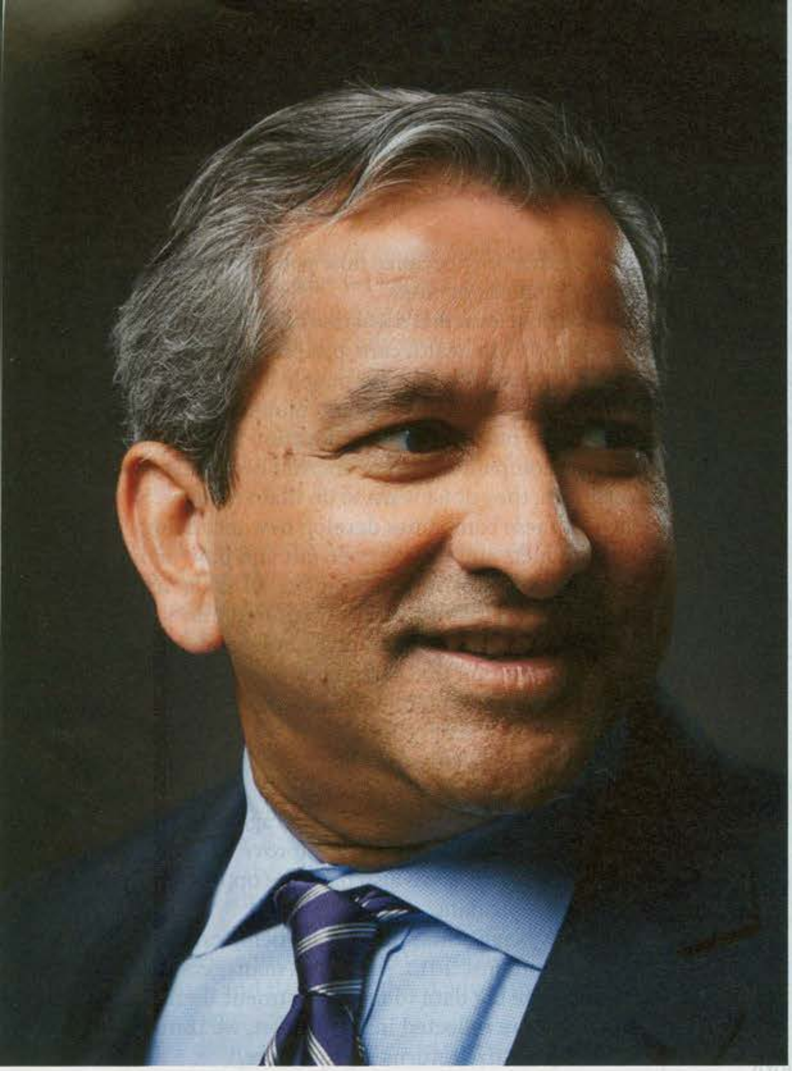
MICROSOFT
(MSFT, $61)

PRUDENTIAL PUBLIC LIMITED
(PUK, $39)

ROYAL DUTCH SHELL
(RDSA, $50)

TENCENT
(TCTZF, $25)

STOCK PRICES AS OF 11/25/16



10 years we're going to be using fossil fuels heavily. We've got a global supply of roughly 97 million barrels a day, and demand just a couple of hundred thousand barrels per day less. So we're on the razor's edge of having demand exceeding supply. There's more upside in crude oil prices.

It's worth looking at those beleaguered integrated oil and gas companies. Take **Royal Dutch Shell.** Here's a company that has cut everything they can think of. They cut capital expenditures from last year's level by 35%. They've cut their debt to equity down to 20%. The dividend yield is 7%.

PAGE: Our analysts in the equity group continue to take a bearish view on oil prices. They literally count the rigs everywhere, and their view is that the market is underestimating the supply.

MINER: We're clearly at a turning point. Demand has been fairly stable here, growing at about 1.5%. Supply has become more price-sensitive. The U.S. shale industry is now the marginal producer. And rig counts went down to about 320 from 1,600. But now, with the rebound in prices, rig counts are back up around 500.

***HEIMER:* Can oil producers adapt more quickly to changes in supply and demand today?**

MEMANI: Because of U.S. shale and because of certain political situations in the Middle East, the swing capacity is quite substantial. So the likelihood that oil goes from $50 to $100 under any situation is pretty small. And similarly the likelihood that oil goes from $50 to $10, is pretty small.

MINER: I would agree.

KETTERER: [Look at a company] like **ABB**—the oil and gas industry is one of its major customers. And they're in there with all these tools, both software- and hardware-oriented, to help these exploration and production companies be much more efficient. So they don't need hundred-dollar oil anymore. Many of these companies can make a lot of money at $50 a barrel.

***HEIMER:* As a final question, what's the biggest opportunity and the biggest risk in the year ahead?**

MEMANI: So Brexit [and] Donald Trump's victory effectively brought to the world the notion that we have to do something dramatic on the fiscal side, stimulating the economy with government spending. And if that actually comes about, then we have the potential of breaking out of some of these structural issues that we have been facing for a long time.

And the risk is something along the same lines. While the outlook for growth has improved, there's a potential that the Federal Reserve gets forced into tightening much sooner than the gradual talk that they have been talking for a long time. And as a result, we end up with a recession in 2018.

***HEIMER:* Sebastien, how about you?**

PAGE: Biggest risk: interest-rate risk. We've just been through this environment during which the 10-year bond yielded less than dividend yields on stocks.

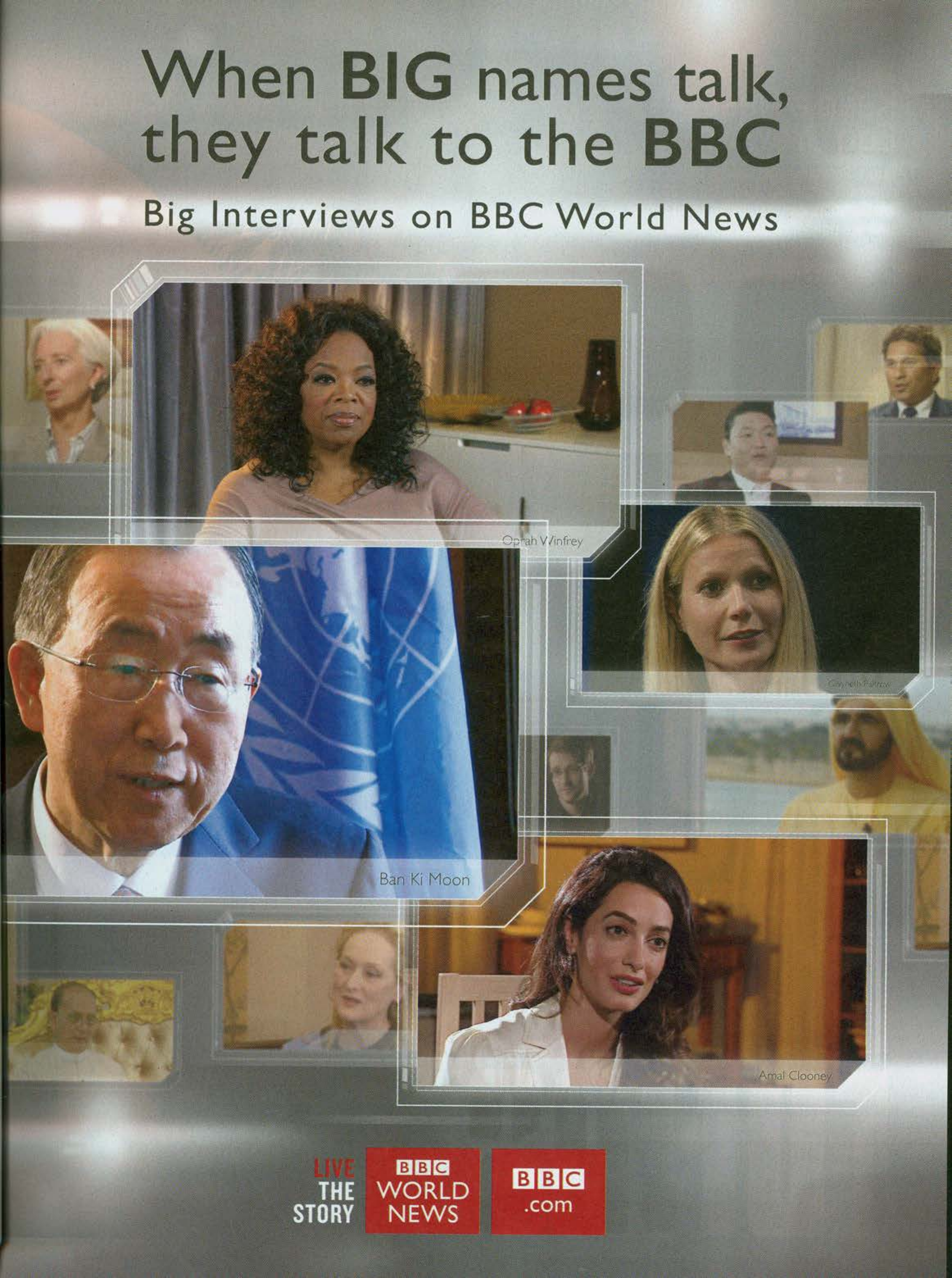
This is very unusual by historical standards. It's an upside-down world. People are buying bonds for capital gains, and they're buying stocks for income. Interest-rate risk means that this could revert pretty quickly.

***HEIMER:* Ann, how about you?**

WINBLAD: We've talked a lot today about how innovation and technology, here in the U.S. and globally, is really a driver for lifting many companies that we've thought of as "old economy," to suddenly leaning into a "new economy." That's a continuing opportunity.

***HEIMER:* Thanks, everyone.**

> AT THE END OF THE DAY, EMERGING MARKETS ARE GOING TO BE THE PRIMARY SOURCE OF GLOBAL GROWTH."
>
> **Krishna Memani**
> OppenheimerFunds


When BIG names talk, they talk to the BBC
Big Interviews on BBC World News
Oprah Winfrey
Ban Ki Moon
Amal Clooney
LIVE THE STORY
BBC WORLD NEWS
BBC .com

Stocks to Keep a Nest Egg Growing

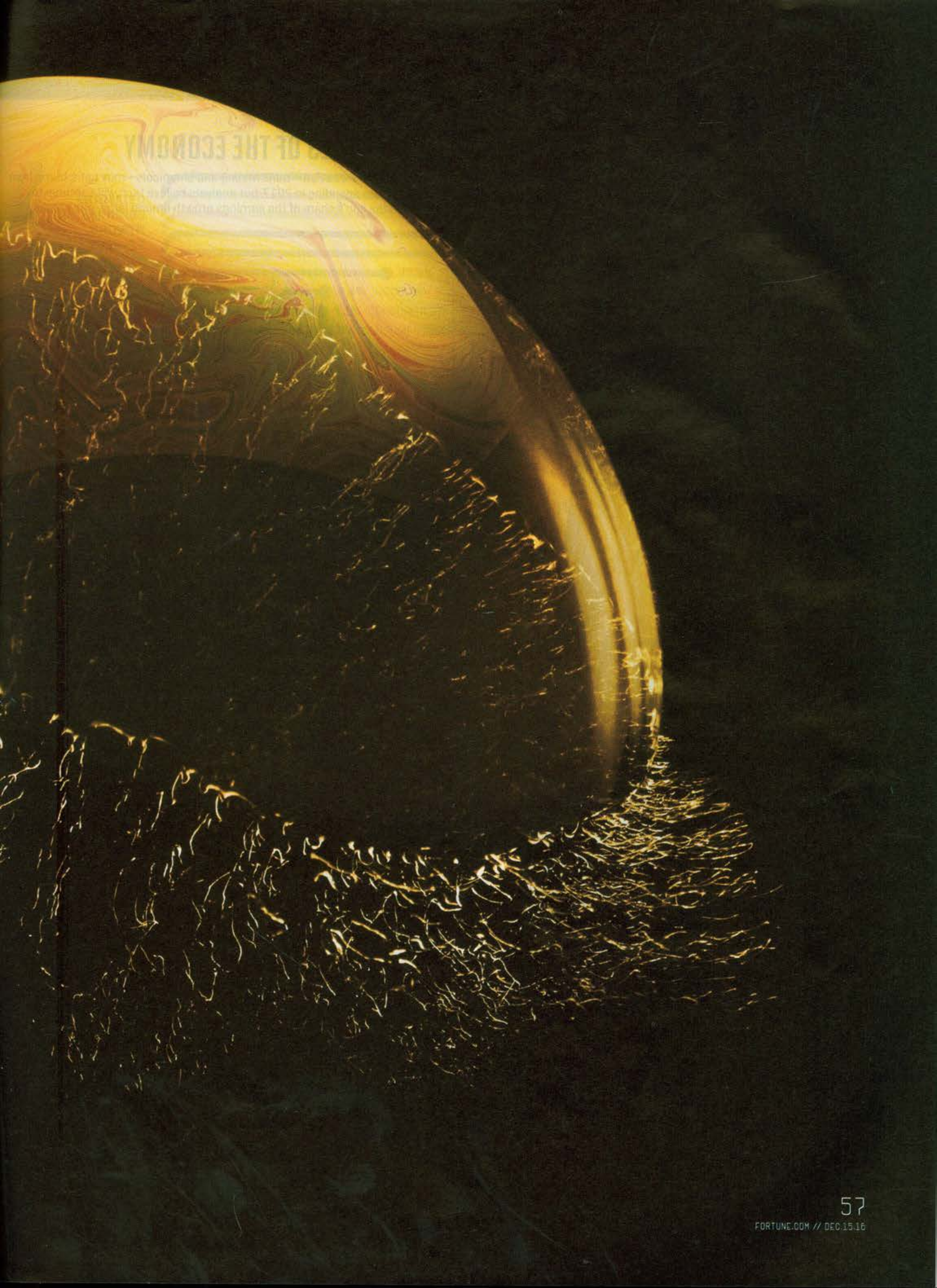
Unpredictability may be the only constant in the stock market in 2017. We found 21 companies and two funds that are poised to reward investors no matter how wacky the headlines get.

BY JEN WIECZNER

PHOTOGRAPH BY **TERU ONISHI**

INVESTOR'S GUIDE 2017

STOCKS AND FUNDS



THE ENGINES OF THE ECONOMY

THE MATERIALS SECTOR—think mining and chemicals—may get a bump from infrastructure spending in 2017, but analysts believe tech will continue to generate the lion's share of the earnings growth among large-cap stocks.

ALMOST NOTHING went the way it was supposed to in 2016. And yet, though many investors were wrong about the U.K.'s Brexit vote and the American presidential election, few ended up disappointed by their portfolios. Just before Thanksgiving, all four major U.S. stock market indexes closed at record highs—the first time that's happened since 1999. If the year taught investors anything, it's not to bet on predictions. As John Toohey, head of equities at USAA Investments, says of the unexpected outcomes, "You sort of question, 'Is the market right, are the polls right, on anything?'"

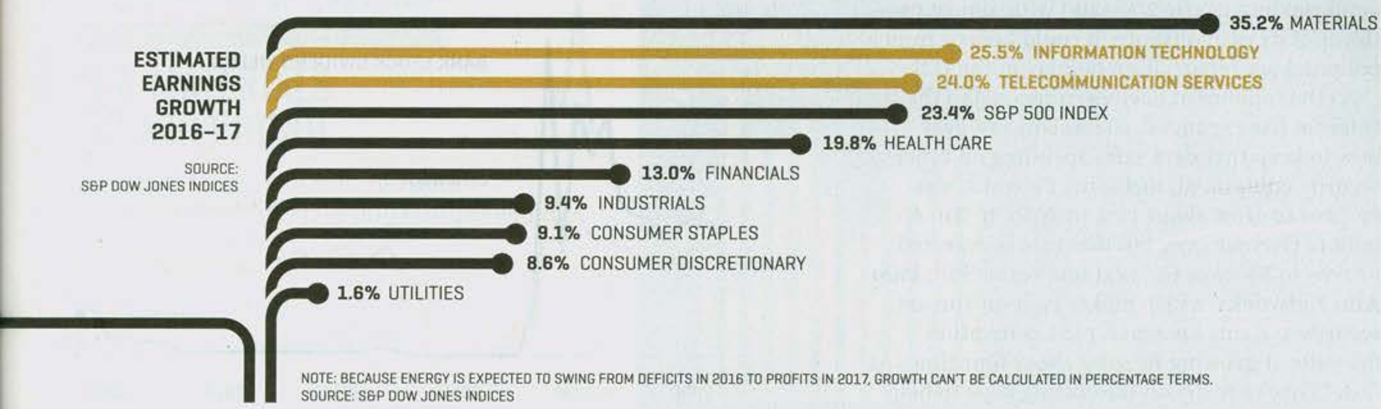
One prediction, at least, seems safe: Post-election euphoria won't mean stocks are without risk. With an aging bull market in the U.S. nearing the end of its seventh year at press time, it's difficult to find safety in cheap stocks; even formerly stodgy dividend payers now trade at dangerously expensive valuations. "You have to have a radically maverick portfolio to have a shot at a classic target of 5% real [annual] returns," says Research Affiliates CEO Rob Arnott.

While top portfolio managers see a lot of promise in 2017, they're pinning their most bullish hopes on mysteries that only time will unravel. Will President Trump roll back regulations, from Dodd-Frank to the Affordable Care Act? Will France or Italy take Britain's lead and exit the European Union? Will oil continue its rally? Most important, will the U.S. economy finally get the jump-start it has been waiting for since the financial crisis? As ClearBridge Investments managing director Margaret Vitrano says, "I hate talking politics, but you kind of have to now as you're thinking about 2017."

With that in mind, *Fortune* has canvassed the industry's top stock pickers to find the companies they're betting will rise even if nothing goes as expected in 2017. Some are familiar, some you won't have heard of, but they've all got potential for impressive growth, no matter what shocks the new year might bring.

ESTIMATED EARNINGS GROWTH 2016–17

SOURCE: S&P DOW JONES INDICES



NOTE: BECAUSE ENERGY IS EXPECTED TO SWING FROM DEFICITS IN 2016 TO PROFITS IN 2017, GROWTH CAN'T BE CALCULATED IN PERCENTAGE TERMS.
SOURCE: S&P DOW JONES INDICES

TECH

WORKHORSE STOCKS GET TO SHINE

Relatively unglamorous companies in the semiconductor and cybersecurity sectors are poised for a great year.

THE WEEKS BEFORE THANKSGIVING brought a cornucopia of good news to tech investor Paul Wick. Five companies he owned in the Columbia Seligman Communications and Information Fund were acquired in rapid succession as an M&A wave swept the semiconductor industry—a slice of the technology sector to which Wick has dedicated nearly half of his $4.4 billion fund. Meanwhile, shares in the Silicon Valley–based portfolio manager's biggest holding, LAM Research, hit an all-time high. "Yet there's still considerable upside," says Wick. "We're more bullish about the semiconductor industry than we are about software or the Internet sector."

Technology, though one of the most profitable and fastest-growing S&P 500 sectors, also tends to be relatively expensive. And investors are jittery about how President Trump's policies might affect some of the largest players: After Facebook, Amazon, Netflix, and Google sold off in the wake of the election, DoubleLine CEO Jeffrey Gundlach advised investors "to stay away from these things in a big way." But investors like Wick are finding exceptions to that sentiment—particularly in less glamorous but no less important corners of the industry.

PICKS

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LAM RESEARCH (LRCX, $108)

PALO ALTO NETWORKS (PANW, $142)

CHECK POINT SOFTWARE TECHNOLOGIES (CHKP, $83)

VAIL RESORTS (MTN, $166)

PRICES AS OF 11/25/16

Though it might seem imprudent to recommend a stock that's already risen 35% this year, **LAM Research** still trades at 13 times its 2017 estimated earnings. That means the stock trades at a 21% discount to the S&P 500 and is 18% cheaper than the technology sector. (For what it's worth, LAM's run pales beside that of the S&P 500's best-performing stock in the first 11 months of 2016, the chipmaker Nvidia, whose stock has almost tripled.)

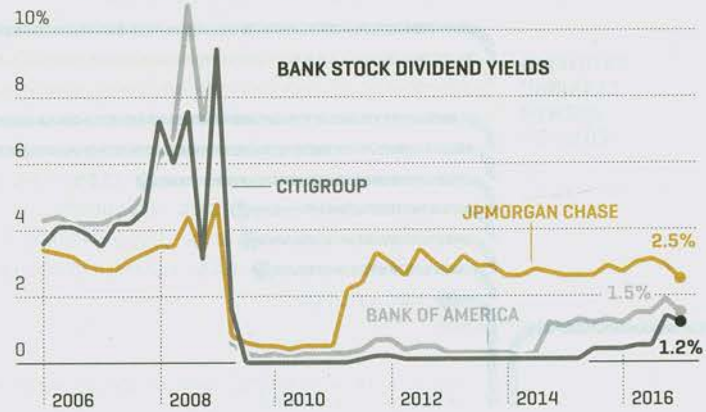
LAM doesn't make the chips themselves, but rather equipment that companies like Samsung (one of its largest customers) use to put "flash" memory into semiconductors that are used in everything from iPhones to fitness trackers to Tesla cars. Flash memory—so called because it processes data faster and with less heat than traditional hard disk drives—has become essential in enabling companies like Apple to make its MacBooks more powerful and smaller at the same time, while allowing companies like Amazon and Spotify to retrieve music from their massive cloud libraries instantaneously.

Historically, LAM's stock has traded at a discount because its earnings "tend to have a lot of wiggle," fluctuating depending on electronics' product cycles, says USAA's Toohey, who is also a fan of the stock. But for the past three years LAM has grown consistently, increasing sales at a rate of 18% annually and averaging earnings growth of 56%. Wick expects that robust growth to continue in 2017, as the accelerating pace of innovation keeps semiconductor foundries buzzing: "There is no such thing as a semiconductor cycle anymore," he says. Plus, LAM pays a dividend yielding nearly 2%—and with almost two-thirds of its cash offshore, it could benefit from a potential tax-repatriation holiday in the U.S.

As the number of devices connected to the Internet has expanded, so has concern over how to keep that data safe. Spending on cyber-security equipment, including firewalls, was on pace to grow about 13% in 2016, to $10.6 billion, Gartner says, but that rate is expected to slow to 8% over the next few years. Still, **Palo Alto Networks**, which makes state-of-the-art security systems known as next-generation firewalls, is growing its sales about four times as fast. "They're really on the cutting edge to help people protect their infrastructure," says Vitrano, portfolio manager of the $4 billion ClearBridge Large Cap Growth Fund. Although ups and downs in businesses' cybersecurity spending can mean volatility for Palo Alto's earnings and its stock, the company expects to grow revenue 31% next fiscal year, making its 2017 estimated P/E of 49 look fairly reasonable.

Elsewhere in cybersecurity, Wick likes **Check Point Software Technologies,** a cheaper option (a P/E of 17). Founded in Israel in the pre-dotcom-boom 1990s, Check Point has proved to be "much more shareholder-friendly" than some of its younger peers and social media companies, Wick says; the company has bought back stock from shareholders for 13 straight years through 2016.

Other investors are rethinking what it means to be a tech stock—finding opportunities in other industries where companies are using technology to make over their business models. Henry Ellenbogen, who manages the $16.3 billion T. Rowe Price New Horizons Fund, points to **Vail Resorts.** Once just an elite place to ski in Colorado, Vail has adopted a subscription model for lift tickets the way Salesforce has done for software and startup ClassPass has done for yoga and spinning classes: Think of it as a season's pass with unlimited access to 13 different mountains in six states, Canada, and Australia. The company offers an app and harnesses its data to make chairlift lines more efficient—one reliable way to keep customers coming back. And Vail has been regularly acquiring new property and tucking it into its network, giving the company a scale that has helped Vail generate returns on capital unprecedented for its industry. The stock trades at a 2017 P/E ratio of 31, but Ellenbogen expects Vail to grow earnings organically 10% to 13% next year.



RISING INTEREST RATES

UNLOCKING THE VAULT FOR SHAREHOLDERS

Most banks' profit margins should rise with interest rates, but some stocks will get a bigger jolt than others.

CALL IT the Janet Yellen head fake. When the Federal Reserve hiked interest rates in December 2015 for the first time in nearly a decade, Wall Street expected it to be the beginning of a trend. But since then the Fed has done little beyond generate a strong sense of déjà vu: At press time, Fed policymakers were strongly hinting they would implement another December rate hike. Still, while long-term bond interest rates have recently drifted up—with investors expecting higher inflation and federal deficit expansion under a Trump administration—rates remain at historic lows. "We're really just back to where long-term interest rates were at the beginning of this year," says Ed Perks, CIO of Franklin Equity Group.

The companies with the most skin in the game are banks, whose profit margins generally improve as rates rise—and whose stocks have recently soared in anticipation. Perks singles out **Bank of America** as "a clear beneficiary." It will collect at least twice as much from rising rates as its peers largely because it has the biggest stockpile of deposits—nearly $450 billion—on which it doesn't pay out interest [e.g., checking accounts]. If the Fed hikes rates by one percentage point in 2017, Bank of America expects to collect an additional $5.3 billion.

In recent years investors have punished **Citigroup,** assuming that heavy regulation will doom it to lower, utility-like returns—but without giving the company credit for being less risky, says Oakmark's Bill Nygren. Case in point: Citi immediately tripled its dividend after passing the Fed's latest stress test. "If ... investors start to value Citigroup like it's an electric utility, it should trade at a much higher stock price," Nygren says.

PICKS

BANK OF AMERICA (BAC, $21)

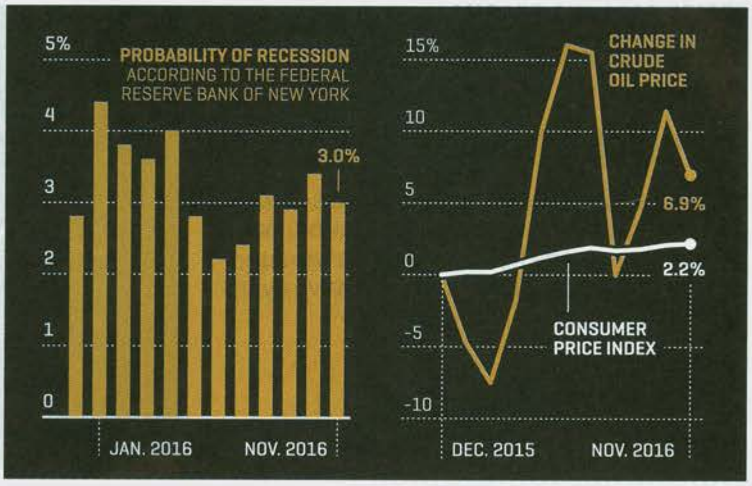
CITIGROUP (C, $57)

PRICES AS OF 11/25/16

METALS, MINING, OIL AND ENERGY

RAW MATERIALS FOR A REBOUND

Whether or not an economic boom occurs, some oil and mining companies are poised to grow.



SOURCES: BLOOMBERG; U.S. BUREAU OF LABOR STATISTICS (AS OF THE END OF EACH MONTH)

WHEN JOHN ROTH thinks back on the oil market of two years ago, a certain calamitous image comes to mind: "I liken it to pushing a freight train off the top of a hill," says Roth, manager of the $3 billion Fidelity New Millennium Fund. "After a while it starts to really gain momentum, and it takes a lot of money and effort to go the other way."

Beginning in the summer of 2014, of course, crude prices collapsed much faster than energy producers could hit the brakes on production; some companies kept drilling even as the oil-supply glut worsened, hoping to get the most out of the ground before prices fell further. And today, even though oil has rebounded well off its early 2016 lows to $45 a barrel, energy companies' balance sheets are still suffering from the hangover. Profits have fallen to such paltry levels that the energy sector, even amid its bear market, is the most expensive in the S&P 500, trading at an average 131 times earnings. Yet some experts say that's a buying signal. "The short of it is, you've got the cycle moving in the right direction," says Roth, who is overweight in energy. The investor is also encouraged by signs that OPEC and Saudi Arabia are finally considering a freeze that could prop up oil prices. Pipeline operator **Williams,** one of Roth's top holdings, could benefit from a resulting revival of U.S. exploration. And a Trump administration is more likely than its predecessor to green-light pipeline expansion projects that Williams could build, Roth says.

If oil prices flatten out or even fall, that won't hurt **Suncor,** which can stay profitable as long as oil stays above $24 a barrel, says Ben Kirby, comanager of the $15.8 billion Thornburg Investment Income Builder Fund. Calgary-based Suncor (better known at the pump as Sunoco) works predominantly in Canada's oil sands, a unique energy reserve where oil is essentially mined like metal and diamonds (with dump trucks and shovels instead of oil rigs). That costs a lot less than most U.S. energy production. "So every year this company spits out a lot more free cash flow than your typical oil major," Kirby says. Both Williams and Suncor pay dividend yields of nearly 3%.

After a five-year bear market in most metal commodities, miners finally had a bull run in 2016, with some stocks' prices more than doubling off their lows. After the U.S. elections, prices for copper and iron ore, used in building and construction projects, surged amid hopes for increased infrastructure spending. Individual mining stocks tend to be fairly volatile, but investors can get exposure to copper and steel producers with the **SPDR S&P Metals and Mining ETF.**

Gold and gold-mining stocks, whose prices rise amid political uncertainty, advanced in the run-up to the election, then sank again. If the U.S. economy takes off the way stock market investors hope, that won't be good for gold. But the bearishly inclined may want to take small positions in a gold miner or two. Joe Foster, portfolio manager of the VanEck International Investors Gold Fund, likes **Newmont Mining,** which has cut its costs by about a third in recent years, and **B2Gold,** which bought other companies at bargain prices during the bear market and now is reaping the benefits. Those companies should provide safety in one scenario that Foster foresees: "I think Trump will preside over our next recession." (For an explanation of why that's not so far-fetched, see "Trump" in this issue.)

PICKS

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WILLIAMS COS. (WMB, $30)

SUNCOR ENERGY (SU, $31)

SPDR S&P METALS AND MINING (XME, $32)

NEWMONT MINING (NEM, $32)

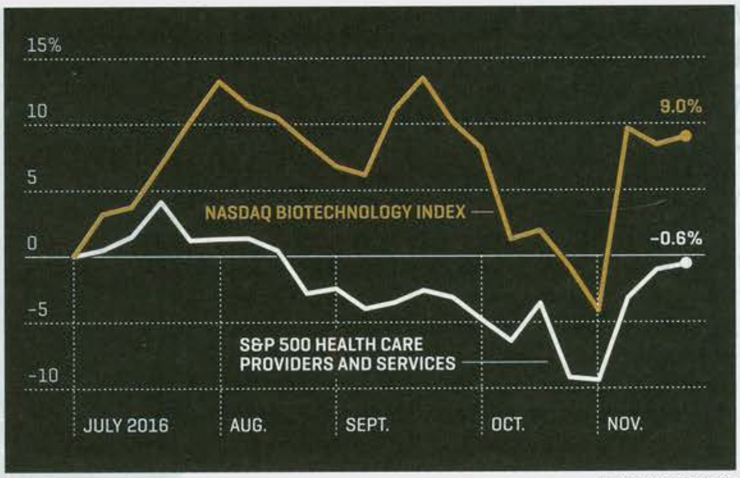
B2GOLD (BTG, $2)

PRICES AS OF 11/25/16

HEALTH CARE AND PHARMA

RIDING OUT REGULATORY REVOLUTION

Investors punished some health care stocks and rewarded others after the election. But in the long run, the best companies will survive an Obamacare overhaul and thrive even if they can't raise prices.



SOURCE: BLOOMBERG

TO UNDERSTAND the uncertainty over what Trump's presidency will mean for health care, look no further than the stock market: The day after the election the Nasdaq Biotechnology Index surged almost 9%, diverging from hospital operators like Tenet Healthcare, whose shares plunged 25%. The market, evidently, had taken Trump's campaign promises—or lack thereof—at close to face value. His No. 1 health care policy objective, to "repeal and replace" the Affordable Care Act reforms better known as Obamacare, will hurt hospitals if it comes to pass. And while Hillary Clinton had promised to rein in drug price hikes, pharma investors interpreted Trump's relative silence on the issue as an all clear. "The Trump win is a tremendous boost to the sector on a couple of parameters: less regulation and more free-market principles," says Michael Gregory, head of health care credit and equity for Highland Capital Management.

At the same time, some investors caution that the short-term pharma-stock resurgence won't last in an era when members of Congress on both sides of the aisle have taken executives to task over exorbitant price increases. "I just don't think that President-elect Trump is going to look at that much differently. I don't think he's a big fan of price gougers either," says John Roth of Fidelity New Millennium. Still, the health care sector, which has historically traded at a premium to the S&P 500, remains 14% cheaper than that index. ClearBridge's Vitrano sees value as well as reassurance in **Celgene,** which has been deriving its growth mostly from increases in patients' taking its blockbuster drugs, such as Revlimid, a multiple myeloma treatment, rather than price increases on those drugs. Celgene has a pipeline of 24 disease treatments in advanced clinical trials, and Vitrano forecasts it can grow its earnings at nearly 20% annually for the next five years, without price hikes that could draw regulatory backlash. Celgene could also benefit if the Trump administration offers a tax break for bringing home its overseas cash, which accounts for more than 70% of its total hoard.

With the future of Obamacare a wild card, investors have largely dumped companies that could lose customers if Americans are no longer required to have health insurance. The Affordable Care Act allowed an estimated 20 million newly covered patients to visit hospitals; without them, many hospital beds may now go empty more often, says Mary Pierson, who comanages $4.9 billion for Fairpointe Capital. But the selloff also hit companies that sell equipment to hospitals, unfairly punishing companies such as **Varian Medical Systems,** which has an attractive estimated P/E of 18 for fiscal 2017. A maker of advanced radiotherapy devices for cancer treatment, Varian gets more than 50% of its revenues—and much of its growth—outside the U.S., where it would be "unaffected by changes to Obamacare," Pierson notes.

For health insurers, the ACA was more a drag than a benefit: "It's not a bad thing for the insurance companies if these health exchanges go away," Gregory notes. Many portfolio managers favor **UnitedHealth Group,** which not only had largely pulled out of the state insurance marketplaces but also is the only major carrier not tied up in a pending merger and accompanying antitrust litigation—yet another potential source of uncertainty under a new U.S. administration.

PICKS

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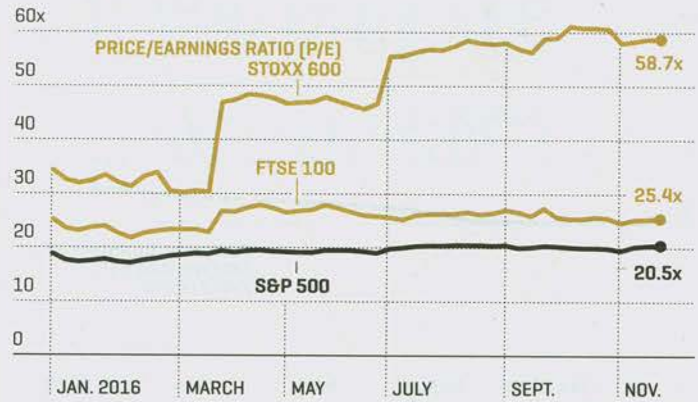
CELGENE (CELG, $121)

VARIAN MEDICAL SYSTEMS (VAR, $92)

UNITEDHEALTH GROUP (UNH, $153)

PRICES AS OF 11/25/16



SOURCE: BLOOMBERG

FOREIGN STOCKS AFTER BREXIT

SURVIVORS WITH GLOBAL REACH

Multinationals in Europe and Asia should have staying power even if the European Union keeps imploding.

AFTER THE U.K. voted in June to leave the EU, global stocks went into a tailspin—and almost immediately shrugged it off. Even blue-chip U.K. stocks traded at a premium [see chart above], as investors flocked to Britain-based multinationals, which got an added foreign-exchange boost thanks to the weakened pound. That serves as a lesson for investors preparing for further European shocks, such as the increasingly possible "Frexit." It's why Jim Ayer has put nearly 20% of his Oppenheimer International Value Fund in France: "The economy is in shambles," he says. "But the stock market there is made up of tremendous multinational companies."

His top choice is **Pernod Ricard,** one of the world's largest makers and distributors of liquor, whose whiskey brands, including Jameson, are enjoying a global renaissance. Though they're not cheap, Jamie Doyle, manager of the $6 billion Causeway International Value Fund, likes U.K.-based multinationals such as **Royal Dutch Shell** and drugmaker **GlaxoSmithKline.** With little of their revenue tied to Britain, they should fare well even if the Brexit process drives the U.K. into recession. Says Doyle: "These are perceived flights to safety."

Another way to insulate a portfolio from Europe: Buy Japan, "the single biggest beneficiary of a strong dollar," Ayer says. Ayer favors **Sony,** whose U.S.-listed stock offers American investors exposure to its foreign-exchange tailwind without having to worry about hedging the yen [or the future of the Trans-Pacific Partnership trade deal].

PICKS
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PERNOD RICARD (EPA: RI, $105)

ROYAL DUTCH SHELL (RDS.A, $50)

GLAXOSMITHKLINE (GSK, $39)

SONY (SNE, $30)

PRICES AS OF 11/25/16

EMERGING MARKETS

FAST-GROWING ECONOMIES, FOR CHEAP

Markets have overreacted to the danger that emerging countries face. That's an opportunity for you.

BY PAUL J. LIM AND CAROLYN BIGDA

AT FIRST GLANCE, Donald Trump's election would seem to mar the case for emerging-market stocks. Rising rates and the strengthening dollar in the wake of Trump's victory threaten to drive capital out of the developing world. And if Trump tears up trade deals, that would directly hurt export-reliant economies.

Yet Trump fears also "create an opportunity for emerging-market stocks in 2017," says Scott Klimo, chief investment officer at Saturna Capital. In the immediate aftermath of the election, emerging-market equities sank 5%. As of late November, the P/E ratio for these stocks—based on five years of averaged earnings—was 30% below their long-term average. As for Trump, on trade his "bark is probably a lot worse than his bite," says David Kelly, chief global strategist for J.P. Morgan Funds. And if the President-elect can stimulate faster economic growth in the U.S. through a combination of tax cuts and infrastructure spending, that would be a net positive for emerging markets that export to the West.

Another tailwind: "The big downward pressure on commodity prices is over," says Thomas Clarke, comanager of the William Blair Macro Allocation Fund. The vast majority of forecasters believe oil, which rebounded from $26 in late January to $47 at press time, will rise to between $50 and $59 in 2017, according to the Blue Chip Economic Indicators survey. That's certainly good news for oil-producing economies such as Russia, which is expected to emerge from recession next year. And what's good news for Russia

PICKS

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SBERBANK OF RUSSIA (MCX:SBER, $2)

UNITED OVERSEAS BANK (UOVEY, $28)

HARDING LOEVNER FRONTIER EMERGING MARKETS FUND (HLMOX, $7)

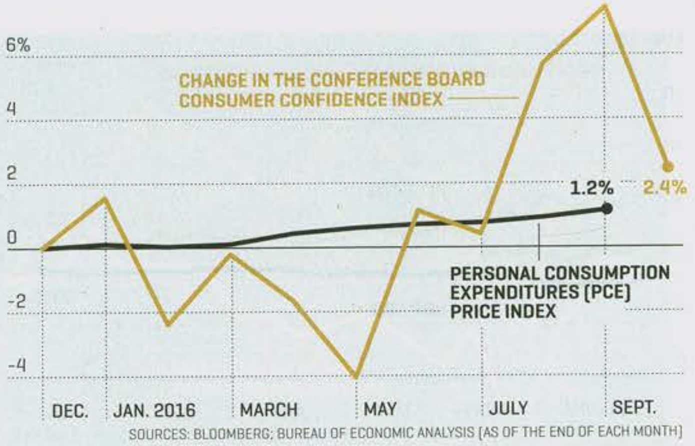
PRICES AS OF 11/26/16

tends to be good news for **Sberbank of Russia.** The country's largest commercial bank "has almost 40% of Russia's credit card balances, 50% of mortgages, and makes a third of the country's corporate loans," says Jonas Krumplys, manager of the Ivy Emerging Markets Equity Fund. In other words, it is literally too big to fail. It's also probably too politically connected to fail, as the company is majority owned by Central Bank of Russia. Meanwhile, the stock is cheap, trading at just 6.6 times its 2017 projected earnings.

Falling oil prices had also hurt **United Overseas Bank** in recent years. Loan defaults in the oil and gas sector have weighed on the stock of this Singapore bank, which is down 32% since 2014. But Thomas Shrager, a comanager of the Tweedy, Browne Global Value Fund, says concerns about the impact of potential defaults are overdone. UOB has an unusually strong balance sheet and is growing loans by about 5% a year. And while it is a multinational, its focus is really in Southeast Asia, where it is the third-largest bank. "The main reason we were interested in the bank is that Asia will continue growing faster than the Western world," Shrager says.

For a fund that focuses on faster-growing parts of the emerging world, there's **Harding Loevner Frontier Emerging Markets Fund,** which invests in relatively small, fast-growing economies such as the Philippines and Colombia. The fund's managers favor undervalued growth companies with healthy balance sheets, with an emphasis on companies that stand to benefit from the burgeoning middle class in developing economies. The fund's average holding trades at 12.4 times projected profits—a 10% discount to its category peers.

Paul J. Lim is an assistant managing editor at MONEY, and Carolyn Bigda is a MONEY contributing writer.



SOURCES: BLOOMBERG; BUREAU OF ECONOMIC ANALYSIS (AS OF THE END OF EACH MONTH)

A NEW SPENDING BOOM

EXUBERANCE AGAIN IN THE U.S.

These companies could benefit from confident consumers and federal stimulus spending.

EUROPE'S troubles certainly haven't helped **Fiat Chrysler;** the Italian carmaker gets the majority of its European sales from its beleaguered mother country. Of course, Fiat also makes Jeep. Fiat acquired Chrysler in 2014 after the American automaker emerged from bankruptcy. Today its truck and minivan sales in the U.S. are still growing, and with expectations that revived world economic growth is on the horizon, it is also poised to sell more cars and SUVs in emerging markets such as China, says Bill Nygren, manager of the $14.8 billion Oakmark Fund. Fiat's stock trades at just four times 2017 estimated earnings, a sign that investors are underestimating the nearly 30% earnings growth that Nygren expects next year.

Closer to home, a pickup in the U.S. economy, combined with renewed calls for greater infrastructure investment, bodes well for companies like **Pentair,** a water-equipment maker, says Todd Ahlsten, manager of the $14.4 billion Parnassus Core Equity Fund. After the emergency in Flint, Mich., highlighted the consequences of underinvestment in water infrastructure, Congress is moving to fund upgrades for the nation's pipes. "We think there's going to be a long-term supercycle of water investment that supersedes any economic cycle," Ahlsten says. That may not boost revenue next year at Pentair, which focuses on filtering and pumping water for residential and industrial customers. But Ahlsten expects Pentair to grow earnings 15% in 2017, thanks to aggressive cost cutting. Beyond that, he thinks Pentair could achieve earnings growth of as much as 10% annually. And if Trump signs a big-league infrastructure spending package? "That would be an additional bonus."

PICKS

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FIAT CHRYSLER AUTOMOBILES (FCAU, $8)

PENTAIR (PNR, $58)

PRICES AS OF 11/26/16

Why Colleges Are Getting a C in Investing

After Yale's endowment fund soared, universities across America eagerly tried to copy its esoteric investment model. Now, as the copycats struggle, it may be time for a change in tactics.

BY ROGER LOWENSTEIN

PHOTOGRAPH BY **TOM SCHIERLITZ**

INVESTOR'S GUIDE 2017

COLLEGE ENDOWMENTS

A

A WALL STREET bond researcher named David Swensen took over the endowment at Yale University in 1985. The portfolio, then a little over $1 billion, was 80% invested in U.S. stocks and bonds, exactly in line with the typical college endowment.

Swensen completely remade it. Harnessing a rare investing talent, but also adapting it to the efficient-markets doctrine that had become an article of faith in academia, Swensen redeployed close to 90% of Yale's fund into a diverse mix of assets stretching across the investment universe: venture capital, leveraged buyouts, hedge funds, foreign equities, real estate, natural resources such as timber. The result was a revolution in the quiet but competitive world of university endowments. Over the three decades through June 2015, Swensen's portfolio grew at an annual pace of 13.9%, outpacing those of his peers and all the relevant benchmarks.

His success enabled the endowment to increase its support of the university at a rate far above inflation; last year it contributed a third of Yale's budget, just over $1 billion. The outsize performance, moreover, reassured alumni that their gifts would be preserved, persuading many to open their checkbooks. Today the endowment stands at $25.4 billion.

Not surprisingly, other schools rushed to adopt Swensen's approach—now known as the "endowment model." Today more than half (52%) of endowment assets are invested in so-called alternatives (everything from private equity to real estate) while only 16% are deployed in what was formerly the bedrock investment class, U.S. listed stocks, according to the 2015 National Association of College and University Business Officers (Nacubo)/Commonfund report.

Swensen, for his part, still has the magic. Over the past two decades Yale's endowment has outperformed the average school's by a whopping five percentage points. Over 10 years, Yale earned 8.1%—three points better than the average.

But elsewhere in academia, people are beginning to wonder whether that remarkable record has less to do with Swensen's model than with the manager himself. That's because few schools have been able to pull off what Yale's investing wizard has accomplished. Through 2016, the average university endowment has had a poorer record—over one year, three years, five years, *and* 10 years—than the average public pension fund, according to the Wilshire Trust Universe Comparison Service. Even over 20 years, endowments and pensions are in a virtual dead heat (the latter trailed by 20/100th of a percentage point), meaning that over a generation, academia's vaunted edge has vanished. For that matter, colleges also trail a passive stock and bond index, which requires no management talent at all. Through 2015, according to data from Harvard and Nacubo, which tracks 812 schools, the average endowment earned 6.3% a year over the previous 10 years, compared with 6.8% for a 60%/40% blend of U.S. stocks and bonds.

Even Yale's ancient Ivy League rival has struggled of late. Under the tutelage of Jack Meyer, its endowment chief from 1990 to 2005, Harvard's returns sizzled. But in the past decade, the $35.7 billion endowment fund has returned only 5.7% a year, significantly underperforming the passive 60%/40% blend it uses as a yardstick. Harvard Management Co., which runs the endowment, has been rocked by turmoil. It recently hired a new CEO—its fourth in a decade—and talented investors have departed amid embarrassing publicity over disappointing performance and eye-catchingly generous bonuses. (Harvard Management declined to comment for this story. Recently it revamped its compensation scheme to better align bonuses to performance.)

While Harvard's challenges are, to some degree, sui generis, they have reinforced growing doubts over an investing style that has all but taken over America's ivory towers. And coincidentally, one of the earliest warnings was signaled by Harvard itself. As far back as 2010, Jane Mendillo, who took over Harvard's endowment in the dark days of 2008 and managed it through the end of 2014, wondered aloud in the fund's annual report, "Has the 'endowment model' run its course?"—before responding with a self-assurance not unknown along the Charles River: "Our answer to that question is 'No.'"

Today Harvard is blushing crimson. Many endowment chiefs defend their performance, saying it's unfair to grade them against U.S. benchmarks because U.S. markets have been top performers since the financial crisis. They also contend that central bankers have distorted equity returns by lowering interest rates. However, if low rates have benefited stock prices, they should equally have benefited the private equity and venture capital assets owned by colleges. So why isn't the endowment model performing?

THERE SEEM TO BE three parts to that answer—all beginning with the letter "C," which is a fitting grade for the investment performance of universities today.

The first is unnecessary complexity. It isn't just that schools are chasing ever more elaborate portfolios; it's that they're doing so with an ever more complex roster of overseers. The average endowment has more than 20 outside managers, yet fewer than two full-time staffers to track them (many rely on consultants). The biggest endowments, those with more than $1 billion in assets, employ roughly 75 managers each just in "alternative" strategies. "Portfolios have gotten so complex, I worry about it," says the head of a high-performing New England college. "It's not clear that everybody knows what they own."

Second is competition: It has whittled away the edge, even for the bigger and elite schools that have typically racked up the best results. Capital has poured into private equity funds, raising deal prices and reducing returns, which now mirror those of public markets. Hedge funds are further along the curve toward mediocrity, a result of high fees that attracted a tsunami of hungry capital, often managed by ordinary talent. "You could probably replace the term 'alternative' with 'high-fee,'" says a cynical trustee on the investment committee of a prestigious New England school.

And the third, and perhaps most important, is conceptual. The endowment model—which emphasizes broad diversification—emerged from the dogma of efficient markets: the notion that, generally speaking, markets are good at internalizing available information, and therefore they generally price shares appropriately. That makes it hard to beat the market consistently over any long period. Nonetheless, many endowment managers try to outperform anyway.

Not everyone considers this a conceptual muddling. Andrew Golden, a Swensen disciple who manages the endowment at Princeton, says it's not contradictory to respect the market as *mostly* efficient while trying to beat it. To the extent there are at least a few inefficiencies scattered about, presumably somebody can make money off of them.

And this is where the rub on that third "C" comes in: Swensen's idea has always been that he could outperform by exploiting an edge. "If you don't have an edge," says Bruce Zimmerman, who just stepped down as head of the mammoth University of Texas endowment, "you ought to be simple and passive."

Zimmerman contends that the biggest advantage of universities is "perpetuity"—endowments are investing for so far in the future that they're not concerned with near-term volatility. Such thinking has enabled Yale's endowment and others to take the plunge into private markets and venture capital and to invest in tangible assets—which, because of the lack of frequent trading and broad public vetting, are likely to be less efficiently priced than, say, equities on the Nasdaq. Furthermore, managers at Yale—which, like other elite universities, benefits from a cross-pollinating alumni network of money managers, entrepreneurs, and venture capitalists—have had the ability to cherry-pick the best of such investments. In Yale's case, that alumni network has helped seal early investments in Oracle, Dell, Amazon, and Google. Yale's approach in that regard is perhaps better labeled the "relationship model" than the endowment model—and the former is much harder to copy.

Larger schools also have the resources to scrutinize investments around the world (Golden, when *Fortune* caught up with him, had just returned from a tour of Asia). And some have advantages that are literally irreplaceable—the University of Texas reaps the bounty of a gushing, 2-million-acre field of oil and gas. Then there is the edge that flows from research. Mendillo, Harvard's former endowment chief, discovered that pulp companies were eager to get timber assets off their books. Realizing she was dealing with motivated sellers,

The Old College Try

An investment style hatched at Yale has created pitfalls for other schools, including rival Harvard.

David Swensen
His forays into alternative assets at Yale popularized what became known as the "endowment model." But many schools that tried to implement the same model found they couldn't duplicate Swensen's results.

Nirmal Narvekar
Disappointing performance has led to high turnover at Harvard's endowment. In September, after 14 years heading Columbia's endowment, Narvekar became Harvard's fourth investment CEO in a decade.

she scooped up timber at an attractive price.

The problem for smaller or less connected funds that copy the strategies of the big endowments is that price inefficiencies last only a short while. By the time that copycats invest in a well-marketed "timber fund," the asset is likely to be fully priced.

In fact, even with their apparent edge, the relative outperformance of large endowments has been shrinking. Over the decade that ended in 2015, these endowments barely beat the passive stock and bond blend—edging out the latter by a mere four-tenths of a percentage point. (Nacubo has yet to update results for 2016.) Harvard is a case in point. Thanks to early investments in Baupost Group and Sequoia Capital, among others, it trumps a passive blend over 20 years, but underperforms over the past 10.

Recall that the advantage of big endowments is supposed to be that sense of perpetuity: a distant investing horizon that allows managers to snatch the best long-term opportunities and ignore short-term swings. But if you read through reports of various schools, it's hard to escape the conclusion that endowments are beset by short-termism. Although Harvard has been properly cautious with regard to introducing major changes to its asset allocation model, its managers repeatedly pledged to "tune" or "refine" or "reposition" portfolios; they fretted one year over the "unusual uncertainty in the outlook" and in another that the "landscape" was full of "uncertainty." (To paraphrase Warren Buffett, let me know when the future isn't uncertain.)

Zimmerman says it's unrealistic to expect universities to completely ignore short-term pressures. "The endowment may be forever," he tells *Fortune*, "but the people aren't. I'm not. The regents aren't." That said, it's now likely that many big endowments are now *so* über-diversified—with so many investment positions—that they fall under the spell of short-term thinking nevertheless. At some point, the more securities and investment categories one holds, the greater the temptation to realign weightings at every market twitch.

WHAT ENDOWMENTS have mostly abandoned is the old-fashioned, Graham-and-Dodd business of building a portfolio by picking attractively priced individual securities. Instead, they've adopted the academic conceit of building portfolios from the top down, assembling "risk factors" rather than stocks. Endowment investing has been reduced to a series of calculable tradeoffs—thus Harvard would tweak its portfolio in 2010 to add "unique low-beta opportunities" and now searches "computationally" for a portfolio "that maximizes our asset class specific return per unit of risk." If your head spins, it should. No one knows what a "unit of risk" is until after the fact. Even Harvard admitted that its risk assumptions were couched in "high uncertainty."

Other schools adopted a similarly slavish respect for formulas; small, smart Oberlin College targets future returns to the hundredth of a percentage point. (Endowments truly that prescient should go into political polling.) But setting ultraprecise targets carries a serious hazard: It increases performance pressure to the point where managers are constantly adjusting their portfolios—the kind of return-chasing behavior that's a surefire way to lose your edge. Nacubo, curiously, nourishes this short-term mind-set by publishing volatility and "Sharpe" ratios (a measure of risk-adjusted return). Even to track such ephemera is to encourage endowments to shrink their time horizons.

> "THE IDEA THAT ALTERNATIVE INVESTMENTS ARE AN 'ASSET CLASS' JUST DOESN'T MAKE SENSE."
>
> **Jesse Seegmiller**
> Chief investment officer, Southern Virginia University

One of the few schools to shun the Yale model, Southern Virginia University, has one of the best records anywhere. Jesse Seegmiller, the chief investment officer who oversees the school's tiny $1.1 million endowment, says simply, "We have a discipline and we stick to it." The discipline consists of bottom-up selection of a relative handful of stocks. It does not own private equity or hedge funds. "The idea that alternative investments are an 'asset class' just doesn't make sense," says Seegmiller. Timber is a commodity; hedge funds are a legal framework for investing in any of a number of asset classes. Private equity is simply equity; indeed, over the past decade the average private equity fund has merely kept pace with public equities. And hedge funds—which account for a fifth of the investments in endowment portfolios—have significantly underperformed the S&P in recent years as a result of their high fees and efforts to tamp volatility and avoid market correlation, ridiculous aims for schools supposedly investing for forever. (According to HFR, the average hedge fund gained 42% over the decade through June 2016, compared with 104% for the S&P.)

What's Southern Virginia's annualized return over the past decade, you ask? That would be 10.3%—little short of exceptional.

In truth, many academic institutions—small and large—would be best off investing by way of low-fee index funds, as Yale's Swensen has argued the average small investor should do. But then few people think of themselves as average, and few endowment managers do either. If only they knew. ■

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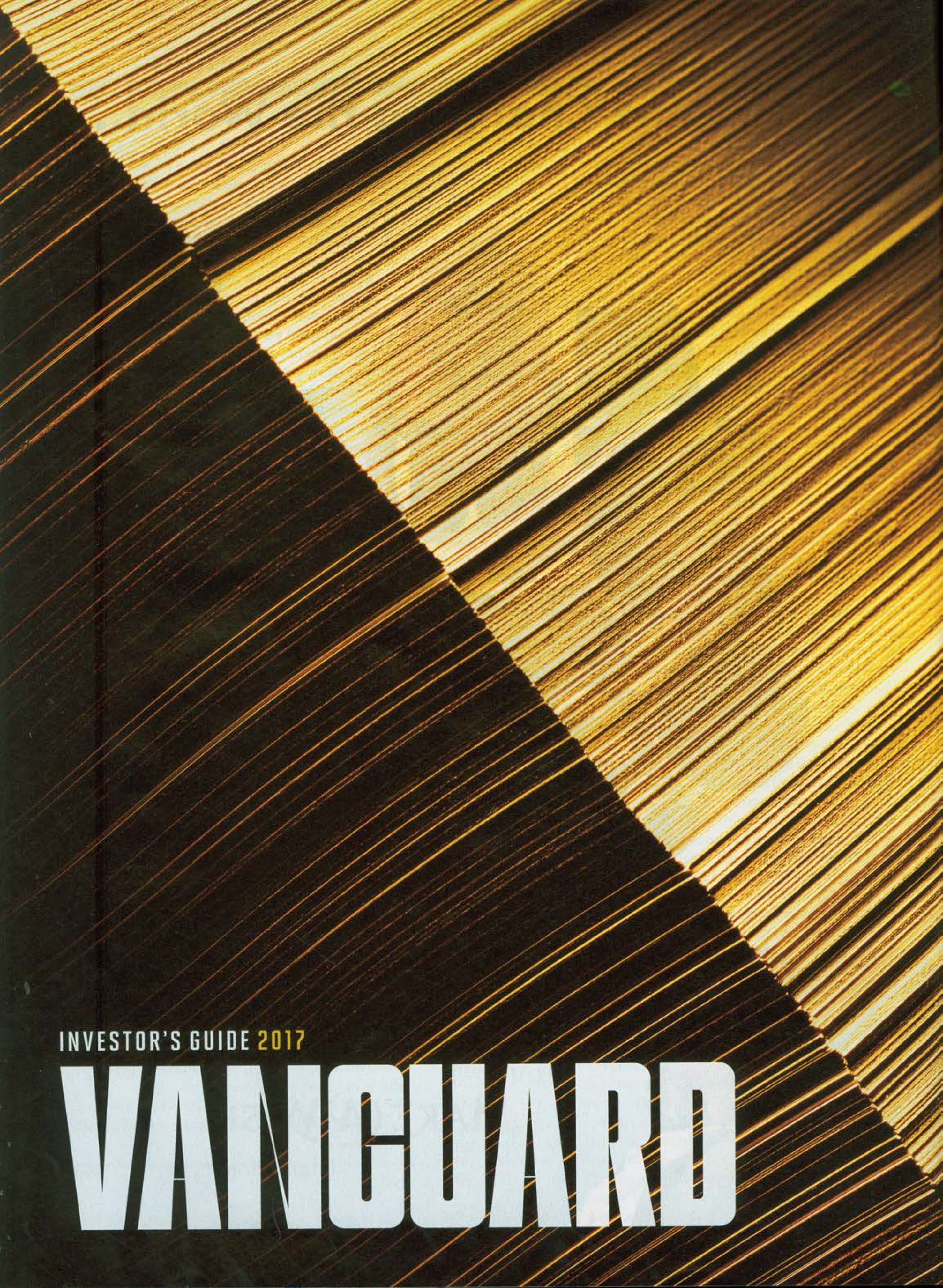

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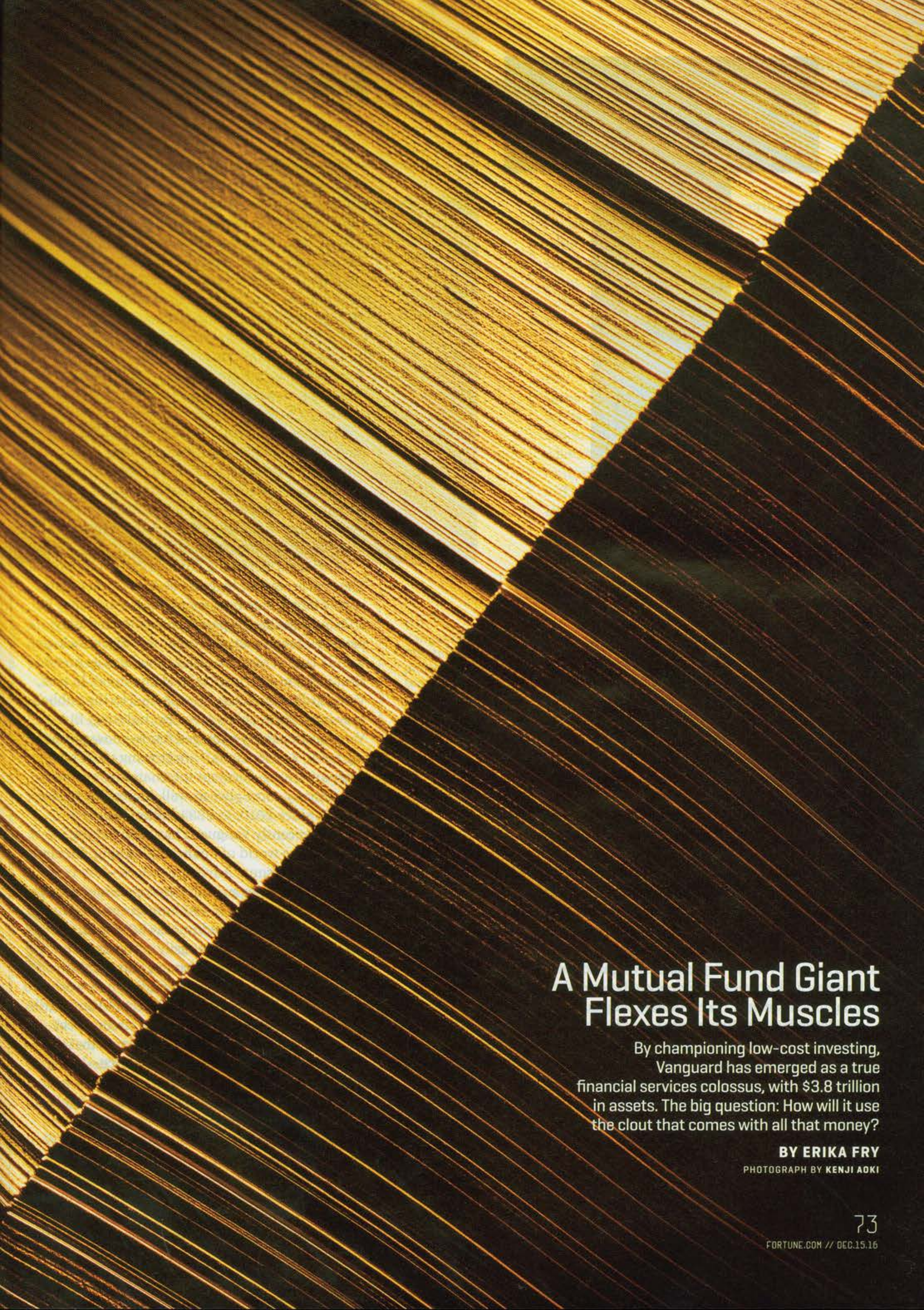
VANGUARD



A Mutual Fund Giant Flexes Its Muscles

By championing low-cost investing, Vanguard has emerged as a true financial services colossus, with $3.8 trillion in assets. The big question: How will it use the clout that comes with all that money?

BY ERIKA FRY

PHOTOGRAPH BY **KENJI AOKI**

THE QUESTION MADE him uncomfortable. And suddenly he was getting it from all directions. In the fall of 2010, Vanguard CEO Frederick William "Bill" McNabb III found himself fielding the same query over and over again: "What does it feel like to be No. 1?"

It was only natural that people should ask. That year Vanguard, the low-drama, low-cost index shop headquartered outside Philadelphia in Malvern, Pa., was in the process of sucking up some $80 billion in new assets—the most of any fund company for a second straight year. In September, Vanguard had surged ahead of longtime industry leader Fidelity to become the world's largest mutual fund manager. Like it or not, Vanguard was on top.

As McNabb saw it, Vanguard's ascendance was a wonderful thing for investors—a milestone in bringing low-fee money management to the masses. But for the company itself he wasn't as sure. McNabb decided he needed to share his thoughts. So he penned a letter to his 12,700-strong "crew"—Vanguard is named for an 18th-century ship, and nautical terms abound there—and posted it internally, on Dec. 15, 2010, to "Bill's Blog."

The message, titled "The Penalty of Leadership," was hardly imbued with holiday cheer or the faintest wiggle of victory dance. Rather, McNabb admitted that Vanguard's top-dog status "unsettled" him. He warned that the firm's hard-won reputation could be destroyed by a single mistake and that Vanguard would now draw more scrutiny from regulators, journalists, and competitors. McNabb singled out complacency as the firm's biggest threat and left his employees with seven words to remember—nuggets of wisdom from Presidents Harry Truman and Ronald Reagan, respectively: "The buck stops here." And "Trust but verify."

Merry Christmas, everyone.

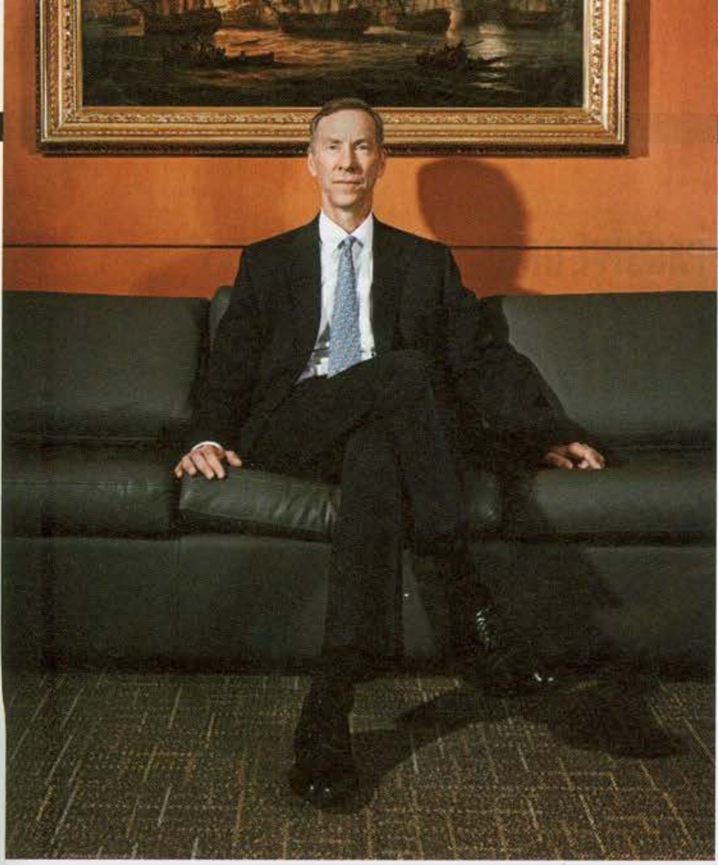
Six years on, Vanguard is still No. 1 in the mutual fund world—and by a widening margin. The company's pile of assets under management has more than doubled, to $3.8 trillion, and it swells by roughly $1 billion per day. Vanguard easily leads its peers in annual net asset flows, accounting for more than half of the industry total.

Vanguard's increasing dominance is multifaceted. The firm is now the biggest player in the booming area of target-date retirement funds. And today its ETF business has surpassed that of the industry pioneer, State Street, and trails only BlackRock, the world's largest asset manager (thanks to its preeminent position with institutional investors). In part, Vanguard's success can be explained by the public's growing embrace of its specialty: indexing. But Vanguard's actively managed funds—now accounting for 30% of its assets—are growing too. The company's long-dormant international business has recently come alive as well, increasing in size by 66% since 2010, to $234 billion in assets.

More recently Vanguard has been edging its way into the world of financial planning. Its new Vanguard Personal Advisor Services—low-cost financial guidance provided by an online "robo" platform and a pool of 450 human certified financial planners—launched in May 2015 and, with $47 billion in assets, has easily surpassed trendy fintech startups like Betterment and Wealthfront.

Even as his company keeps finding new worlds to conquer, however, the chief architect of Vanguard's astounding run of growth remains circumspect about its consequences. McNabb admits that the need to bolster the company's workforce—hiring more than 1,700 people this year alone—has been a challenge. "I wouldn't want to kid you and say that it's easy," he says. "It strains the organization."

The CEO also admits that his company's sheer scale has foisted upon it a greater level of responsibility—one it perhaps wasn't fully prepared to handle a few years ago. Vanguard now owns about 5% of the average publicly traded company in the U.S. And advocacy groups have criticized the



○ **Vanguard CEO Bill McNabb, photographed in the company's headquarters in Malvern, Pa., admits to being a little bit "unsettled" by the asset manager's stupendous growth.**

fund giant for not using its sway to, say, limit out-of-control CEO pay packages or support corporate political spending disclosures.

But embracing this new form of leadership will necessitate even more radical change. The Vanguard brand was built on the idea of relentlessly reducing the cost of investing for the average person—not on activism. Can Vanguard become an advocate for good governance without losing its way? "That is one of the biggest by-products of our success that needed to be addressed," says McNabb. "We think of this as an incredible responsibility to get it right."

IT'S A COOL FALL DAY on Vanguard's suburban campus, and McNabb is sucking on a lozenge. His voice is hoarse after racing in the Head of the Charles Regatta the previous weekend. Tall and still rail thin at 59, McNabb rowed crew at Dartmouth and coached the sport for a few years postcollege at a Pennsylvania prep school, where he also taught Latin. In conversation he comes across as relentlessly unimpressed with himself as the manager of so many trillions of dollars. "It's not my money," he says. "We are very humbled to have the responsibility to oversee it."

McNabb joined Vanguard in 1986. He had been to Wharton and done a stint at Chase Manhattan Bank in New York. At the time, Vanguard was merely a $25 billion firm with a visionary founder and a 1-800 number. But McNabb liked its feel—"Wall Street smarts with Midwestern values"—and went through 25 interviews to get his first job there, including one with the visionary founder, himself: John "Jack" Bogle.

At the time, Bogle was recovering from one of his many heart attacks, and he grilled McNabb while stretched out on a couch: "I don't know why you'd want to come here. We're just a little company, and you've got a pretty impressive résumé."

Vanguard has always been a different animal. Bogle founded the company in 1975 after being fired by the board of Wellington Management Co. He structured his new firm in a completely novel way—as a "mutual mutual fund," or an investment company that would be owned by its member funds and operated wholly in the interest of its shareholders. It would run like a nonprofit, at cost; what wasn't used to keep the lights on would be returned in the form of lower fees.

The company's defining development came in 1976, when Bogle introduced Vanguard's first index fund. It wasn't an industry first—Wells Fargo beat him to it—but Bogle was a true believer in the concept: Over the long term you can't beat the market; it's better just to own a piece of every stock and save money on trading fees too.

The approach drew laughs. Fidelity publicly pooh-poohed it, and another competitor branded it "un-American." When the fund launched, it was derided as "Bogle's folly."

Today it's known as the Vanguard 500 Index Fund, and it holds some $260 billion in assets. And Bogle himself retains a cultlike following of index-investing devotees who call themselves "Bogleheads."

But the house that Bogle built is a very different place today. In fact, the 87-year-old founder, long since retired from the board, has made a sport of trolling management at the company he started. He hated the idea of exchange-traded funds when Vanguard got into the business in 2001 and still isn't a big fan. Bogle has also joined in the criticism of institutional investors, like Vanguard, for not more aggressively throwing their weight around to advance shareholder interests.

Perhaps the greatest change, though, is in the firm's basic orientation. "Under Jack Bogle, growth was a side effect," says Daniel P. Wiener, a journalist-turned-financial-adviser who has published his popular subscription newsletter, *The Independent Adviser for Vanguard Investors*, for 26 years. "Today it's an objective."

Speaking at a Bogleheads convention in September in Philadelphia, Bogle said as much. He had

PHOTOGRAPH BY NATHANIEL WELCH

always worried about growing too big, Bogle told the crowd. "It's a greater responsibility and, for me, a constant worry."

But Bogle also said the bad feelings between him and the stewards of his firm are behind him. His relationship with Vanguard management is as harmonious as it has ever been, he said before commending McNabb's team for doing all it could to keep Vanguard "human."

THE BLUEPRINT for Vanguard's stunning expansion was drafted in Boulder in September 2009 during workshops with business guru Jim Collins. For McNabb, a disciple of Collins and a close reader of his leadership bibles *Good to Great* and *Built to Last*, the calm after the financial crisis seemed like the perfect time "to challenge everything we were doing." So he took his senior leadership team to visit Collins where he lives in Colorado.

Collins pushed the executives to think bigger and pressed the group on its ambivalence. ("Do you have global aspirations or do you not?") The Vanguard team left the three-day retreat with a 10-point to-do list and a clearer sense of purpose. At the top of the agenda: doubling down on ETFs, dominating target-date funds, building out the international business, providing a more comprehensive advice product, and being "a best place to work."

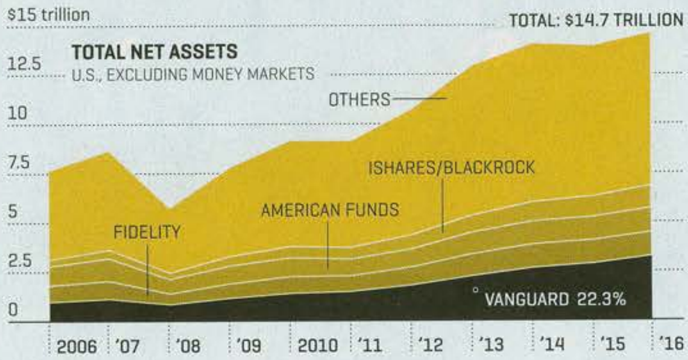
Collins also supplied McNabb and his team with a new vision of Vanguard. The company, he explained, was a "flywheel"—a concept that comes out of Collins's decades of research on successful companies. Like a big, heavy wheel, Vanguard needed to be pushed forward until it picked up speed and began to turn really fast. In the asset giant's case, low-cost funds with great long-term performance lead to loyalty and growth in assets—which leads to even lower costs and even more growth. In the cost-sensitive, postcrisis environment, Vanguard was ready to spin even faster.

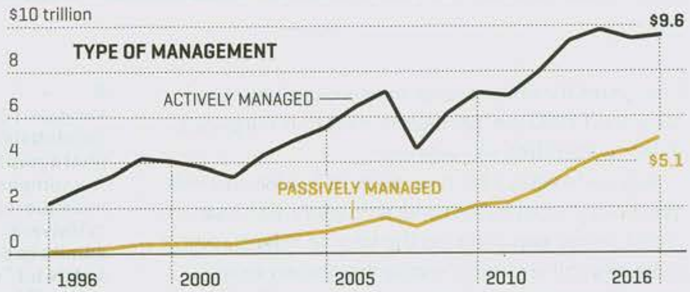
"They had been building a flywheel," says Collins. "They just didn't have the language for it."

To juice the flywheel's momentum, Vanguard has invested in ways it never had before. Its ETF business has increased sixfold, partly because the company took the unprecedented step of putting in place a nationwide salesforce to strengthen its business with financial advisers.

PASSIVE GROWS AGGRESSIVELY

VANGUARD has been the biggest beneficiary of a surge of interest in recent years in so-called passive investing—products that track equity or fixed-income indexes rather than rely on a manager to make good trades.





SOURCE: MORNINGSTAR; AS OF NOV. 1, 2016

IT'S TEMPTING to think of Vanguard's recent success as a rare, uncomplicated tale of moral triumph in the financial services industry. For once the nice guys finish first. Investors save. And we all win.

Of course, it's not that simple. Certainly the company's zeal for low fees has been good for investors. (The firm's downward pressure on costs is known as the "Vanguard effect.") But the giant asset manager is showing signs of growing pains. Interviews with former employees and observers of the firm suggest a certain level of dysfunction at Vanguard—including technical glitches and low employee morale.

As a result, Vanguard's reputation has suffered in the world of online workplace rankings. On the job-search site Glassdoor, Vanguard has a 51% "recommend to a friend" rate, lower than the rate for some of its money-management peers, including Fidelity (81%), BlackRock (75%), and TIAA (69%).

One ill-fated episode was Vanguard's effort in 2013 to merge its clients' mutual fund and brokerage accounts. The company was flooded with calls from confused investors. And customer-service representatives often didn't have answers for them. Wiener, who writes the Vanguard newsletter, says the debacle was symptomatic of bigger problems. "The technology is just inadequate," he says, adding that one can't even deposit a check by smartphone on Vanguard's platform now—something that was previously possible on the site and that is standard across the industry. "You can't be a low-cost provider and not cut corners somewhere."

Former Vanguard employees say they often felt like the victims of corner-cutting. That's especially true at Vanguard's Scottsdale office—a site that employs more than 2,000 people, many of whom spend their days fielding customer calls. Some who answered phones said that understaffing meant they couldn't take days off and that they were monitored, to the minute, even for bathroom breaks.

Several former employees expressed concerns about metrics that were used to evaluate staff. One such measure, they say, was the number of account holders they enrolled for a consultation with Vanguard's Personal Advisor Services, the company's new advice product. The consultation was free, but former employees say many felt pressure to refer clients even if it wasn't a good fit. As a result, individuals with sophisticated portfolios, for instance, might be advised to move money into a handful of basic Vanguard index funds.

A Vanguard spokeswoman admits that the company hit "some bumps in the road" when adopting new technology in the past. But she disputes the notion that it has not invested sufficiently in tech. She cites numerous honors over the years from publications like *Computerworld* and *Information Week* as evidence that Vanguard's IT is "cutting edge."

As for complaints by former employees, Vanguard says it can't comment on specific accounts without all the details of the individual cases. But the spokeswoman cites the company's relatively low 9% turnover rate as evidence that morale is good. She says that employees are "not financially incented to push any products or services," and that the primary metric used for workers is "aligning investors or callers to solutions." She also points out that the advice product reflects Vanguard's philosophy of broad, low-cost diversification.

Another lingering distraction is the allegation by a Vanguard tax-lawyer-turned-whistleblower, David Danon, that the firm's structure has caused it to persistently evade taxes. According to his analysis, Vanguard should have been paying taxes on all the profits it returned to its shareholders in the form of lower fees. Danon's initial complaint, filed in 2013 in New York State, was dismissed last year when a judge ruled that Danon had violated attorney-client privilege. The IRS is reportedly weighing his arguments but declined to comment. Vanguard says the charges are without merit.

PRESSURE HAS BEEN mounting on Vanguard to speak up more on behalf of the 20 million shareholders it represents. In 2015, Vanguard's corporate governance team cast 160,000 votes in 16,740 shareholder meetings in 73 countries. In 92% of cases they voted in support of management. Advocacy groups point out that the firm only rarely supports shareholder proposals on hot-button issues—for example, those related to managing climate risk.

Vanguard's apparent support for the powers that be extends to compensation. According to an analysis from shareholder rights group As You Sow, Vanguard and BlackRock were the most likely of the 25 largest mutual fund families to support pay packages of highly paid CEOs—each voting in favor 97% of the time, vs. 78% for the industry overall. Vanguard, though, says it prefers to address CEO pay by influencing board composition. In the past year, it voted against 396 directors in the U.S. who served on compensation committees.

McNabb says he thinks a lot about governance issues these days. He's particularly concerned that companies not give in to "creeping short-termism" in their decisions. "People think that because we have a lot of indexed assets, we'll be a passive owner," says McNabb. "We don't think that's true. We want long-term results, not short-term."

So Vanguard has beefed up "engagement" efforts—holding 817 meetings, phone calls, and videochats with companies in the past year compared with 685 the year before. Whereas a proxy vote is a shot fired, engagement is backdoor diplomacy. It's Vanguard's preferred approach, and the firm argues that it is more effective. Vanguard credits engagement with more than 100 "direct commitments to change" from companies this year. Commitments from whom, and about what exactly, it will not say.

McNabb is confident that Vanguard will find the right balance between its inherent low-key nature and its new high-profile role, just as he believes that the shift to Vanguard-style indexing is here to stay. But that doesn't mean he's relaxing. "If you're not paranoid about success, you really run the risk of being short-lived," says McNabb. That's the burden, and the penalty, of leadership.

"Total" Domination

Vanguard has piled up assets in broad index funds. Three of its biggest:

Vanguard Total Stock Market Index (VTSMX)
Total assets: $463 billion.
Gives investors exposure to the entire U.S. market—small-, mid-, and large-cap growth and value stocks. Launched in 1992, the equity fund is now the industry's largest.

Vanguard Total Bond Market Index (VBMFX)
Total assets: $175 billion.
The 30-year-old fund overtook Pimco's Total Return last year as the fund world's largest bond portfolio.

Vanguard Total International Stock Index (VGTSX)
Total assets: $224 billion.
First introduced in 1996, it's the biggest mutual fund offering investors index exposure to equity markets around the globe.

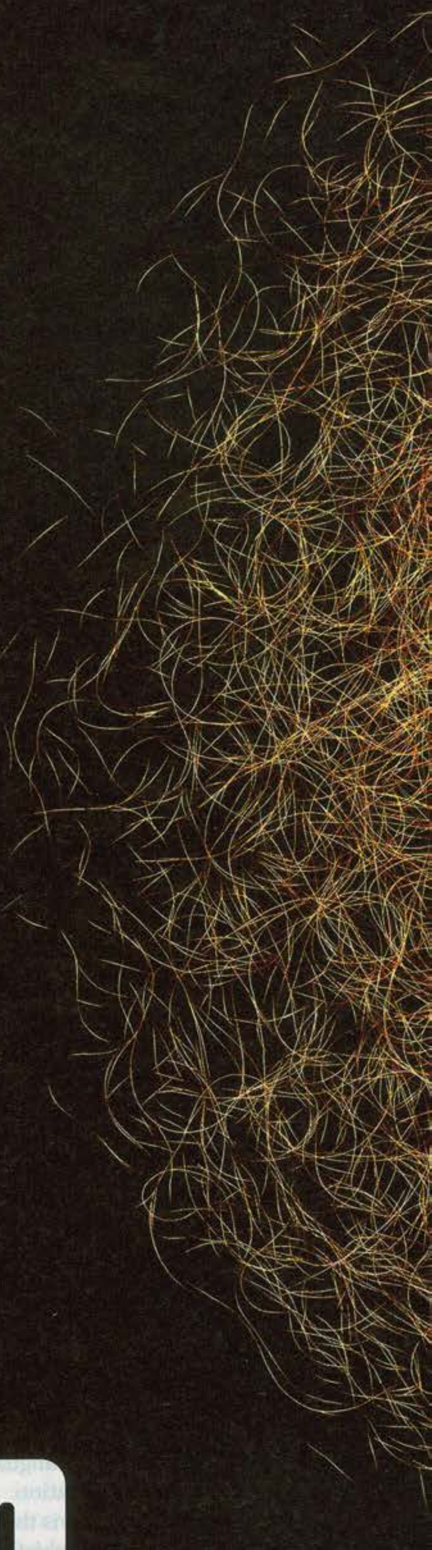
ASSET TOTALS AS OF 10/31/16

Untangling Dividend Stocks

Finding strong income in equities is getting trickier. Here are the top ideas from five of the best fund managers in the business.

BY CHRIS TAYLOR

PHOTOGRAPH BY **KENJI AOKI**



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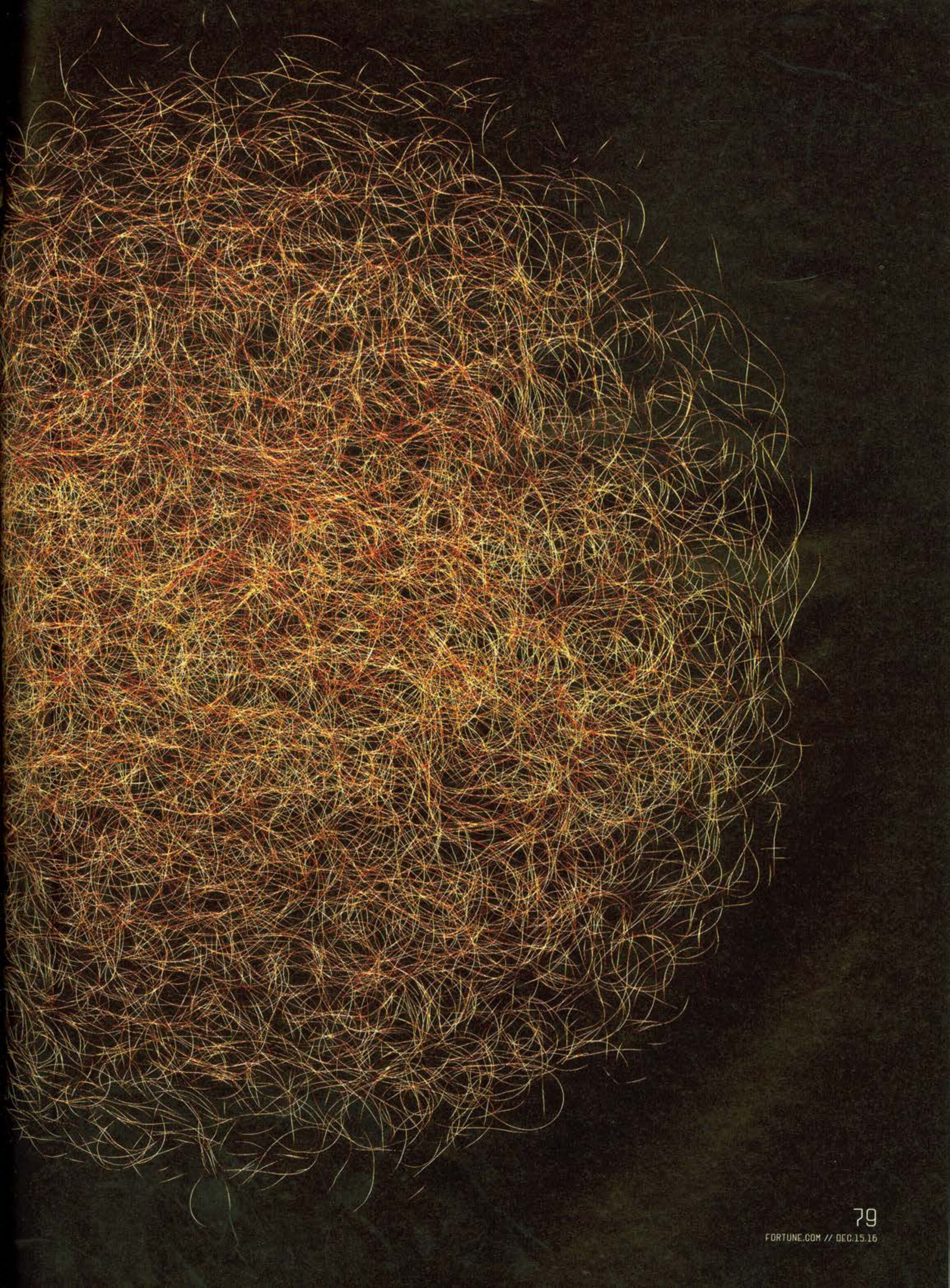
DIVIDENDS



UP UNTIL A FEW MONTHS AGO, dividend investing seemed a bit like a child's first soccer game: Every player was a star, the spectators were happy and supportive, and the whole team got a participation sticker.

But as every parent knows, the mood starts to change after that forgiving period. The competition gets stiffer, the observers a lot more critical, and the system rewards only those rare talents who can deliver in important moments.

These days it's feeling more like the Olympics if you're an investor seeking income. That's because the contest to find winning dividend payers is intense, raising the degree of difficulty to its highest level in recent memory. Stock valuations in the category are lofty after years of outperforming the broader market. The forward price/earnings ratio of the top 25% of S&P 500 stocks by dividend yield is 17, vs. a 36-year average of 12, according to Ned Davis Research. Indeed, stocks of all varieties are suffering a case of altitude sickness these days: P/E ratios are in the 97th percentile relative to levels over multiple decades.

Meanwhile, actual dividends, as piddling as they have been since the 1990s, aren't likely to soar. The average payout ratio—the percentage of profits that companies hand to shareholders as dividends—has risen to 40%, well above where it has been over the past 10 years (except for during the financial crisis and recession, when earnings plummeted, making the ratio spike upward). Dividend increases are shrinking, and the number of decreases is accelerating.

Then there's the monster that rarely seems to leave the closet: potential interest rate hikes. Of course, historically low rates made dividend stocks attractive in the first place, as retirees abandoned Treasury bonds in favor of dividend-paying stocks. (Even today, the yield on a 10-year Treasury, 2.3%, is only a few ticks above the 2.0% average yield of an S&P 500 stock.)

If rates rise, as is expected, investors could flee the sector and send stocks careening downward. "It is a difficult time for fund managers," says Howard Silverblatt, senior index analyst for S&P Dow Jones Indices. "No doubt they are all looking with nervousness at interest rates."

Okay, there are plenty of ominous clouds on the horizon. But there's also a lot of evidence for a sunnier scenario. For starters, dividend payers actually outperform nonpayers even when interest rates are rising, Ned Davis Research points out.

And that P/E ratio of 17 for top dividend stocks, though elevated, is only slightly higher than the overall S&P's 16.7. If you're going to tolerate a lofty price, you might as well get a healthy dividend with it. As Warren Buffett is fond of pointing out, equities tend to outperform bonds over long periods.

Still, between the threat of rate hikes and the potential dislocations stemming not only from an epochal transition between presidential administrations, but also from Brexit and economic and political change around the world, uncertainty abounds.

It's a particularly appropriate moment to seek the wisdom and experience of a sage expert, one who can look beyond just yield levels and make sense of the numbers. A dividend whisperer, if you will. We asked five of the best in the business to assess what's happening in the dividend world and where they see opportunity and safety.

THE CONTRARIAN

Ramona Persaud
Fidelity Dividend Growth and Fidelity Global Equity Income

IN THE WORLD of income-oriented stock investing, there is one horrifying event akin to a skunk wandering into a garden party: the dividend cut. When cash-strapped companies slash their payouts, most income-loving investors react with horror.

Then there is Ramona Persaud. The manager of Fidelity's Global Equity Income Fund, whose three-year returns of 5% have almost doubled its world-stock benchmark, might actually perk up at a dividend cut. The reason? A cut most likely means a company's share price is swooning. It might be an occasion to pick up a quality name on the cheap. "At the point when everyone feels like they want to throw up, that is exactly the point when I might be willing to look at a company," says Persaud. "A cut clears the decks, takes the pressure off the balance sheet, and takes the payout ratio to sustainable levels."

The contrarian-minded manager also has a soft spot for stocks she thinks have been excessively punished. One example: clothing retailers, many of which have been battered owing to the fear they will be crushed by the Amazon.com juggernaut.

That is why Persaud picked up shares of **L Brands,** which owns the likes of Victoria's Secret and Bath & Body Works. She likes the company's "shrewd" instincts and its knack for delivering a return on capital "far superior to the market," an average of about 27% over the past five years. Despite that, L Brands shares trade at a valuation roughly equal to the overall market's. To Persaud that "just didn't make any sense." The stock's yield is 3.4%, and the payout has been growing at a 25% annual clip since 2011. Throw in management's track record of reducing share count, and L Brands shares look alluring indeed.

Persaud is also a fan of **VF Corp.,** the $23-billion-in-sales parent company of brands ranging from the North Face to Timberland to Lee jeans. The retailer's stock has slipped 10% so far this year, lowering its forward P/E to 16.4. Now could be a handy moment to buy VF shares and profit from their 2.9% yield.

She also sees intriguing potential abroad, where many markets boast average yields higher than the S&P 500. For instance, the prevalence of public pensions in the U.K., which require ongoing cash streams to service their obligations, has led to a market culture that values higher yields. (Among her global fund's top holdings: Ireland-based **Medtronic,** which is yielding 2.1%.)

THE SEEKER OF GROWTH

Tom Huber
T. Rowe Price Dividend Growth

T. ROWE PRICE'S TOM HUBER is feeling cautious these days. With valuations lofty, profits being squeezed, and payout ratios having risen for years, the gems are rarer and harder to uncover. But Huber has a track record of locating them, with five-year average annual returns of 13.2%. He focuses nearly as much on potential growth—either in the dividend itself or in the stock price—as he does on the dividend.

One Huber favorite, which will be familiar to fans of the Dividend Aristocrats (those companies that have raised their payouts for 25 straight years or more) is **PepsiCo.** A strong mix of beverages and snacks means plenty of free cash flow and 10% annual dividend bumps for the past 10 years, making for a 2.9% current yield. Huber foresees high-single-digit earnings-per-share growth, and 15% share-price upside in the next couple of years, even before factoring in yield.

In some cases Huber is willing to accept a below-market yield because he anticipates above-market growth. Exhibit A for such an approach: **Comcast.** The cable giant pays a modest 1.8%. But with its best-in-class balance sheet, savvy management under CEO Brian Roberts, and "underappreciated" performance—including improving the profits of its NBC unit—Huber loves its steady, subscription-based cash flow. Moreover, Comcast has been increasing its dividend at a healthy 20% clip for the past five years and has room to bolster it further. Combine that with stock buybacks and share-price increases, and Huber foresees double-digit annual returns.

THE STEADY HAND

Don Kilbride
Vanguard Dividend Growth

FOR ALL THE INTEREST RATE Cassandras out there, Don Kilbride of Wellington Management, who oversees Vanguard's Dividend Growth Fund, has a word of advice: "Relax."

For one thing, a rate hike is a signifier of a strong economy, which suggests that most stocks should be doing well. Second, any elevation in rates is likely to be extremely gradual

PICKS
YIELD

L BRANDS
(LB)
3.4%

VF CORP.
(VFC)
2.9%

MEDTRONIC
(MDT)
2.1%

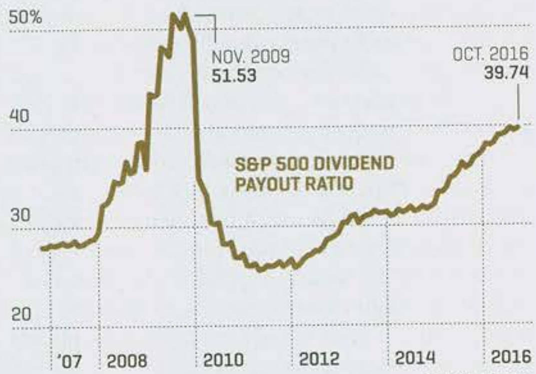
PEPSICO
(PEP)
2.9%

COMCAST
(CMCSA)
1.8%

YIELDS AS OF 11/22/16

Are Dividend Payouts Due for a Fall?

The percentage of earnings handed out as dividends has been rising, portending a leveling or drop. [The surge around 2009 resulted from plummeting earnings rather than soaring dividends.]



SOURCE: FACTSET

PICKS
YIELD

↓

NIKE (NKE) 1.3%

COSTCO (COST) 1.2%

MICROSOFT (MSFT) 2.6%

UNION PACIFIC (UNP) 2.3%

SCHLUMBERGER (SLB) 2.5%

AIR PRODUCTS & CHEMICALS (APD) 2.4%

YIELDS AS OF 11/22/16

and not shocking to the market.

Lastly, Kilbride's eyes aren't on this quarter's share-price shifts, or next quarter's. He's looking five or 10 years away, so the minutes of the Fed's next meeting interest him very little indeed. "We think the best way to make money is over a long period of time," he says. "Compounding is a very powerful metric, and the way you take advantage is to let time be your friend. We like low turnover and eliminate expenses by buying high-quality stocks and holding them for many years."

Kilbride's approach has led his fund to 7.9% average annual returns over the past decade, vs. 6.8% for the S&P 500. He avoids so-called dividend traps by steering clear of stocks with suspiciously high yields, which may indicate problems ahead, he says. As a result he is underweight in classic equity-income sectors like utilities and telecom, while overweight in health care.

Nike is an excellent representative of the two factors Kilbride looks for: companies that are creating value and making a habit of distributing that value to shareholders. Fat margins and plenty of free cash flow are both "top of class," and earnings per share have been growing at a double-digit rate for years.

That operating wizardry has allowed the sports-apparel Goliath to push its dividend up steadily, at 18% a year over the past decade, an "astonishingly good number," says Kilbride. (Current yield: 1.3%.) And yet the payout ratio remains a modest 22%, which indicates Nike can easily afford more shareholder raises in the future. Since the stock has dropped from $67 to $50 in the past year, it could be an attractive time to pick up an established dividend grower at a modest discount.

Another favorite: retailer **Costco.** The big-box chain has a yield in line with its frugal prices—a bargain-basement 1.2%—but that dividend has been rising 24% a year over the past 10 years. The company's "terrific" management (for more, see our feature on Costco in this issue) and history of earnings growth has Kilbride swooning: "I could talk forever about Costco."

THE PURIST

Michael Reckmeyer
Hartford Equity Income

IF YOU CRAVE a bracing dose of pessimism about the markets, talk to Michael Reckmeyer. A portfolio manager of Hartford Equity Income, he sees not just a single headwind, but a swirling maelstrom that investors will have to withstand. "It's a challenging time right now," says Reckmeyer, whose fund boasts five-year average annual returns of 14.8%. "There is political and economic uncertainty. There are questions about what the central banks are doing, about Brexit, about the sustainability of China. And we are seven years into a bullish economic cycle, which is very long by historical standards."

Here's the good news: In difficult times dividend-oriented strategies tend to outperform the broader market, as investors flee to relative safety. In downturns such as 2000–02 and 2008, for instance, that strategy outperformed stocks as a whole by large margins. (By the same token, the approach can lag during a rollicking bull market.)

So what sets Reckmeyer apart from other managers? Some dividend seekers opt for the so-called barbell approach, with some of their holdings offering weighty payouts and others hardly any. Not for Reckmeyer. If a company doesn't offer a meaningful dividend, he's not interested. Moreover, he likes to "stress-test" holdings to make sure dividends are sustainable in the event of an inevitable market downturn.

One of his favorites: **Microsoft.** Reckmeyer keeps his eyes peeled for management changes, which can be "catalysts for change," and CEO Satya Nadella certainly fits the bill. The company's enterprise business, which accounts for the vast majority of its revenues and profits, has locked in gushers of ongoing revenue. It's a sticky business—big companies don't change their tech setups easily—and Microsoft's cloud and database businesses are driving growth, helping mitigate the secular decline of desktop software.

To be sure, Microsoft's price/earnings ratio has surged, to 18.3, after a nice run. But even at that level the shares offer a substantial yield (2.6%), and the dividend has been raised for 12 years running. A cash hoard of $60 billion and annuity-like revenue streams from subscription businesses portend a safe dividend that should continue to mount.

Another name on Reckmeyer's "nice" list: **Union Pacific,** the largest railroad operator in the U.S. He likes to pounce on market "misunderstanding and overreactions," he says. So when the carrier's 2015 volumes fell because of external forces, such as collapsing oil prices, Reckmeyer saw an opportunity.

Rebounding oil prices, lower coal and grain inventories, and a cost-cutting regimen have all begun working in Union Pacific's favor since then, with the stock having risen 17.5% in the past year. Despite that comeback, its valuation isn't yet out of reach, with a forward P/E of 17.8. Perhaps best of all: The nature of the business means the firm essentially has a number of regional monopolies around the country, and hence the pricing power to generate some impressive margins. Its yield: 2.3%.

THE HOT HAND

Phil Davidson

American Century Equity Income

IF YOU'RE SEARCHING for dividend investors on a sizzling streak, look no further than American Century's Phil Davidson. The company's chief investment officer and manager of its Equity Income offering is riding one-year returns of 12.6%, roughly double that of its Russell 3000 benchmark. The fund has averaged 10.6% annual returns over its almost 20 years.

So what is Davidson's playbook? For one, not trying to, as the axiom goes, catch any falling knives. He prefers a conservative philosophy of picking up high-quality, low-debt names that aren't facing existential problems, like a vanishing market or disruptive competitors.

Look at the fund's top holdings: big, cozy names like Johnson & Johnson, General Mills, Exxon Mobil, and Walmart. A common trait: dominant positions that offer investors steady and sustainable dividend streams, providing what he calls "a layer of protection."

A preference for big names doesn't mean Davidson is afraid of volatility, though. In fact he's okay with a gyrating stock price as long as it's caused by cyclical or temporary external forces rather than structural internal problems.

One stock he favors is oil and gas services giant **Schlumberger.** It has a dominant market share and stable underlying businesses, but its relationship to volatile oil prices buffets the stock quite a bit. What Davidson likes: Schlumberger shrewdly uses the periodic downturns to improve its competitive position, buying companies on the cheap and gaining market share against weaker players that have to retrench. Combine that with a sparkling balance sheet and its history of never cutting its dividend—the yield is now 2.5%—and its beaten-down share price (down by a third over the past two years as oil prices collapsed and the company's profits were pounded) looks like an opportunity to pick up a high-quality bargain.

Another name to watch is **Air Products & Chemicals,** an industrial gas company. As you might expect, it's a realm with a high barrier to entry; just a handful of operators control almost all the market. But in the past the company owned some unwieldy noncore businesses and was dragged down by margins that lagged those of its industry peers. The proof of a righted ship: AP&C has raised its Ebitda margins by seven percentage points over the past three years, dramatically closing the gap with Praxair, its primary competitor.

Recent asset sales have helped the firm focus on high-quality core assets, fire up its return on capital, and pay down debt at the same time. The shares have sold off because of macro issues, like worries about a global slowdown, but Davidson views that as a transitory blip.

Nothing is permanent, of course, and Davidson worries that the dividend stock romp of recent years could soon be coming to an end, in large part because the category has become so popular. "It's getting tougher to buy companies on terms that we like," he laments. Still, if you're disciplined and have a judicious eye, these dividend picks could stand you in good stead, even after the crowd departs. ■

"IT'S GETTING TOUGHER TO BUY COMPANIES ON TERMS WE LIKE."

Phil Davidson

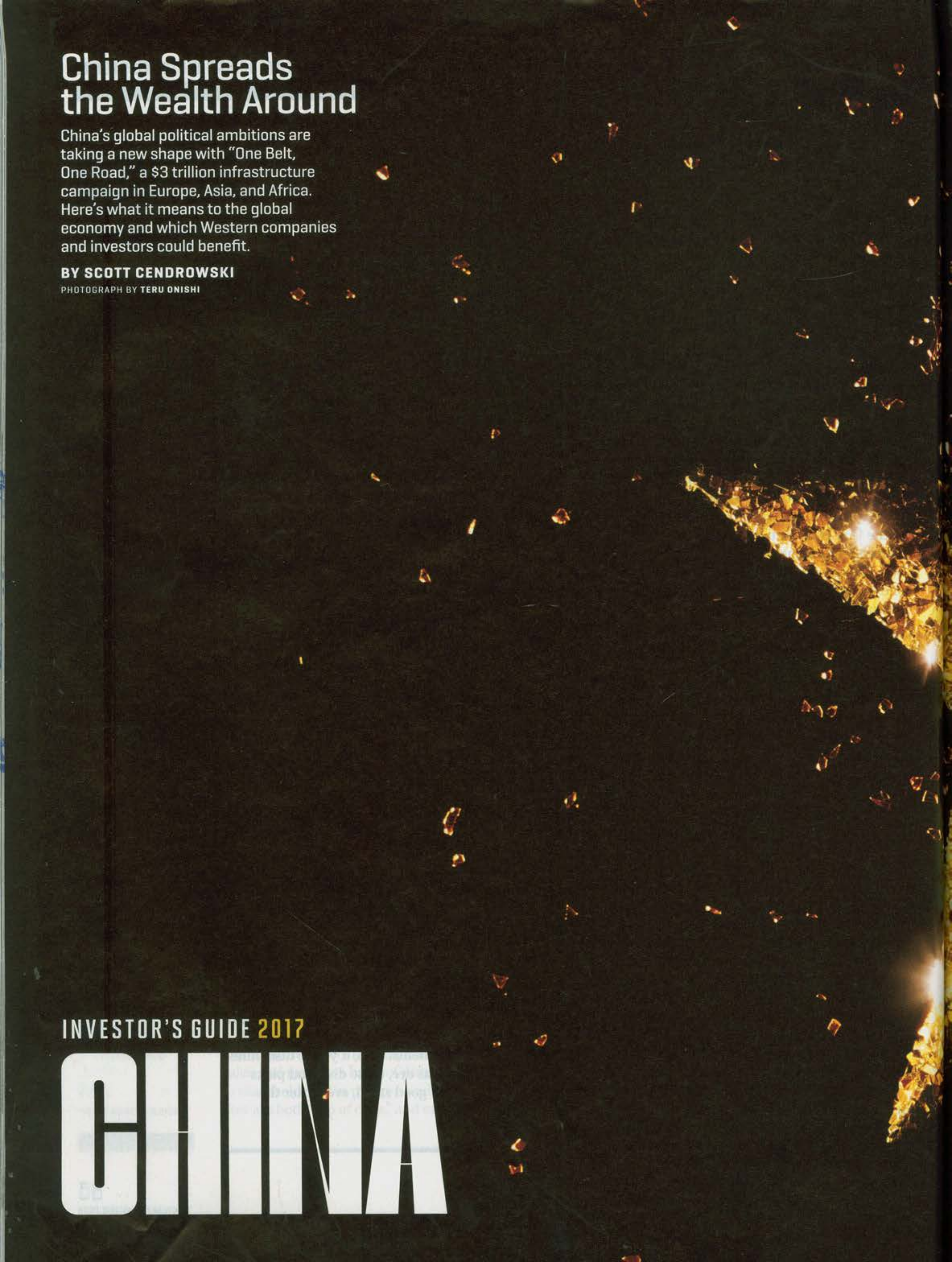
American Century

China Spreads the Wealth Around

China's global political ambitions are taking a new shape with "One Belt, One Road," a $3 trillion infrastructure campaign in Europe, Asia, and Africa. Here's what it means to the global economy and which Western companies and investors could benefit.

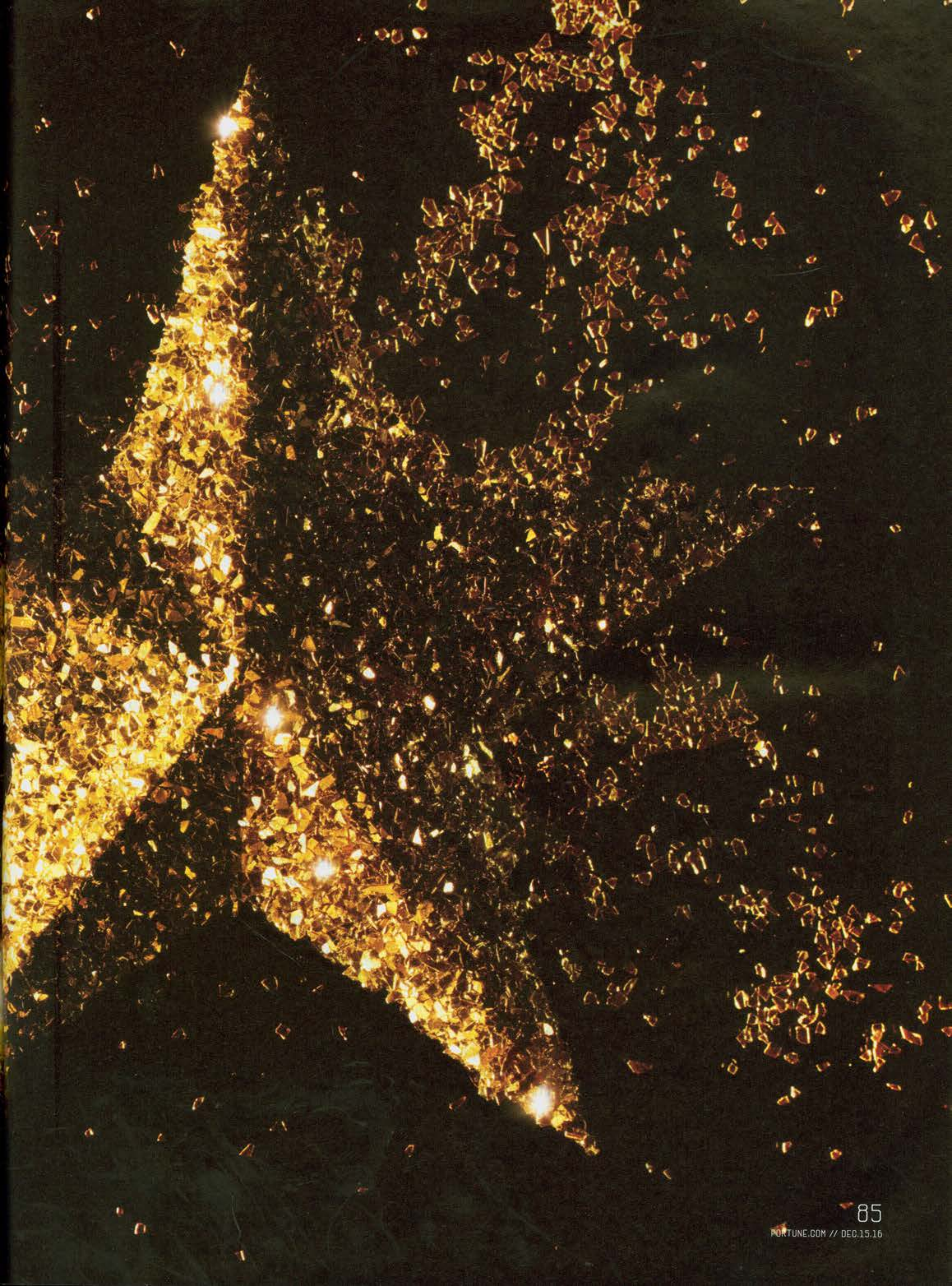
BY SCOTT CENDROWSKI

PHOTOGRAPH BY **TERU ONISHI**



INVESTOR'S GUIDE 2017

CHINA



THE HIGH-RISE COASTAL CITY of Dubai plays host to all kinds of luxury oddities: indoor ski slopes, gold-bar vending machines, vast artificial archipelagoes shaped like palm trees. But six miles inland, something just as unusual, if far less gaudy, is taking shape—the first coal-fired power plant in the Middle East.

The United Arab Emirates, to which Dubai belongs, need to diversify their energy mix. By 2030, Dubai hopes to balance natural gas and solar and get 7% of its energy from coal. Its first step: a massive "clean coal" project. Workers broke ground in early November for a plant expected to be finished in 2023.

In this petroleum-dominated region, there isn't much coal-power expertise. But that won't be a problem for Dubai, thanks to help from unusual sources. The nearly $2 billion project is backed by $1.4 billion in funding from the Chinese government and banks and is being built by Chinese construction crews.

Why such largesse for an emirate swimming in oil wealth? Because Dubai is one of the nations China is targeting as part of One Belt, One Road, an ambitious foreign-investment project designed to boost China's trade and diplomatic ties with more than 60 countries in the Middle East, Europe, and Africa. China is opening up its checkbook for this group of potential allies: It's committing $1 trillion through the program in the next decade—and as much as $3 trillion over the long term—to huge infrastructure investments, in locations that stretch from China's coast through the deserts of Xinjiang province and the steppes of Central Asia as far west as Spain and Scandinavia.

Already, nearly $900 billion worth of projects are underway or planned, according to the China Development Bank, and the first ones are almost finished. A $2.1 billion thermal-power plant in Karachi should be completed by the end of next year, just 40 months after construction started.

One Belt, One Road represents China's biggest overseas spending effort ever, a project that, adjusted for inflation, is at least 12 times the size of the Marshall Plan, the history-changing U.S. program that helped rebuild Western Europe from rubble after World War II. The effort is already seeding power plants, railroads, and pipelines in emerging-market countries starving for such backbone investments. And, notably, it's sparking optimism among big Western engineering and construction conglomerates that see bigger growth opportunities in these countries than they do in Europe, in the U.S. (even under an infrastructure-friendly Trump administration), or in China itself.

Just as with the Marshall Plan, there's far more than altruism in play. China's huge state-owned infrastructure companies, hampered by their own country's gradual slowdown, need projects that will keep their foundries blazing and their workers paid while the nation makes the transition to a less industrial, more consumer-driven economy. And Belt and Road (as China's government has rebranded it) helps China earn diplomatic goodwill at a time when the U.S. and Europe appear less willing to invest in economy-building abroad.

But that doesn't mean Western companies won't benefit. At the signing ceremony in July that finalized plans for Dubai's 2,400-megawatt Hassyan coal project, the Chinese group set to build the plant and the Saudis who will operate it were joined by a partner: an executive from General Electric, standing proudly near a backdrop boasting the familiar blue GE logo. GE staff will be far from bit players here; without their contacts and expertise, projects like the Hassyan plant might struggle to get off the drawing board.

Belt and Road is "a very big deal for GE," Rachel Duan, president and CEO of GE Greater China, tells *Fortune*. Her $8 billion division has 23,000 employees whose main business is partnering with Chinese companies across 34 joint ventures in China that manufacture everything from wind turbines to oil pipeline equipment. GE's biggest customers in China are huge state-owned enterprises, and as those companies go abroad to Dubai and elsewhere, Duan sees GE as just the company to help them; it already has operations in 60 of the 65 countries associated with the Belt project. GE is piggybacking along to the tune of at least $2 billion a year in extra equipment sales—a significant boost even for a company of GE's scale. "These are hard projects," Duan says, explaining why Chinese partners are calling on GE. "No single company or single country can pull them off."

Whether the projects will pay off down the road is an open question: Some critics argue that China is funding them indiscriminately in a global pork-barrel push to build alliances. But in the short run, Belt and Road is creating opportunities for Chinese companies and big multinationals alike—ones that their shareholders can't ignore.

THE NEW SILK ROAD

BELT AND ROAD has a historical precedent: the ancient Silk Road that for hundreds of years connected Chinese traders with those in the Middle East and Europe via the Eurasian steppes, Palestine, and Turkey. In an era of wagon caravans and sailing ships, those trading ties did little to extend a then-insular China's geopolitical clout. But Belt and Road is intended to forge far more binding ties today.

The program, which was formally announced in 2013, is the brainchild of Chinese President Xi Jinping. Xi has already amassed power in military and economic affairs faster than any other modern Chinese leader, says Willy Lam, an expert on Chinese politics and a professor at the Chinese University of Hong Kong. Expanding China's influence abroad is Xi's next priority, and Belt and Road is designed to do just that. "It projects Chinese hard and soft power to places as far as East Africa," says Lam, "and it bonds China with countries ... that may otherwise continue to remain dependent on the U.S."

Joe Ngai, managing partner of McKinsey's Hong Kong practice, says the need for infrastructure in emerging markets in central and southern Asia and into Africa amounts to $2 trillion to $3 trillion a year. The Belt is the land-based component of Xi's strategy to meet that demand. It's a network of railroads, oil pipelines, and other projects that runs northwest from China through Kazakhstan and Russia. The Belt hits multiple Asian countries before turning west through Belarus and Poland into Europe—where it's bringing investment to countries where post-financial-crisis austerity has crimped infrastructure spending.

The Road (somewhat confusingly) is a maritime route of investments to improve ports along shipping lanes, extending from southern China to Indonesia and west to Africa, the Middle East, and southern Europe. Many of those areas have already attracted intensive Chinese investment in the past decade, and some experts say that "Belt and Road" is merely a slick label added to existing Chinese policy. But the money promised to the new project is anything but superficial.

Riding China's Investment Wave

These Western firms could profit from China's multi-trillion-dollar building spree.

General Electric (GE, $31)
GE says Belt and Road could eventually add $5 billion annually to sales. It has already sold 60 sets of wind turbines to a Chinese partner for a project in Kenya and two gas turbines for a power plant in Pakistan.

Siemens (SIEGY, $115)
The German conglomerate has $7.5 billion in sales and 70 joint ventures in China. Its power transmission, industrial automation, and building services divisions are all contenders for contracts.

Honeywell (HON, $113)
Honeywell's natural-gas control system helps run a new pipeline from Uzbekistan to China. The U.S. company foresees demand for its radar systems in new airports, among many other projects.

STOCK PRICES AS OF 11/22/16

THE DECISION MAKERS

CHINESE SPENDING abroad for Belt and Road is expected to reach $100 billion annually over the next decade, and China has earmarked as much as $3 trillion for it. The money comes from Chinese-backed development banks, China's state-owned enterprises, and even local Chinese governments. The funding process is convoluted, but one leading player is the recently formed Asian Infrastructure Investment Bank (AIIB), China's answer to the World Bank; AIIB is starting with $100 billion to lend. China will be responsible for one-third to one-half of the bank's financing, but its members include almost 60 other countries.

AIIB's board is searching for worthwhile endeavors—and so is China's domestic bureaucracy. "Provinces and cities have been assigned Belt-and-Road quotas [by the central government], and are busy sending delegations abroad to find projects," Arthur Kroeber of the Hong Kong–based research firm Gavekal Dragonomics wrote recently.

It is essentially up to Xi's administration to choose the projects. China's central government decides the countries it wants to work with, and those countries nominate projects for funding. China's selections reflect both commercial and political interests, analysts say. If the host country is important for political reasons, China may be willing to take losses on construction; if not, China is more likely to invest in collaborations that could eventually offer a positive return. Belt and Road's political elements were evident in late October when brash Philippine President Rodrigo Duterte, who has disparaged both President Obama and Pope Francis in his bid to push the Philippines away from old alliances, visited China to get in Xi's good graces. Duterte's delegation came away with $24 billion worth of funding and pledges for ports, mines, and railways.

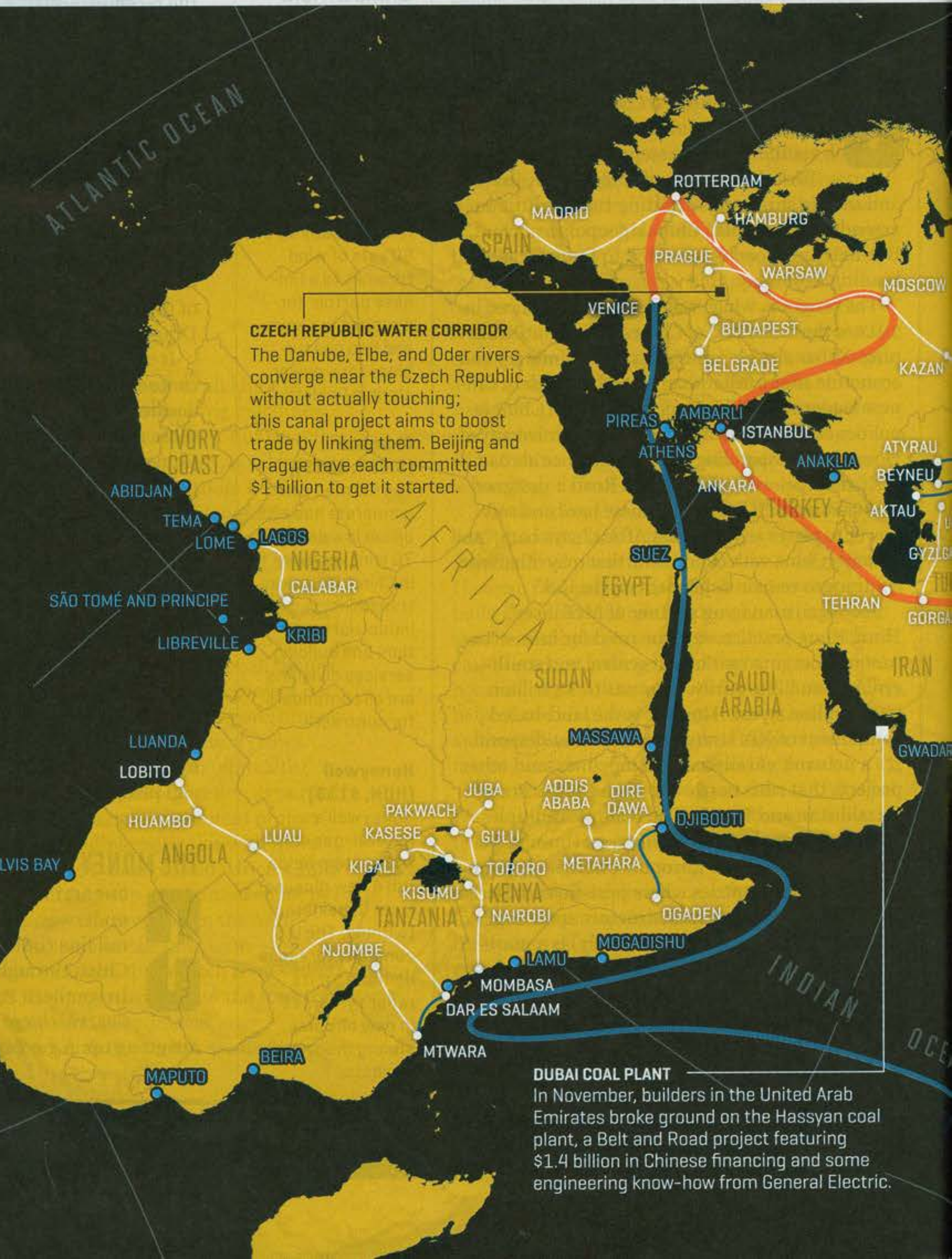
THE MONEY TRAIL

SOME BELT AND ROAD projects are already underway. A $23 billion high-speed rail line could someday stretch from China through Thailand to Singapore. In southern Pakistan along the Arabian Sea, two large coal-fired power plants are going up. A gas pipeline running from Russia to China through Siberia is under construction, with a price tag of more than $55 billion. In Europe there's a massive Czech Republic canal project linking river basins from Poland to Slovakia and Austria that China and the Czechs are each funding with $1 billion investments.

Of the $100 billion a year spent on Belt and Road, about 50% will be used for raw materials like concrete and steel, according to Strategy&, the consulting arm of PwC. For China that's essentially domestic stimulus: Top Chinese officials have noted that Belt and Road projects can soak up excess steel and iron from Chinese companies hurt by the waning of their nation's building frenzy.

China Builds A New Silk Road

The famed Silk Road trading routes once connected China with medieval Europe. Today, the One Belt, One Road initiative is strengthening China's ties to countries along the same routes—and the economic and geopolitical stakes are far higher. According to the Mercator Institute, the 65 countries that could eventually be connected by Belt and Road account for around 30% of the global economy. About $900 billion worth of projects are now either underway or in detailed planning stages, according to the China Development Bank; this map highlights some of the signature projects.



MAP: NICOLAS RAPP

SOURCES: MERCATOR INSTITUTE FOR CHINA STUDIES; PRICEWATERHOUSECOOPERS

Another 30% to 40% of total spending will go toward construction, engineering, and high-tech equipment. Those phases will be led by Chinese engineering procurement construction contractors (EPCs), which have a lock on winning the lead business from China's lenders. China's goal is eventually to attract private investors in projects that are economically viable. Qatar's sovereign wealth fund, for instance, took a 49% stake in a Pakistan power plant project, while the Chinese builder Power Construction took the other 51%.

But the EPCs—firms like State Construction International, Metallurgical Corp. of China, and Energy Engineering Corp.—don't

have strong ties in most of the Belt and Road countries. That's where the West comes in. In effect, the state-owned construction firms will be taking on debt and investing—while hiring Western engineering and construction giants as their subcontractors. "A lot of the time, Western companies have the advantage," says Joshua Yau, who heads One Belt, One Road initiatives at Strategy&. "A Western company brings in local relationships [and] track records, while the Chinese companies bring in their low cost and their Chinese financing."

WHO COULD WIN IN THE WEST

WHO WILL the EPCs rely on? Early signs favor the companies that already collaborate with them in China, including GE and Honeywell from the U.S.; Germany's Siemens; Swiss-Swedish multinational ABB; and the Italian-Argentine Techint Group. Most of these companies have headquarters in countries that haven't joined the AIIB, but their home governments haven't stopped them from bidding on the building spree. Ultimately, Belt and Road should create a total of $10 billion to $20 billion in additional annual sales for the companies over the next few years, PwC estimates.

Some Western companies are still angling for early projects. For Honeywell, China is now both the biggest international market and the biggest growth driver. In Macau in June, it advertised its services to 20 Chinese engineering firms, saying it would help those suffering from overcapacity by spreading their capital abroad. Honeywell execs say they're optimistic that they will get contracts from oil and gas deals and from new infrastructure like hotels and hospitals that will rely on Honeywell services.

Other companies appear to have even faster inside tracks. Siemens, the largest engineering company in Europe, has 70 joint ventures in China. And although it hasn't announced any Belt and Road contracts yet, it's widely believed to have a lot in the pipeline. And then there's GE, for which the Dubai Hassyan coal plant is among a dozen projects to which it has committed. In Beijing in October, GE vice chairman John Rice pitched the company's expertise and global reach to a ballroom full of Chinese construction executives. He said later that Belt and Road should boost GE's sales by $5 billion annually once the contracts start ramping up in a few years.

> "THESE ARE HARD PROJECTS. NO SINGLE COMPANY OR SINGLE COUNTRY CAN PULL THEM OFF."
> **Rachel Duan,** GE Greater China

Big commodities players, hit hard by falling prices in recent years, are also eagerly awaiting Belt and Road, since so much of the early spending will flow toward raw materials. Executives at mining giants BHP Billiton and Rio Tinto have recently told investors that they hope Belt and Road could revive China's metal exports, boosting demand for their iron ore. As Sam Walsh, Rio Tinto's recently retired CEO, said earlier this year, "Of course, all of this will require steel."

OUTREACH OR OVERREACH?

SOME CRITICS question whether Belt and Road makes as much sense economically as it does politically. "Almost by definition, huge infrastructure projects, especially those in the developing world, are white elephants," says Lam of the Chinese University of Hong Kong. "It may take at least 30 years to recover the initial investment—not counting huge management costs and costs incurred in providing security." Lam points to the $50 billion that China has earmarked for investment in a port, railways, and roads in western Pakistan, in particular in the province of Balochistan, which has been plagued recently by separatist terrorism. Already the Chinese military is being deployed to protect engineers from kidnapping, adding untold millions to the project's cost.

But such obstacles may not ultimately matter to Western conglomerates. The Chinese government is paying for their equipment and know-how on projects that might not otherwise be undertaken. And regardless of whether the investments themselves return a profit, the infrastructure could give these economies a long-term boost, making them more important markets down the road for a global-minded company.

Following the talk by Rice in Beijing this fall, GE hosted a panel whose speakers included Joachim von Amsberg, a World Bank veteran who is now a vice president at the new AIIB, and China's former vice minister of foreign affairs, He Yafei. On stage, He couldn't help pointing out that the U.S. and Britain were struggling with isolationist political movements at home. Western laissez-faire economics didn't have the standing in the world it once did, he said—and the China-backed AIIB was helping fill the void.

Afterward, von Amsberg cheerily called AIIB the "new kid on the block." Trillions of dollars were needed for infrastructure, he said. Nearly everyone in the room nodded. They would soon be playing with the new kid, and getting a piece. ■

Reinventing the American Mall

Simon Property Group built the country's biggest mall empire around big department stores. As those giants stumble, Simon is racing to adapt to 21st-century shopping habits.

PHIL WAHBA

PHOTOGRAPH BY **TOM SCHIERLITZ**

INVESTOR'S GUIDE 2017

SIMON

THE ROOSEVELT FIELD shopping complex was built 60 years ago, in Garden City, N.Y., on the former Long Island airstrip where Charles Lindbergh took off on his historic transatlantic flight. But when you walk in, it doesn't take long to realize this isn't your mother's mall—or even your own high school mall.

When you enter by the Nordstrom, your attention is drawn not to one of those smudgy, indecipherable "You Are Here" map directories, but to sleek screens whose messages nudge you to shop the mall's trendier fashion brands. Those same screens pepper you with reminders about an app-based loyalty program, which could help you snag the most coveted item on any shopper's list—a premium reserved-parking spot.

As you pass leather couches flanked by charging stations for cell phones, you'll see the refurbished food court—sorry, make that "dining district"—with eateries that eschew plastic plates and utensils for actual silverware, and furniture that says hipster bistro rather than cafeteria remainder sale. Roosevelt Field has significantly expanded its full-service, sit-down restaurant offerings as part of a $300 million overhaul. And throughout the mall, tasteful signage steers you to the new luxury wing, opened in February 2016 and anchored by (and named for) a state-of-the-art Neiman Marcus store.

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Hundreds of shopping centers across the U.S. are facing obsolescence, abandoned by shoppers who are going online or getting choosier about where they shop. But Roosevelt Field shows that there is still a lot of life in that American mainstay, the suburban mall. The 2.4-million-square-foot center generates about $1,000 in annual retail sales per square foot, according to real estate research firm Green Street Advisors—more than twice the national average for shopping centers. And in its combination of novelty, technology, and customer pampering, Roosevelt Field embodies the strategy that has helped its owner, Simon Property Group, navigate retail's crisis to stay on top of the mall world.

Simon, a real estate giant with headquarters in Indianapolis, has relied on aggressive dealmaking and savvy property management to bolster its position as the largest U.S. operator and developer of shopping malls. Its U.S. portfolio includes 108 malls, most of them high-grossers like Roosevelt Field, and 72 discount outlet centers. That adds up to real estate worth $110 billion. Some of the biggest and most luxurious malls in the country—including the Forum Shops at Caesars Palace in Las Vegas, King of Prussia outside Philadelphia, and the huge high-end New York outlet mall Woodbury Common—are bastions of the Simon empire. (The company also operates malls abroad and owns 20% of Klépierre, a Paris-based mall operator with properties across Europe.)

The King of Prussia mall, in the suburbs of Philadelphia, is the second-largest in the U.S. Simon recently added 50 stores to the mall as part of a $200 million renovation.

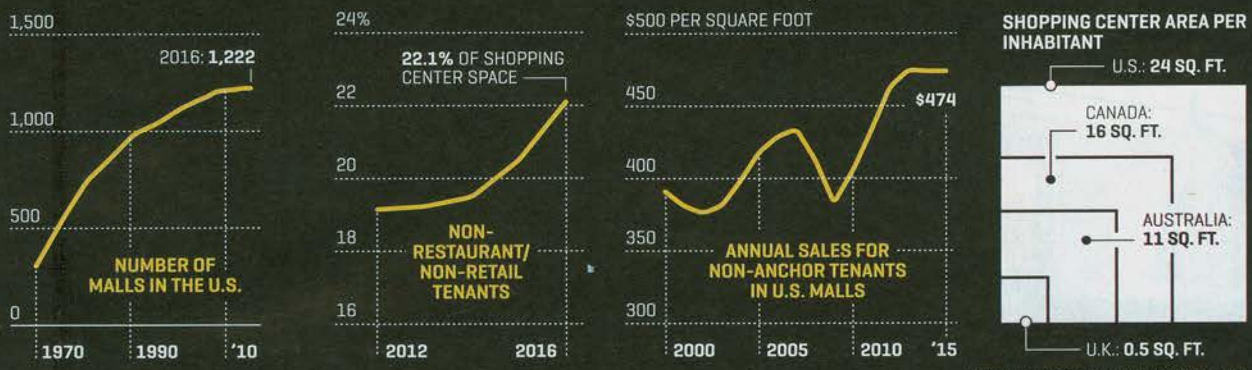
The company generated $5.3 billion in revenue in 2015, with an enviable 37% profit margin. Simon's revenue has grown every year since the Great Recession ended, and its market cap has risen fivefold since the end of 2008, to $57 billion. The key to that success: constantly adapting to figure out what sells, at a time when many of the businesses that fill its malls—especially department stores and apparel retailers—aren't selling.

Along with a handful of other mall operators, including General Growth Properties (GGP), Taubman Centers, and Macerich, Simon dominates the so-called A-malls, those with the highest sales per square foot. To win in that category, Simon has been diligent about staying ahead of trends and modernizing its centers, and quick to replace struggling brands with those on the upswing. "We've cleaned a lot of stuff out, and we're

KING OF PRUSSIA MALL COURTESY OF SIMON

Stuck at the Mall

The U.S. has too many shopping centers, and sales are flatlining as shoppers go digital. Simon and other developers hope to shore up mall traffic with non-retail attractions like gyms and gourmet groceries.



SOURCE: COSTAR REALTY INFORMATION / ICSC

very sensitive to creating the environment where those retailers can do the most business," CEO David Simon told investors in July. (The press-averse Simon declined to be interviewed for this article.)

Still, the company and its investors are grappling with the reality that being the No. 1 mall owner may soon be analogous to reigning as queen of the compact disc. Simon's shares, which reached an all-time high of $229 in July, had fallen more than 21% by mid-November, reflecting concerns about how many of Simon's tenants are struggling. Two of Simon's three top tenants, Gap Inc. and Abercrombie & Fitch, have closed hundreds of stores in the past two years and have announced more to come; anchor department stores are shutting their spaces too. Green Street Advisors has predicted that 15% of U.S. malls could be in jeopardy in the next decade, the inevitable unwinding of years of overbuilding.

And so Simon cannot afford to rest on its laurels. The company has another $1.9 billion worth of renovations and new projects in the pipeline: Some 100 miles to the southwest of Roosevelt Field, Simon recently wrapped up a $200 million overhaul and expansion of the King of Prussia mall—adding space for 50 more stores in what's already the second-largest mall in the U.S.

> "REINVESTING IS WHAT SEPARATES A GOOD LANDLORD FROM A NOT-SO-GOOD LANDLORD."
> **Edward Mui**
> Morningstar

Simon is also at the vanguard of rethinking what kind of store fits in a mall. Many of Simon's "boxes," as the spaces are called in commercial real estate parlance, are being repurposed for occupants like Cheesecake Factory and fast-fashion retailer Primark. Simon has added 200 restaurants in its properties in the past five years. Other non-retail spaces that people want, like movie theaters and health clubs, are also proliferating.

Such reinventions can be expensive, but Simon is gambling they will pay off in future income increases—potentially the only way it can keep growing in a country that has more malls than it needs. "They're always on their toes, reinvesting in their properties for that extra edge," says Morningstar analyst Edward Mui. "It's what separates a good landlord from a not-so-good landlord."

FOR THE MOMENT, business looks good for the industry's good landlords—Simon in particular. The company's U.S. malls and outlets are 96.3% full (about four percentage points above the industry average). Sales per square foot are $604, a slight drop from a year ago but a full 27% higher than the industry average of $474, according to the International Council of Shopping Centers (ICSC), the industry's trade organization.

But even the industry's biggest cheerleaders acknowledge the risk posed by the wave of store closings. The five top department-store operators whose branches anchor so many malls—Macy's, Penney, Kohl's, Dillard's, and Sears Holdings—have together closed some 750 stores since 2013, or 20% of their fleets, and analysts think the Honey, I Shrunk the Retailer trend will continue. A spate of bankruptcies among mall stalwarts in the past two years, including Aéropostale, Wet Seal, Pacific Sunwear, and American Apparel, has also pressured landlords. And even highly successful stores like Nordstrom, Neiman Marcus, and Hudson's Bay's Saks Fifth Avenue are hurting these days.

All those closures effectively put more brick-and-mortar retail space into the marketplace, potentially undercutting mall operators' ability to raise rents. Analysts generally believe America is "overmalled" to begin with: There are 2,353 square feet of space of shopping centers in the U.S. for every 100 Americans, compared with 1,636 in Canada and 458 in Britain, according to CoStar Realty Information. From the 1960s through the 2000s, developers built hundreds of malls per decade. But since 2010, only nine new ones have been built (and many of those have been one-of-a-kind luxury projects, like the recently opened Westfield mall at New York's World Trade Center). Green Street forecasts that rents will grow only a modest 1.5% a year through 2019.

And all this, of course, plays out against the backdrop of changing consumer habits. Online shopping has siphoned many consumers away from bricks and mortar. And smartphones and shopping apps have transformed mall-going for those who still show up. "There is no need to window-shop or go to 12 different stores if they've already researched online," says D.J. Busch, a senior real estate analyst at Green Street. All these factors make a day at the mall especially unappealing when the stores look as though they haven't had a makeover since L.B.J. was in the White House. The upshot: A market able to support five malls a few years ago might need only three now.

Simon Property, so far, has rolled with these punches. Bankruptcies have always been a fact of life in retail. David Simon is fond of pointing out that only three of his 10 top tenants from 1993, when Simon Property went public, still exist in their current form. But he and his best-performing competitors have moved quickly to upgrade themselves. After the recession, Simon and GGP gradually spun off or sold most of their malls that had weaker overall sales, while ramping up investments in their better ones. (GGP still owns a higher proportion of relatively weak malls than Simon does.) One example of how that has paid off: Of the 100 or so stores Macy's said this summer it would close by the spring of 2017, only one is at a Simon-owned mall.

For all their problems, department stores are still essential to mall operators: GGP says that 70% of its mall customers visit a department store. So Simon has been proactive in assisting anchor tenants like Neiman Marcus. At Roosevelt Field, the company not only named its new luxury section the "Neiman Marcus Wing" but also began holding glitzy occasions aimed at bringing in shoppers, like influencer powwows hosted by leading fashion bloggers and stylists. "They've stepped up the quality of their events," says Neiman CEO Karen Katz. "They've done such a great job of promoting Neiman Marcus in the Simon branding within the mall."

And if big stores close anyway? Simon has a strategy for that too. Over the past 15 years, Simon has redeployed 90 vacant department stores in order to gut them and remodel them to accommodate other retailers and businesses that are potentially more profitable. "The industry's been able to absorb the store closings by repurposing that property for things that drive higher foot traffic," says ICSC CEO Tom McGee—including for those very un-mall-like grocery stores, spin-class fitness shops, and entertainment centers.

THERE IS IRONY in Simon Property's having to reinvent itself to adapt to a new retail world—because the company essentially invented the old one.

Back in 1960, Melvin Simon, the company's Bronx-born founder and David's father, teamed up with his brothers Herb and Fred, forming a trio of *machers* who came to be known as the "Marx Brothers of Malls." The brothers pioneered the concept of a shopping center being anchored by a department store. Before that, department stores tended to be in city centers at stand-alone locations. The Simons' idea was to leverage the shopper traffic of department stores, which at the time were the apex of the retail food chain, within enclosed malls where those giants were the marquee attractions. To make that happen, they charged department stores a pittance while charging other tenants much more. Even today the typical anchor store pays around $4 per square foot in annual rent; the average non-anchor tenant paid $42.22 per square foot a year as of the third quarter of 2016, according to real estate analytics firm Reis.

The REIT Rundown

Investing in shopping malls almost always means buying a real estate investment trust [REIT].

Why Investors Like REITs
Companies organized as REITs get favorable tax treatment, in return for which they must distribute at least 90% of taxable income as a dividend. That makes them attractive to investors seeking bigger income streams.

Why Landlords Love Them
The REIT structure allows Simon Property Group and other landlords to raise capital on public markets, making them less reliant on bank loans. That's a big advantage for developers that typically have billions of dollars of projects in the pipeline.

Why They're Both a Little Nervous
Many economists expect that interest rates will rise in 2017. That would make REITs less attractive to investors relative to bonds, while raising the cost of their debts—cutting into profits.

The anchor model took hold, and over the ensuing decades, Melvin Simon & Associates grew into a shopping center behemoth, becoming the largest real estate investment trust to list shares on the stock market with its 1993 IPO. Three years later Simon mushroomed when it merged with rival DeBartolo Realty. As malls' organic growth began to wane, dealmaking prowess became an essential skill for anyone hoping to move into the corner office.

Enter David Simon, Melvin's eldest son. In 1990, Melvin asked David to come home to Indianapolis from New York, where he was an M&A banker for the renowned boutique investment firm Wasserstein Perella & Co.; David became CEO in 1995. The survival skills he learned in the rough-and-tumble Wall Street milieu, mixed with his familial temperament, made David a fearsome negotiator. "Even though I was born and raised in the Midwest, when you have a father from New York, it kind of rubs off on you in terms of your aggressiveness," Simon told a group of Wharton School students in 2009.

That aggressiveness helped Simon land a succession of deals in the late 1990s that transformed Simon into the first truly national mall developer, in what had been a localized, fragmented market. In 1997, Simon bought the Retail Property Trust for $1.2 billion in a hostile takeover, acquiring 10 prestigious properties, including the high-end Westchester in White Plains, N.Y. A year later Simon snagged Corporate Property Investors (CPI) for $5.9 billion, getting its hands on prized malls like Roosevelt Field. And in 2004 it bought Chelsea Property Group, a $3.5 billion deal that instantly turned Simon into the largest operator of high-end outlet malls—including Woodbury Common in New York's Hudson Valley, which rakes in $1.3 billion a year in sales by some estimates.

At the same time, Simon was also proactive in ditching less productive malls. In today's mall economy, "there is much more of a split between the winners and losers," says Barbara Denham, an economist with Reis. In 2014, Simon spun off most of its so-called B- and C-malls—those with lower sales per square foot—into a new REIT, called Washington Prime Group. That deal left Simon with a higher proportion of the most productive malls than most other REITs—and a nice supply of cash to keep those malls updated.

Still, Simon Property and its competitors are now at a turning point. After years of consolidation, there's not much more room to grow via M&A. Over the years Simon has tried and failed to acquire its biggest rivals, including GGP, Taubman, and Macerich (in 2015). Now Simon finds itself in an era of experimental partnerships. In September, for example, in its first such move ever, Simon joined with GGP and other investors to buy Aéropostale out of bankruptcy and keep it afloat.

Mall operators are also trying to master shopping tech before it masters them. Simon created a venture capital arm in 2014 that has invested, along with partners such as GGP, in e-commerce companies like Deliv and Shopkick, a shopping loyalty app. Simon pumped more than $20 million over the past two years into small tech companies, among them a dress-rental service for weddings called Union Station, and Fashion Project, a marketplace for deeply discounted clothes. Talking with *Fortune* about one of his company's most in-demand app features, GGP CEO Sandeep Mathrani was both upbeat and sardonic about the technology. "We are spending a lot of money to guide you to a parking space," he says.

> "[RETAILERS] CHASED THE HOLY GRAIL OF INTERNET SALES, TO THE DETRIMENT OF THEIR PHYSICAL PRODUCT."
> **David Simon, CEO**

IF YOU WANT to get a rise out of David Simon, tell him mall traffic is declining.

It's easy to see why that narrative has taken hold, given that one retail CEO after the next has bemoaned declining mall traffic to explain weak sales. (It's as popular as blaming the weather or, this fall, the presidential election.) But Simon has been pushing back

David Simon, CEO of Simon Property Group (opposite); above, Roosevelt Field Mall in Garden City, N.Y., one of dozens of older malls that Simon has overhauled in the past two decades.

© ROOSEVELT FIELD MALL COURTESY OF SIMON

against retailer kvetching for years. In 2012, at an industry event hosted by retail-focused investment bank Financo, J.Crew CEO Mickey Drexler complained that the intense smell of popcorn at one mall was keeping customers away from a J.Crew store. "I'll take all your space back right now," Simon shot back.

In fact, Simon says, traffic isn't declining at the A-malls, and independent statistics back him up on that. "They don't keep track of the mall traffic. We keep track of the mall traffic," Simon told a conference in June, with some pique. "I mean, these are my clients, but I do think they need to be crisper in how they describe it." At other times he has laid much of the blame squarely at the feet of the retailers themselves. "They've chased the holy grail of Internet sales, to the detriment of what they should be doing with their physical product," he told Wall Street analysts in October.

Still, even if retailers revive their brick-and-mortar strategies, the diminishment of department stores' hegemony means the average U.S. mall will look a lot different in five years. In fact it could be back to the future. Until the 1970s, U.S. malls had a much broader mix of tenants: It was standard for a shopping center to have a supermarket, a drugstore, and services like dry cleaning and shoe repair. That could well become the norm again, as it is in Canada and Europe. There are still 443 department stores at Simon malls, but the company is already heading in the direction of diversification: At the College Mall in Bloomington, Ind., one of the company's original malls, Simon recently demolished a defunct Sears, and it is putting a Whole Foods 365 discount grocery, an Ulta, and other smaller stores in the same space.

As more department stores downsize their fleets, smaller retailers could end up playing the anchor role—in other words, getting a big rent break from operators like Simon because they bring in so many shoppers. By one estimate, hosting an Apple store lifts a mall's overall sales by 10%. Presently, 55 Simon malls have an Apple, while 15 have a Tesla store, another draw for the well-heeled.

Green Street's Busch says it's conceivable that landlords could charge a fast-growing retailer like T.J. Maxx or Ulta Beauty a rent similar to what they pay at strip malls, typically $8 to $15 per square foot per year—not as good a deal as the department stores get, but still a worthy tradeoff for the traffic they draw. Like many analysts, Busch sees the current department-store wreckage as an opportunity: "It could be a catalyst for where the mall should have been going all along."

There are plenty of up-and-coming retailers in the wings to pick up other slack, including retailers that started out exclusively online. On GGP's most recent quarterly earnings call, Mathrani reminded analysts that eyewear retailer Warby Parker could grow to have 1,000 stores, while web-based men's clothier Bonobos has said it would get to 100. Amazon reportedly has plans for hundreds of bookstores. "There's going to be plenty of opportunity for retailers that want to expand to find locations," says Mark Hunter, managing director of retail asset services at commercial real estate consultancy CBRE.

The shift away from traditional apparel retail is already making itself felt. Food and beverage, for example, now makes up 9% of leasing space in U.S. malls, according to ICSC, and industry executives expect that to grow. Adapting to trends like these costs money and is likely to pinch REIT profits. But with their traditional tenants languishing, they have little choice.

And the continual churn of reinvention at Simon's malls shows that it isn't living in the department-store past. At an investor conference in June, David Simon predicted, "You're going to see, at the end of the day, the better malls will get bigger and better and more diverse, and some of the other fringe retail will suffer." It'll be his job to keep the family business as far as possible from that fringe. F

Greg Abel, head of Berkshire Hathaway Energy, atop one of the company's wind turbines in western Iowa. Abel has spearheaded the company's push into wind energy.

Warren Buffett's All-In Clean-Energy Bet

Wind power is a booming business, and Berkshire Hathaway is one of its biggest players. But Donald Trump may strip away some of renewable energy's major financial advantages. Will Buffett's big investment get blown off course?

BY STEPHEN GANDEL AND KATIE FEHRENBACHER

PHOTOGRAPH BY **RYAN DONNELL**

BILL NOSBISCH has four cats, two horses, a dog, and way too many corny jokes. "Why can't the tissue stop dancing?" he asks while waiting for food at his wife's restaurant—the Chuckwagon in Adair, Iowa, which was just ranked the No. 1 burger joint in the state by the Iowa Cattlemen's Association. "It's got a little boogie in it." That one has made billionaire Warren Buffett laugh.

Nosbisch lives outside Adair, about halfway between Des Moines and Omaha. The town, with just under 800 people, is too crowded for him; he lives on eight acres of Iowa farmland, though he's not a farmer in the traditional sense. Eight years ago, Nosbisch was out of work. His job, running the Des Moines printing plant for newspaper giant Dow Jones, was swept away by the winds of change.

Shortly after he lost his job, a former colleague asked Nosbisch if he would be interested in running a wind farm. Nosbisch asked where. The colleague answered, "All around you." Within a year the landscape outside Nosbisch's front door had sprouted a forest of wind turbines, and Nosbisch had a new career as a wind farmer and a new employer—Berkshire Hathaway.

These days Nosbisch, now the manager for engineering and asset management in wind generation at MidAmerican Energy, Berkshire's Iowa utility, hops in his car for an eight-minute daily commute (he has never hit traffic). In the early morning light the 148-foot blades of many of the dozens of turbines that he passes on the way to work are already turning above him.

His office sits inside a structure that looks like a construction-site trailer. From there, Nosbisch can monitor the output of the area's three wind farms, Eclipse, Adair, and Morning Light, and check in on other operators. If there is a problem, it's a short drive to one of 170 turbines on the site. And then a 15-minute climb up 263 rungs to the top to see what repairs need to be made. Far below him is a green and honey-colored landscape that meets a usually blue sky (engineers are not allowed to climb the turbines in bad weather). Around him are the other winged machines that are now his flock. He still marvels at the view, every time.

Renewable energy is on the rise in America. Most of the buzz, at least among consumers, has been about solar, in rooftop panel form and, more recently, in Silicon Valley dreamer Elon Musk's plan to make solar shingles. But in Iowa you literally see clean energy on the horizon. Where silos used to top the landscape, they are now towered over by wind turbines.

> “
>
> PRESIDENT-ELECT TRUMP HAS CALLED GLOBAL WARMING A HOAX AND HAS SAID HE DOESN'T WANT TO SUBSIDIZE WIND POWER. BUT BERKSHIRE HATHAWAY IS FULLY COMMITTED TO REMAKING THE LANDSCAPE.

What isn't well known, in Iowa or elsewhere, is that one of the biggest winds at green energy's back is coming from the world's second-richest man. Buffett and his holding company, Berkshire Hathaway, have spent more than $17 billion on renewable energy since 2004. Two years ago at the Edison Electric Institute's annual power conference Buffett pledged to nearly double that. This year Berkshire is on track to spend almost $1 billion on its Iowa wind facilities alone—though Buffett admits he himself has never done more than drive past a wind farm. In an interview in November, Buffett told *Fortune*, "On the subject of hamburgers, I am an expert. Wind, I know less."

Many Berkshire loyalists could say the same about the company's renewable-energy efforts. Few Wall Street analysts have focused on it, even though energy accounted for 16% of the company's operating income in 2015, up from 11% in 2013. The biggest generator of that income is PacificCorp, Berkshire's West Coast utility. But the fastest-growing portion of Berkshire's energy business is MidAmerican, which generated $524 million in operating income in the first nine months of 2016, up $102 million from the same period a year ago. A third of that came from wind.

As Berkshire's wind capacity has grown, so has the profile of Greg Abel, CEO of the company's energy division, adding a wrinkle to one of the biggest succession mysteries in corporate America. In 2015, Berkshire vice chairman Charlie Munger, Buffett's longtime partner, said that either Abel, 54, or a colleague, executive Ajit Jain, would make a worthy replacement for Buffett. And Abel is certainly being paid to stay. In 2015, he earned $1 million in salary, but also collected an $11.5 million performance bonus, and a one-time, $28 million payment from a long-term compensation plan.

Environmentalists don't typically view Buffett as a climate hero. His utilities have been criticized for relying on coal, and at Berkshire's annual meeting last May he had to fend off a shareholder effort related to climate change. (A story on conservative website Daily Caller was headlined "Warren Buffett Tells Greenie Crusaders to Buzz Off.")

Nevertheless, before long, Berkshire Hathaway—owner of everything from Dairy Queen Blizzards to Brooks running shoes to Benjamin Moore paint—will likely also be the largest producer of wind energy in America. In early

2016, Berkshire announced its largest project yet, a 2,000-megawatt wind complex in Iowa. Construction on the $3.6 billion project begins next year. When it's done, Berkshire will have the capacity to produce 11,139 megawatts of green energy an hour, enough to power nearly eight Las Vegases or 24 Times Squares or 7.3 million homes, completely by wind.

If Buffett's turbines are a potentially big boon for the environment, it's not clear they have delivered financially for Berkshire. By one analysis, Berkshire's energy business has the lowest returns of any division of the company. "Greg [Abel] has hit the ball," says one longtime Berkshire investor who declined to be named. "But he hasn't knocked the cover off it." What's more, Berkshire's renewable investments have largely been dependent on the infrastructure—transmission and generation grid—that has traditionally been used by utilities. That means Berkshire could find its energy investments on the wrong side of innovation.

Perhaps most important, a huge part of Berkshire's wind-energy play is pegged to tax credits, of which it recognized $336 million in 2016. The government is set to phase those out over the next decade, and that may accelerate under President-elect Trump, who has called global warming a hoax and who has said he doesn't want to subsidize wind power. But Berkshire Hathaway is fully committed to remaking the landscape—figuratively in energy, and literally in Iowa.

GIVEN WHERE HE LIVES—in Omaha, just across the Iowa-Nebraska border—it's not too much of a surprise that Buffett has fallen in love with wind energy. Iowa is the Saudi Arabia of wind. At the eastern edge of the Great Plains, Iowa has strong winds that sweep across its northern and western regions. The state's chief executive, Terry Branstad—currently the longest-serving governor in the U.S., with 21 years under his belt—has been pushing wind energy, and it has paid off. About 35% of Iowa's electricity will be generated by wind in 2016. Over 7,000 Iowans like Bill Nosbisch are employed doing jobs like maintaining wind turbines, monitoring wind-farm systems, and making wind blades. All of Berkshire utility MidAmerican's turbines are in Iowa, and its new 2,000-megawatt facility will be the largest economic development project in the state's history.

Along the way, power in Iowa has become among the cheapest in the nation. For one kilowatt-hour (enough to power 10 household lightbulbs for one hour) in Des Moines, MidAmerican charges corporate customers just under 5¢, well below the average nationwide. The result: An increasing number of electricity-hungry companies, particularly tech firms, are opening facilities in the state. Facebook, Google, and Microsoft have all opened data centers in Iowa in the past few years. "These companies are all about sustainability," says John Boyd, who consults with companies on corporate locations. "Wind power is a big reason they are moving to Iowa."

Iowa is perhaps the most dramatic example of a nationwide trend. The amount of wind energy in the U.S. tripled between 2008 and 2013, while its average cost dropped by a third. Today 75 gigawatts are being produced by 49,000 wind turbines across the country, according to the American Wind Energy Association. The Department of Energy estimates wind could generate 10% of America's electricity by 2020, up from about 7% by the end of 2016. And according to research firm Bloomberg New Energy Finance, in a number of states it is now less expensive to generate electricity from wind than from either coal or natural gas.

Microsoft, which has contracts to purchase a total capacity of 500 megawatts of wind energy to power U.S. data centers, has seen costs drop steadily, says director of energy strategy Brian Janous. And analysts predict wind costs could come down even more, thanks in part to software and computing that make converting wind to electricity more efficient. The biggest cost reductions "will come from 'soft engineering,' like digitalization, connectivity, data, software, and automation of operations," says Bloomberg New Energy Finance analyst Daniel Shurey.

That said, there may be limits to how far wind power can scale up in the U.S. Few states can rely on the ample gusts that Iowa gets, for example. It's difficult to find open space for sprawling turbine farms in places where land is more expensive and population dense, and state tax incentives matter, too. Today there are almost no wind farms in the Southeast and very few in the Northeast.

The biggest wild card in wind's future may be federal tax credits. A utility like Berkshire's MidAmerican can lower its tax liability through production credits for 10 years for each project. The federal government offers a tax credit of 2.3¢ for every kilowatt-hour produced. MidAmerican's new Iowa project alone, once finished, will generate over $29 million a year in tax credits for Berkshire. And Berkshire can use its credits for its

Green Power's Dueling Billionaires

Two of renewable energy's biggest backers have often wound up as adversaries.

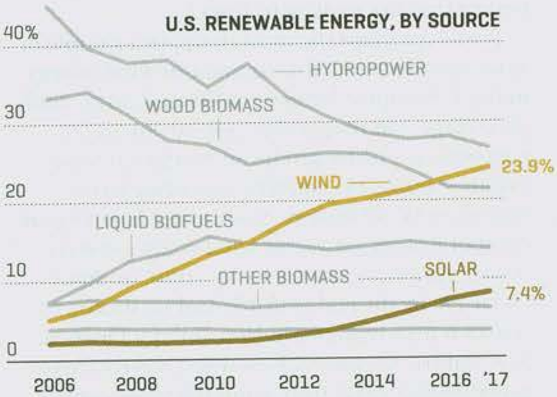
Warren Buffett
The Berkshire Hathaway chief has invested in solar and wind power at utility scale, produced at large plants connected to the power grid. Critics say he has used that scale to crowd out rivals.

Elon Musk
The Tesla founder and solar investor favors a "distributed network" model, in which homeowners and companies generate their own energy. That threatens utility giants' revenue.

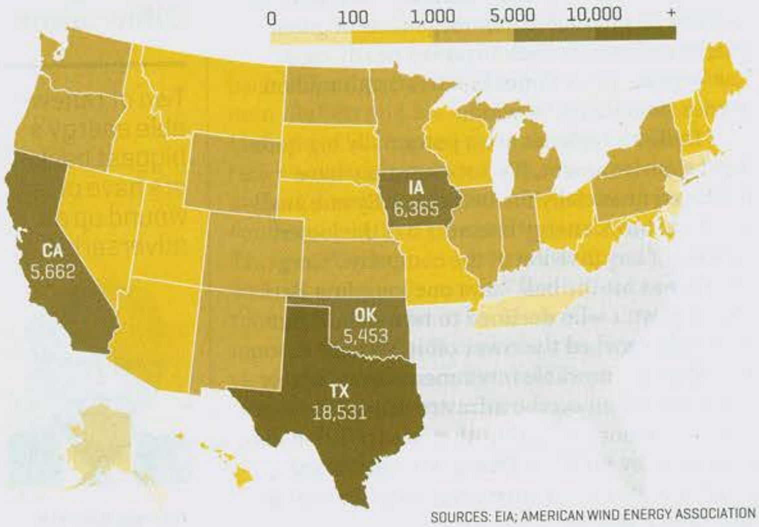
THE WIND-POWERED REPUBLIC

Federal tax incentives and ample open spaces have helped make wind power one of the dominant sources of clean energy in the U.S. But climate conditions, population density, and less friendly state policies mean it's still rare in some regions.

U.S. RENEWABLE ENERGY, BY SOURCE



U.S. INSTALLED WIND-POWER CAPACITY (MEGAWATTS)



SOURCES: EIA; AMERICAN WIND ENERGY ASSOCIATION

entire company, which made $28 billion in operating income in 2015. Buffett freely admits that without the tax credit his desire to get into wind energy would have been greatly diminished.

The federal credit, first enacted in the 1990s and extended half a dozen times over the years, has helped trigger a long boom in wind energy. Conversely, its absence tends to make utilities and their investors nervous, and Congress's tendency to reauthorize it for as little as a year at a time just aggravates that angst.

As of now, wind credits are set to begin phasing out in 2017—similar credits for solar will do the same starting in 2019—and President-elect Trump may announce plans to speed up the process. In an interview with the *New York Times* in November, Trump said of wind-power projects, "We're subsidizing windmills all over this country [and] for the most part they don't work ... I wouldn't want to subsidize it." Trump's closest energy advisers, like Carl Icahn and Harold Hamm (who each own oil companies), have been calling for an end to subsidies. But even the elimination of the credits could give the industry some clarity—and a chance to prove whether wind can be economical on its own.

BUFFETT ISN'T the only billionaire betting on a particular future for renewable energy. And the path to that future hasn't been frictionless.

Berkshire and its subsidiary energy companies have largely focused on what the industry calls "centralized" clean energy, in both wind and solar. The idea is that utilities generate large amounts of clean power in remote, large power plants in much the same way that natural gas, coal, and nuclear power are generated today. This plays to Berkshire's other strengths: Along with the biggest utilities in Iowa and Nevada, Berkshire owns a ton of so-called power transmission assets—the lines that carry power from the plant to the user. Its wind turbines and solar farms hook right into the grid.

It's been a safe bet so far—utility solar and wind farms represent the bulk of the clean power in the U.S. But an alternative vision has been gathering momentum, and it's one backed by another billionaire—Tesla and SpaceX CEO Elon Musk. Musk has mostly favored so-called distributed networks—in which homeowners and companies put solar panels on their own rooftops, becoming their own power providers and sending excess energy back to the grid. That's a vision that plays to the strengths of Musk—a disrupter by nature, an upstart, and an energy outsider—and he has been betting on it for a while. Musk helped launch solar-panel installer SolarCity over a decade ago, and his cousins Lyndon and Peter Rive have since built the company into the largest solar installer in the U.S., with 300,000 solar customers. Tesla recently bought SolarCity for $2.6 billion.

Of course, clean energy isn't a zero-sum game. Solar and wind are likely to coexist, with each having advantages in different parts of the country. But the distributed-power model that Musk favors is a financial threat to utilities like the ones Berkshire owns. And Buffett and Musk have butted heads, most notably in Nevada, where Berkshire-owned NV Energy provides utility-scale solar energy and where SolarCity was previously selling solar roofs. In 2015, Nevada's public utility commission changed the favorable rates that were crucial for the rooftop solar industry in the state. Solar backers accused the commission of being in the pocket of NV Energy lobbyists, an accusation the commission denied. Buffett has argued that NV Energy generates power from utility-scale solar farms far more cheaply than rooftop solar panels can (which is true) and that nonsolar customers in Nevada were subsidizing rooftop solar customers, which SolarCity and others dispute.

Nevada isn't the only front where Musk and Buffett have come into competition. Many proponents of clean energy expect that if or when batteries get cheaper, they'll play a crucial role in clean energy, storing solar and wind power for days when the sun isn't out or the wind isn't blowing. The average wind turbine rotates fast enough to produce energy only about a third of the time, and solar cells can similarly underperform in cloudy conditions.

Musk's Tesla, which has been packaging batteries to power its cars for years, more recently started selling those batteries to utilities for the power grid and for companies and homeowners to use for storage. Working with Panasonic, Tesla is building a huge battery factory outside Reno—the Gigafactory—which eventually will be able to make 35 gigawatt-hours of batteries per year.

Buffett has made a sizable bet on energy storage as well. In 2008, MidAmerican bought 10% of Chinese electric-car and battery maker BYD for $230 million. In 2015, BYD had revenue of $11.3 billion, and today MidAmerican's shares are worth $1.35 billion. BYD already has 295 megawatts of batteries plugged into the power grid globally and is currently making 11 gigawatt-hours' worth of batteries a year for both electric cars and the power grid. The company plans to boost that battery production by another four gigawatt-hours before the end of 2016.

Still, while Tesla's and BYD's batteries are already capable of storing wind or solar power, they need to be cheaper to be deployed more widely. Today they're mostly being bought for solar farms in regions where other sources of power are very expensive—on the Hawaiian island of Kauai, for example, and the island of Ta'u in American Samoa. Installing enough batteries to make most electrical grids fully reliant on wind power or even to take older natural-gas or coal plants off-line isn't cost effective yet in many regions. For now, in the clean-energy world, Buffett's follow-the-money pragmatism has the upper hand.

> “WE'VE DONE [WIND] WITHOUT IMPACTING CUSTOMERS' RATES, AND WE'VE DONE IT KNOWING IT'S THE RIGHT THING TO DO.”
>
> **Greg Abel**
> CEO, Berkshire Hathaway Energy

BERKSHIRE HATHAWAY ENERGY has been able to tap into wind tax credits like almost no other company because of its sheer size and integration. And for that, Buffett has Greg Abel to thank.

If Abel ends up one day being the CEO of Berkshire, it will go down as one of the best "acqui-hires" in history. Abel joined Berkshire in 2000, when it acquired MidAmerican, where he was chief executive. Abel has grown Berkshire's energy division from just under $6 billion in sales in 2003 to $17.8 billion in annual sales, according to its most recent financial filings. While Abel doesn't quite get sole credit for coming up with the idea to launch Berkshire's wind-power operations—departed Berkshire executive David Sokol and Berkshire board member and billionaire Walter Scott Jr. also played roles—he certainly gets credit for executing the idea. Buffett praises Abel for being able to invest billions into wind energy without having to raise prices on consumers. "He never fails to deliver on anything he commits himself to," says Buffett. "Our utility 10 or 20 years from now is going to be a whole lot bigger than it is today."

After graduating from the University of Alberta, Abel got his start as an accountant. And he still acts like it. People who have worked with Abel say he is both mild-mannered and micro-detail-oriented. Back in 2002 Berkshire bought a pipeline from troubled energy company Enron at a bargain price. But the pipeline had been neglected and posed safety problems. Abel, then co-CEO of Berkshire's energy division, took on the pipeline-repair project himself and had it back up to code in a matter of months. "How could he not come to our attention? I couldn't believe what he did," says Charlie Munger. "He's the best utility executive in the United States."

If he did rise to the top at Berkshire, Abel would offer a contrast to Buffett. Buffett has a reputation for leaving his managers alone and keeping intact the executive teams of the companies he acquires. Abel, though low-key, is said to be very hands-on in everything he does. And he has a history of jettisoning most managers at the companies that his division has acquired. When CalEnergy, his employer at the time, bought a U.K. power producer in the mid-1990s, Abel moved his family overseas to run the newly acquired division himself.

Abel, the nephew of hockey legend Sid Abel, has four kids. He won a hockey title playing on an amateur team after college, and he remains a very good golfer, with a number of holes in one, including at least one on a pro-tour-level course. Compared with Buffett, Abel is relatively private. Berkshire cooperated with this article, but Abel was willing to do only one interview. At 38 minutes, with questions still coming, Abel was out the door. When asked for a follow-up, Abel responded through a spokesperson, "What else would you have to ask?"

He's most effusive when he's talking about his energy business and its physical legacy. "When I look at the wind farms and all of these huge turbines, I'm just so proud of what our team has accomplished," says Abel. "And we've done it with passion, and we've done it without impacting our customers' rates, and we've done it knowing it's the right thing to do." On Berkshire succession, all Abel would say, with a laugh, is that if he were on a boat with Buffett and Jain and it capsized, he would try to save them both.

BUFFETT IS 86, but there's no sign that he's going anywhere soon. That means he's around to weather criticism from some who are questioning his love affair with wind power. Berkshire devoted 37% of its capital expenditures budget to its energy division last year. That made 2015 the third year in a row that Buffett invested more in Berkshire's energy business than in any other division.

Yet at least by one measure, Berkshire's investments in its energy business are lagging. For instance, over the past three years Berkshire had an average return of 8.2% on the cash it invested in its energy business. That's certainly a respectable return, but it's lower than the 11.7% return Berkshire got on its investments in its railroad business, Burlington Northern Santa Fe (BNSF). Or the 13.4% return it got from its retailing and services businesses, including See's Candy and ice cream giant Dairy Queen. What's more, by another measure of its business—so-called free cash flow, which factors in depreciation and interest costs on borrowing—Berkshire Hathaway Energy has lost cash every year since 2013, including $574 million in 2015 alone.

"You always make a leap of faith when it comes to investing in Warren Buffett," says Jack Ciesielski, an accounting expert and author of the *Accounting Observer* newsletter, who has recently analyzed Berkshire's financials. "But when it comes to the energy investments, because the returns haven't been as good as the rest of his businesses, the leap is harder to make."

"YOU ALWAYS MAKE A LEAP OF FAITH WHEN IT COMES TO INVESTING IN WARREN BUFFETT."
Jack Ciesielski
Accounting Observer

Buffett refutes the grimness of the numbers. First of all, he points out, they don't factor in the tax credits Buffett gets from his wind business, which are significant. On top of the credits for the wind power it's generating, Berkshire also gets long-term tax benefits from the depreciation of the billions of dollars' worth of capital expenditures it has put into building out its wind operations.

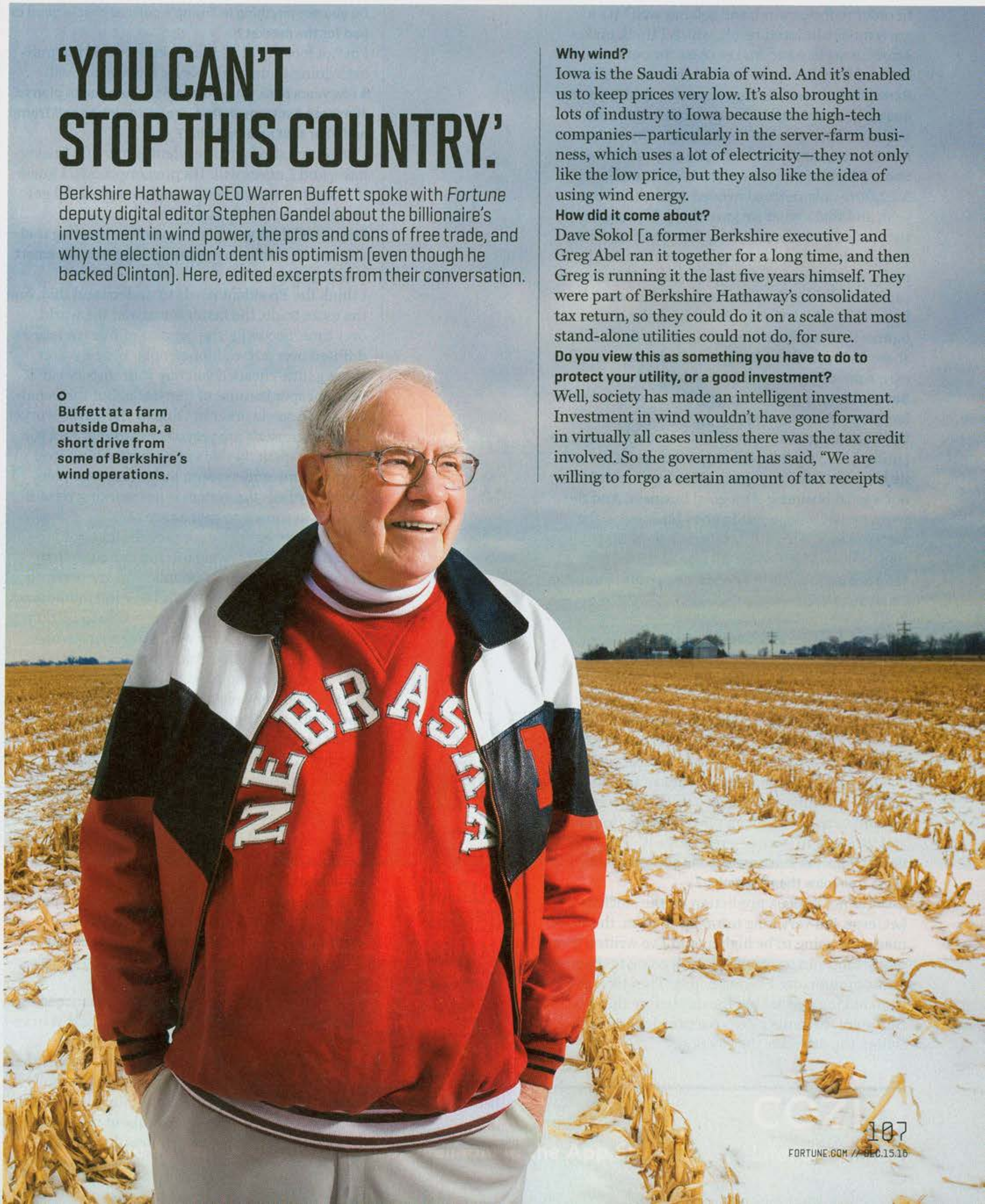
What's more, as Buffett points out, he's a long-term investor, so looking at the year-to-year investment and return on a given business doesn't make a lot of sense. He prefers to compare what he paid for businesses and the earnings they are now generating. On that score, Berkshire Hathaway Energy has been a windfall. Berkshire paid just over $2 billion for MidAmerican. In 2016 alone, its energy business is on track to earn around $3 billion before taxes. BNSF, on the other hand, cost Berkshire $34 billion, and it has brought in $5.9 billion in earnings in the past 12 months. "It's not a great business; it's a good business," Buffett says of his utilities. "And the more money we can put in good businesses, the better I like it. Particularly when they have good management."

Either way, Buffett is moving ahead with green energy. He says that's not just because it is the right thing to do from an environmental perspective, but because, as always, he's focused on getting the biggest return for his shareholders. Berkshire has pledged to reduce coal-power generation by 76% in its Nevada utility company. The company has spent more than $4 billion on building out its solar-power generation. And it has pledged to make Iowa 100% wind powered.

How does he look at his clean-energy bet in total? "It's a government-induced result, which I think makes sense for society and makes sense for our consumers, and it makes sense for Berkshire as an investor," says Buffett. That's a stem-winding way of saying that clean energy lets Berkshire do well while doing good. And the company seems likely to stay on that course even when Buffett is no longer at the wheel. ■

'YOU CAN'T STOP THIS COUNTRY.'

Berkshire Hathaway CEO Warren Buffett spoke with *Fortune* deputy digital editor Stephen Gandel about the billionaire's investment in wind power, the pros and cons of free trade, and why the election didn't dent his optimism (even though he backed Clinton). Here, edited excerpts from their conversation.



Buffett at a farm outside Omaha, a short drive from some of Berkshire's wind operations.

Why wind?

Iowa is the Saudi Arabia of wind. And it's enabled us to keep prices very low. It's also brought in lots of industry to Iowa because the high-tech companies—particularly in the server-farm business, which uses a lot of electricity—they not only like the low price, but they also like the idea of using wind energy.

How did it come about?

Dave Sokol [a former Berkshire executive] and Greg Abel ran it together for a long time, and then Greg is running it the last five years himself. They were part of Berkshire Hathaway's consolidated tax return, so they could do it on a scale that most stand-alone utilities could not do, for sure.

Do you view this as something you have to do to protect your utility, or a good investment?

Well, society has made an intelligent investment. Investment in wind wouldn't have gone forward in virtually all cases unless there was the tax credit involved. So the government has said, "We are willing to forgo a certain amount of tax receipts in order to foster wind, and solar as well." It's a government-induced result, which I think makes sense for society and makes sense for our consumers, and it makes sense for Berkshire as an investor.

Berkshire Hathaway Energy, according to at least one analysis, has among the lowest returns of all your businesses and gets the most capital. Why not invest less in energy and more in, say, Burlington Northern Santa Fe, which has some of the best returns?

A 22,000-mile railroad needed $4.5 billion last year, and that's what we gave them. If you gave them another billion dollars, there isn't anything to do with it. You're serving your customers already, and your track is in good shape. We allocate capital to the needs of the business. You can't force-feed a See's Candy. But I think the return figures that you have are wrong. We paid $35.05 a share for the utility [in 2000]. And this year it'll earn something around $30 a share after tax.

But you're adding wind capacity. You're soon to be the largest producer of wind energy.

We'd love to grow in solar. We'd love to buy another [utility]. You can't expect to get returns in the utility business [that you get in other businesses]. It's not a great business; it's a good business. And the more money we can put in good businesses, the better I like it. Our utility business 10 or 20 years from now will be a whole lot bigger than it is now.

You are a person who has consistently been optimistic about America.

Very.

Are you optimistic about America today?

Sure, sure. You can't stop this country.

So the results of the election have not changed your optimism?

Not about the economics of the country. The aggregate output of this country per capita is going to keep going up. Now who gets it depends on what government decides in terms of tax laws and all that. But America will be a wealthier country per capita five years from now, 10 years from now, and 20 years from now—you name it.

Do you think the stock market will be higher four years from now than it is today?

I would not make a prediction on the stock market, ever. I'm very long term. Long term, the stock market is going to be higher, and I've written that many times. In terms of what it's going to do next year or tomorrow, I have no idea. The stocks we were buying and selling the day before the election were the same stocks we were buying and selling the day after the election.

"I'VE NEVER CALLED ANY PRESIDENT IN MY LIFE. I NEVER HAVE, AND I NEVER WILL. IT'S PRESUMPTUOUS."

Do you see anything in Trump's policies that is good or bad for the market?

I'm not looking at it. I don't know what the market's going to do at all. Never have, never will.

A few years back you wrote in *Fortune* about a plan to eliminate our trade deficit. Are you going to call Trump and offer that up as a policy?

I've never called any President in my life. I never have, and I never will. It's presumptuous. I guess if I knew a nuclear bomb was someplace I'd get on the phone pretty fast.

Do you still think your plan, essentially granting tradable import credits to anyone who exports, is a smart way to go about it?

I think the President needs to understand that, one, the more trade, the better for us and the world over time. Secondly, the benefits of free trade are diffused over 320 million people. You buy your shoes a little cheaper, you buy your underwear a little cheaper because of free trade. But the penalties to the steelworker in Ohio or the textile worker in Massachusetts are very, very extreme. And some guy that's spent 35 years of his life making steel so I can buy my underwear a little cheaper understandably feels the system is not working right if he's not in some way taken care of.

And so we have to have policies that moderate and hopefully even cure the damages that are done to the lives of people who are perfectly decent citizens who've spent their life in one trade and at 55 they're not going to be able to retrain for something else very well. You've got to have a two-pronged policy. And at that point I think you'll have more support for trade.

A lot of people have said we've learned there are deeper divides in America. Is there anything that you would say you learned from the results of the election?

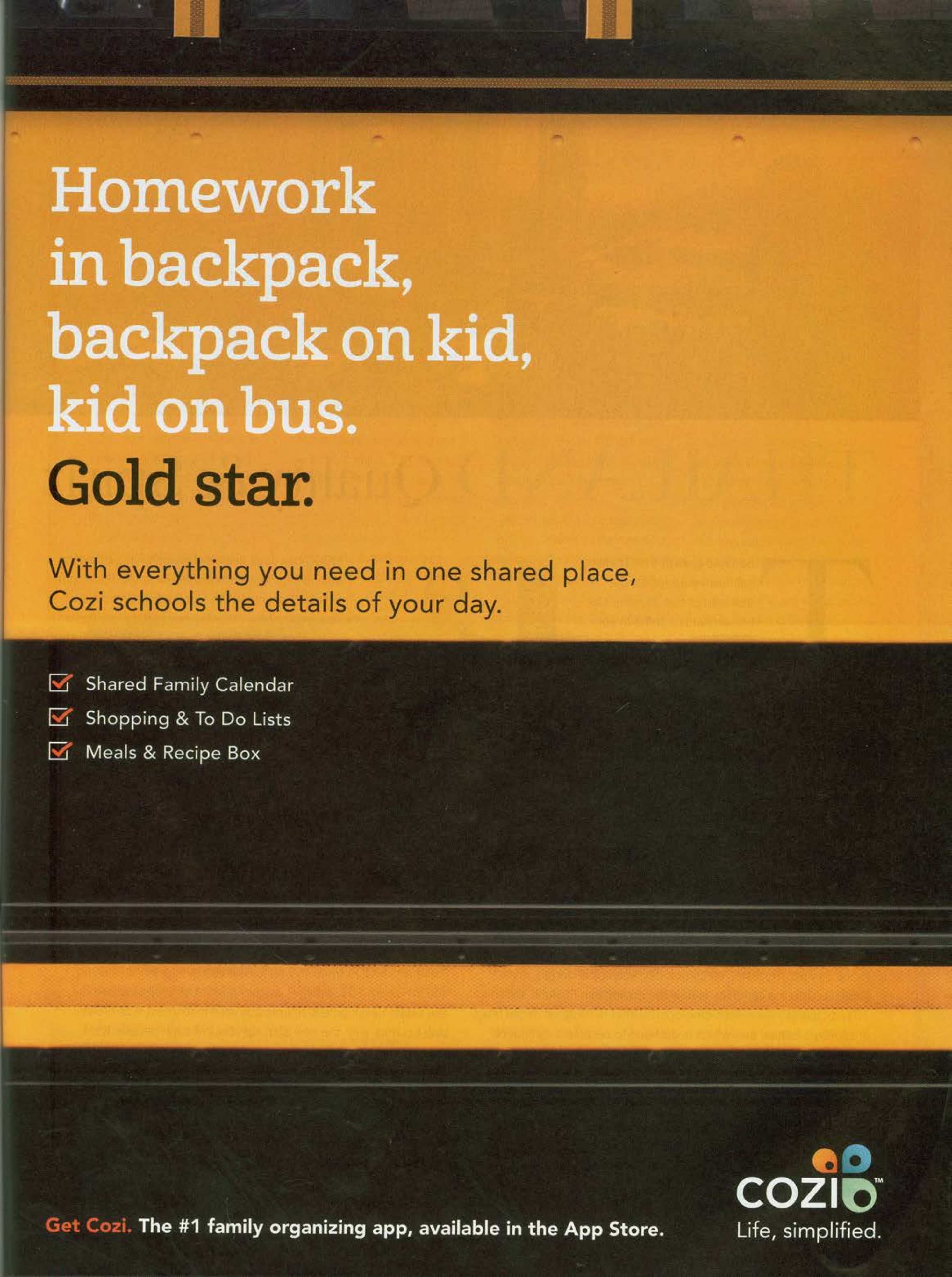
If you go back to the first election I voted in, which was Eisenhower vs. Stevenson in 1952, nobody walked into the polling booth and pulled the lever for Eisenhower because they hated Stevenson. And they didn't pull the lever for Stevenson because they hated Eisenhower. They were for somebody. This election, I think—no way to prove it exactly—a very significant percentage of people went in and voted against the other person.

But you were pretty enthusiastic for your candidate.

Oh, yeah, definitely. I think I had 15 fundraising events for Hillary.

More investors have embraced passive management—investing in index funds and ETFs. Is the next Warren Buffett going to be an index fund?

Passive will beat active over time, but not for the manager. The manager's going to make money out of active and the investor's going to do better with passive. I'm writing a lot about this subject in next year's annual report. I really am. ■


Homework
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kid on bus.
Gold star.
With everything you need in one shared place,
Cozi schools the details of your day.
Shared Family Calendar
Shopping & To Do Lists
Meals & Recipe Box
Get Cozi. The #1 family organizing app, available in the App Store.
COZI
Life, simplified.

THAILAND Quality & Spirit

The rapid growth that Thailand has been enjoying for the best part of five decades has brought with it some major economic and social changes, many of which have become particularly evident in the past 15 years. The country's brisk increase in population has been accompanied by mass migration to its conurbations, which in turn has resulted in an exponential increase in the demand for basic services, particularly housing, healthcare and education.

The government in Bangkok has risen to the challenge with one of its major achievements being the introduction of a universal healthcare provision for all of its citizens. But its ability to address the country's changing needs also owes much to its success in harnessing the dynamic entrepreneurial spirit of Thailand's private sector.

Visit Malaisirirat
CEO of MQDC

MQDC
FOR ALL WELL-BEING

The contribution that MQDC has made to the country's on-going economic development is a case in point. A research-based real estate company focusing on community, ecological design, and public health, the company is now the driving force behind Whizdom 101, an iconic mixed-used development that is rising up in the heart of country's capital and which is destined to become a symbol of 21st-century Bangkok.

A very tangible manifestation of MQDC's approach is the 30-year warranty that it offers to all of its residential clients. The building systems of every MQDC office and apartment are continuously monitored, not just to ensure that they retain their resale value to the benefit of the owner, but also to enable the company to improve the quality of its future developments, particularly by using non-toxic materials and by safeguarding the health of the occupants with better overall indoor air quality.

MQDC has itself been instrumental in harnessing Thailand's famous entrepreneurial spirit. It's a spirit that has blossomed with increasingly universal online accessibility. "Having internet access has an actual effect on education," says Visit Malaisirirat, MQDC's CEO. "Increasing access to the internet by a few factors will create a paradigm shift in the global education system. I want to create a space with a large public library and online resources where young people can be free to socialize positively and study independently 24 hours a day—a space that their parents feel safe to have their kids go and study."

The psychological boost this has given to some communities in Bangkok is perhaps even more important than the contribution the project has made to the "greening" of the capital. "Bangkok needs to blend business practice with the creation of a new sustainable sharing economy," says Malaisirirat. As a matter of course, MQDC sets aside 2% of its revenue to the empowerment of local communities and the provision of schooling to underprivileged children.

All these MQDC traits and philosophies are now being injected into Whizdom 101, a large, unique, mixed-use project where the real estate development will provide an environment that blends street culture with the new start-up ethos of open debate. It's a "third place" where people can work and yet feel the comfort of being at home. Whizdom101 is a 17-acre site with an ecosystem of residential condominiums, office spaces, retail, an incubation center with supporting venture capital, a convention hall, a forum, a public library and a health club run by Club Corp. It's a celebration of the 24-hour start-up lifestyle where global connectivity is key.

With the collaboration of True Corporation, Whizdom101 will help foster the expansion of the digital economy in Southeast Asia. MQDC is, evidently, still playing its part in the transformation of Bangkok. ●

THAI AIRWAYS INTERNATIONAL—REACHING NEW HEIGHTS

Each year, more than 17 million tourists and members of the international business community descend on the Thai capital of Bangkok, making it one of the most popular destinations in the world alongside the likes of London, New York and Hong Kong.

Charamporn Jotikasthira
Thai Airways International President

AND WITH THAILAND continuing to consolidate its position as the gateway to the Asean Economic Community as well as remaining one of the world's best-loved holiday destinations, that popularity looks set to continue well into the foreseeable future.

All of which is good news for the country's economy, particularly its tourism and aviation sectors. More than 53 million passengers passed through Bangkok's Suvarnabhumi International Airport last year, an increasing number of them courtesy of Thailand's flagship carrier, Thai Airways International (THAI).

THAI A380, the smoothest way to fly - photo by master films / P. Masclet

For many years now, THAI has been a byword for much that is good about the country, particularly its citizens' reputation for hospitality and the delicate flavors of the national cuisine. It has nevertheless had its struggles in recent years, largely brought on by a combination of the ferocity of competition within the global airline sector and some over-ambitious plans for expansion since the turn of the millennium.

Two years ago, with financial crisis looming, the authorities began a search for a leader with the vision and commercial acumen required to turn the company around. It did not take them long to find the ideal candidate to fulfill the role in the form of the former president of Thailand's Stock Exchange, Charamporn Jotikasthira.

With successful careers in both banking and finance already behind him, Jotikasthira immediately set about taking the steps required to put THAI back on course. The airline's new president has likened the battle for market domination to an Olympic event, in which leanness and fitness are prerequisites for success; two characteristics that THAI appeared to have lost by the time he took up his new role.

JOTIKASTHIRA WASTED LITTLE TIME PUTTING HIS NEW HOUSE IN ORDER. Having decided that his first priority had to be to stop the airline hemorrhaging money, he had within six months cut out several unprofitable routes, including services to Johannesburg, Madrid, Moscow and Los Angeles; offered 1,800 staff early retirement; and began systematically cutting back costs department by department.

With the painful but necessary cuts under way, Jotikasthira then turned his attention to the steps required to return THAI to its former glory. "We are now in our second year of the restructure," he says, "and we are taking a more professional approach to both sales and business management. When I arrived, we weren't selling as aggressively as we should have. We were just lucky that people wanted to come to Thailand." A new head of sales was subsequently recruited from Australia who helped introduce the best practice to drive the sales organization.

Jotikasthira was also acutely aware that the quality of the service it offers will play just as an important part in the airline's resurrection as its ability to compete on price, and considerable effort has gone into making the THAI travel experience among the best on the market. "We should be the first choice for anybody wanting to travel to Thailand and beyond," he says. "The product we have to offer is already among the best, with state-of-the-art seating and excellent service."

Last month, in a sign that the austerity drive may be coming to an end, the carrier announced that it was planning to add new routes and to accept deliveries of more fuel-efficient aircraft to replace its aging fleet.

Jotikasthira and his colleagues are also now in the process of drawing up a 10-year plan to secure the carrier's future growth. As well as providing for considerable extra investment in technology and the quality of the service THAI will be able to promise tomorrow's passengers. The plan is also to focus on the expansion of its geographical footprint.

While this will probably entail establishing new routes around the region to destinations in China and Australia, Jotikasthira is equally keen to explore the opportunities that its hub at Suvarnabhumi airport has to offer, particularly through the establishment of partnerships with other airlines operating in the region. By his calculations, only 5% of the carrier's revenues come from partner airlines making use of THAI's hub in Bangkok, compared to an industry average of around 25%. Even if he can get that figure up to 20%, he estimates that substantial additional revenue can be realized.

"There are a lot of opportunities that we have been neglecting and haven't even touched on yet," he says, "but we have made a 180 degree turn and we are now moving in the right direction. We are already the most improved airline in the world and on course towards becoming the best airline in the world." ●

THAI
Smooth as silk

THAIOIL—ENERGIZING THE THAI ECONOMY

In January this year, Thailand's largest oil refiner, Thaioil, announced that it was planning to invest more than $5 billion over the next five years, with about 20% of the total sum to be used to increase capacity at its Sriracha refinery on the shores of the Gulf of Thailand.

Atikom Terbsiri
Thaioil CEO

THE REMAINING 80% OF the money was to be set-aside for its Clean Fuel Project (CFP) and its plans to meet the growing demand across the region for cleaner transportation fuels by increasing its capability to upgrade low-value products such as fuel oil into more valuable low-sulphur products.

Part owned by the publicly listed PTT group, whose largest shareholder is Thailand's Ministry of Finance, Thaioil is by definition committed to enhancing the country's energy security and to protecting its environment. While the CFP is currently going through a Front End Engineering Design process, it will play a major role in its ability to meet these challenges. It will also contribute significantly to the greater good of the wider ASEAN Economic Community by allowing the company to increase exports to its neighbors across Southeast Asia.

WITH PROVEN RESERVES OF APPROXIMATELY 400,000 MILLION BARRELS, Thailand trails some way behind Indonesia and Malaysia in the hydrocarbon rankings, but the extensive economic and social development it has enjoyed in recent years nevertheless owes much to its access to low-cost domestic oil and gas supplies. These have helped it develop a diversified economy and enabled it to avoid the trap of becoming overreliant on its oil and gas revenues by developing what are now healthy manufacturing, tourism and agricultural sectors.

With no upstream assets of its own, but still responsible for 25% of the country's oil-refining capacity, Thaioil has more than played its part in this process, and not just by supplying the industry with cheap and clean fuel to drive its vehicles and machinery. The company is actively involved in several other business segments and also produces, among other things, lube base oils and the Paraxylene used in the manufacture of polymers and polyesters as well as a range of petrochemical, chemical and hydrocarbon-based products.

In addition, Thaioil owns a fleet of seagoing tankers that it uses for the transportation and delivery of its petroleum and petrochemical products both at home and abroad. In February this year Thaioil's subsidiary, the LABIX Company Limited, opened its Linear Alkyl Benzene (LAB) manufacturing plant. The LAB facility is connected to Thaioil's fully integrated refinery, which makes it the first and only fully integrated LAB facility in the region with capacity of 100,000 tons per annum. Using the prime raw materials of benzene and kerosene from Thaioil, the LAB produces detergents.

Two small power plants operated by TOP SPP Company Limited, another Thaioil subsidiary, began operations in April and June of this year. With a combined annual electricity-generating capacity of 239 MW and a steam production capacity of 498 tons a year, the projects create electricity supply security and generate continuous revenue for Thaioil. Elsewhere, and in line with the government's policy of supporting and promoting renewable energy production and consumption, Thaioil's ethanol subsidiary is dedicated to the development and production of the ethanol increasingly used as a biofuel additive in gasoline.

"We are much more than just the largest refinery in Thailand," explains its CEO, Atikom Terbsiri. "We are also a highly integrated company that is engaged in a number of related activities, and this gives us the flexibility to provide our customers with a better product mix and to generate more revenues and more earnings for our shareholders; and being a part of the PTT Group allows for better logistics and distribution."

Although PTT has a 49% shareholding in Thaioil, the rest of the stock in the company that Terbsiri has headed up since 2014 is publicly quoted, so the CEO and his board are under an obligation to balance the needs of the stakeholders with those of its other investors.

Despite operating in a sector that has been dealt a number of hammer blows by price fluctuations in recent years, that balancing act is going very well. After suffering a dip at the end of 2014, when oil-price volatility was at its worst, its share price recovered strongly throughout 2015 and now is back to where it was three years ago.

One reason for last year's surge was, paradoxically, the low cost of crude, which meant that the company ended up paying much less for its basic raw material than it expected, sending its gross refining margin up to U.S. $7.8 per barrel. This, combined with Thaioil producing 10% above its capacity, improved the company's cash flow and reduced its debt-to-equity ratio.

So far this year, this upward trajectory has shown no signs of abating. "Our first half year results are very promising," says Terbsiri. "Margins in the refinery business remain strong, because domestic demand remains buoyant, especially for gasoline and diesel."

With Thailand's economy continuing to motor, Thaioil is definitely a good investment opportunity. ●

Thaioil

BANGCHAK PETROLEUM PLC—THAILAND'S GREEN ENERGY PIONEERS

The center of global economic gravity is moving relentlessly eastward towards Asia.

THE COMBINED GDPs OF the ASEAN Economic Community member states today add up to almost US$2.5 trillion and, with a total population of over 600 million, the bloc represents a market opportunity larger than either the EU or North America.

However, the region's rapid economic growth has come at a price, and there is now an ever-larger gap between the demand for energy and its supply, while its proliferation of densely populated conurbations has made its inhabitants vulnerable to the unhealthy side effects of fossil-fuel pollution, not to mention a danger to the environment.

There is now at last a sense of urgency at the government level to address these issues, with the Thai government aiming to meet 20% of the country's total energy consumption from renewable energy sources by 2022. Among the companies leading the way to help it achieve that goal stands Thailand's Bangchak Petroleum Public Company Limited, which, in its relatively short lifetime of 31 years, has grown into one of the country's leading energy suppliers. Equipped with the latest in hydro cracking technology, its refinery complex has the capacity to churn out up to 120,000 barrels of oil each day, much of which is sold through its network of more than 1,000 service stations.

Although the refining and retailing of oil remains core to Bangchak's business model and still accounts for over 70% of revenues, the company is increasingly turning to the development of alternative sources of energy for its own future growth and in order to make Thailand, and indeed the rest of Southeast Asia, a cleaner and healthier environment for future generations.

While many energy companies pay only lip service to the green movement, Bangchak's actions speak much louder. Last year its board approved the acquisition of a 7% stake in the Western Lithium Corporation, a Canadian company that is developing lithium mines in the U.S. and Argentina that have estimated reserves of 3 million tons (0.5m in Nevada in the U.S. and 2.7 million in Cauchai, Argentina) that will take between 20 and 30 years to extract.

THE ACQUISITION EPITOMIZES THE ENLIGHTENED SELF-INTEREST THAT HAS MADE BANGCHAK A FORCE to be reckoned with inside the alternative energy movement; lithium-ion batteries have become an essential component in most electrical vehicles, and Bangchak's president, Chaiwat Kovavisarach, is banking on demand for the batteries at least quintupling over the next 10 years. "We are going to both use and supply lithium," he says. "It is a low-carbon product that is going to change the world and is exactly the kind of business that we want to focus on. Every commercial decision we take these days involves us trying to make the world a cleaner place."

Further testimony to the companies' commitment to this sector is that Bangchak's BCPG operation is the first green power plant to be listed on the Thai Stock Exchange, with 130MW of capacity in Thailand and 196MW operating and under development in Japan. The company is also very active in the development of solar power as an alternative source of energy. With a capacity of 38MW, its Sunny Bangchak facility is one of the first photovoltaic power plants in southern Asia and has the potential to mitigate the release of 32,000 tons of carbon dioxide emissions and to reduce annual imports of coal by 40,000 tons.

Chaiwat Kovavisarach
Bangchak Petroleum President

Fully aware that public attitudes also need to change if the region's environment is to get the long-term protection it so desperately needs, Kovavisarach and his colleagues are on a mission to educate the Thai people about the advantages of alternative energy. As well as building the Sunny Bangchak Learning Center in an attempt to inform locals about solar energy, Bangchak has teamed up with a dozen different universities to develop a series of solar-powered model homes.

It is gestures like these that have made Bangchak a household name throughout Thailand. "We balance profit and value and always try to put something back into society," explains Kovavisarach, "and we are well thought of here as a result."

Bangchak's president now has his eye on other sources of sustainable fuel, and the company has set aside US$1 billion for future investments, some of which will almost certainly be channeled into biofuel and green industries. Here again, enlightened self-interest is the name of the game. With Southeast Asia already producing as much as 230 million tons of feedstock each year, investors are now waking up to the possibility of harnessing the biomass created from crop and forest residues and municipal solid waste to help narrow the energy gap as well as to feed its livestock.

Kovavisarach's is also increasingly setting his sights on a wider horizon. "We are looking to move our brand on to the international stage," he says. "We have already starting doing business in Japan and the Philippines and want to export the Bangchak culture there as well."

With Bangchak's commitment to protecting the environment and track record in CSR that can only be good news for the region as a whole. ●

bangchak

FUTURE PARK—RETAIL VISIONARIES

Ms. Pimpaka Wanglee
CEO of Future Park

Bangkok is the capital of Southeast Asia's second-largest economy and one of its most densely populated conurbations.

IT IS ALSO A DYNAMIC commercial hub whose retailers are kept busy catering in equal measure to the needs of its local citizens, affluent expatriate communities and its booming tourist industry.

However, it is not just the volumes of trade that have altered dramatically in recent times. Across the region, patterns of consumer behavior have been changing radically, particularly those of the new class of cash-rich and time-pressed urban professionals who are increasingly turning to supermarkets, convenience stores and shopping complexes near to their workplace or their commuter rail stations to provide them with food and fashion of the quality they have come to demand and expect.

Future Park Rangsit is Thailand's largest shopping mall.

THE SPEED WITH WHICH TRENDS SUCH AS THIS HAVE HELPED TRANSFORM THAILAND'S RETAIL SECTOR may have taken many of its established players by surprise, but not Ms. Pimpaka Wanglee, a fifth-generation descendant of one of the country's oldest ethnic Chinese business dynasties and the mastermind behind northern Bangkok's first and, at the time, largest shopping center, Future Park Rangsit.

Not content with leading the field Pimpaka is about to change its parameters as well.

Pimpaka was only 24 when she started to work at Future Park, the operation set up by her family's Poon Phol Group to develop the plot of land in Pathum Tani province that was soon to become home to 18 retail anchors, the largest number in the country, as well as more than 230 restaurants and food outlets, and 24 major banks and financial institutions. It was a bold move at the time, but a shrewd one, and accurately anticipated the emergence of the Rangsit commuter.

"My grandmother bought this plot of land over 50 years ago," she says. "Her reasoning was that it was close to an area with a high population density and was only eight kilometers away from Don Muang Airport. She also reckoned that Rangsit would become a satellite town for people working in Bangkok."

And she was right. Commuters will soon be able to transfer from Rangsit into Bangkok's Bang Sue Junction Railway station on the city's SRT Red line sky train, from where they can transfer to the Suvamabhumi airport link.

Last year Future Park Rangsit once again reclaimed the mantle of Thailand's largest shopping mall when Pimpaka presided over the opening of Zpell at Future Park which, with a construction area of 600,000m^2 of retail space, puts its closest competitor, the 500,000m^2 Siam Paragon firmly in the shade.

Situated directly in front of the original Future Park, Zpell has the contemporary consumer directly in its sights and has been developed in line with a strategy that Pimpaka has dubbed as "Never Regular" that combines convenience, innovation and fun. Infrastructure such as a flyover bridge was added in order to give local residents living on the other side of Rangsit–Nakhon Nayok highway easier access. She has also managed to attract some internationally acclaimed and well known fashion and fine dining brands into the new complex, including the likes of Cath Kitson, H&M, Cotton On, Uniqlo, and American Eagle Outfitters, as well as new anchors like Ski365 and Funarium.

In keeping with consumer expectations, Zpell at Future Park is about entertainment as well and features a 7,000m^2 environmentally friendly Zappening "Eco-Park" and an 800m^2 ice-skating rink.

In November last year, Pimpaka unveiled an even more ambitious plan, this time to fulfill one her grandmother's prophecies by turning Future Park into a satellite town in its own right. As she explains, "Future Park is a landmark in the north of Bangkok and we will continue to add more and more projects to complete our satellite town with a well-designed traffic and master plan."

To achieve this end, Pimpaka is now looking for retail partners and investors willing to take equity stakes in some of Future City's residential and hotel developments in direct partnership with Rangsit Plaza. With accommodation required for some of the 50,000 people working in Future Park Rangsit or the new satellite town's construction, not to mention its strategic position as a gateway to the north and northeast of the country, she is confident that the residential proposition's fundamentals speak for themselves; and, given that many shops have their top sales numbers at Future Park, there is always a full occupancy rate and a waiting list of tenants.

"We pay of a lot of attention to our brand image," she says. "We believe that professionalism and sincerity are the two most important things when it comes to building business relations. We are retail professionals that you can trust." ●

FUTUREPARK

SOUTHEAST ASIA'S LEADING VEGETABLE OIL PRODUCER

Powered by the twin engines of rising living standards and a boom in the popularity of biofuel's sustainable properties, global consumption of vegetable oils has been growing steadily for the best part of two decades.

Visuth Vitayathanagorn
Thai Vegetable Oil CEO

Between 1995 and 2015, demand for palm, soybean, canola, sunflower and other vegetable oils almost tripled, with palm oil (up 290%) and soybean oil (up 160%) leading the charge.

Those figures mask some striking regional difficulties, particularly the effect on Asian eating habits triggered by the continent's phenomenal economic growth and the epic scale of migration from countryside to city that has come with it; with more money in their pockets than most of their parents or grandparents and with greater access to the precepts of international cuisine, these new urban dwellers are able to enjoy a wider and more sophisticated range of dishes—and more meat—than their forefathers.

All of which is great news for companies in the soybean business like the Thai Vegetable Oil (TVO) Public Company Limited that celebrates its 50th anniversary in 2017 and that has seen its soybean-crushing capacity rise from 400 tons in 1985 to 6,000 tons today.

LISTED ON THE STOCK EXCHANGE OF THAILAND SINCE 1990,

TVO is now the largest soybean crusher in Southeast Asia with three production plants situated in the province of Nakhon Pathom, about an hour's drive to the west of Bangkok. From there it supplies the region's livestock farms and feed mills with a staple ingredient for the animal feed used mainly to rear poultry and swine. The oil it extracts from the bean is simultaneously distributed to the retail, industrial and export markets; in Thailand, its A-Ngoon brand of cooking oil now controls 65% of the soybean oil market.

As with many things that look simple on the surface, it isn't quite that easy, and a great deal of thought, time and effort has gone into achieving and maintaining such a strong position in what is a highly competitive market. "We have to strike the right balance between our sales of soybean meal and soybean oil, because when you crush soybean you get these two products," explains TVO CEO and Chairman Visuth Vitayathanagorn. "We also have to make sure that we supply our soybean meal customers as and when they need us to. Soybean meal is a key element in animal feed, and because animals have to eat every day, we need to make sure that we can provide them with fresh ingredients, also on a daily basis."

If vegetable oil consumption has been growing on a steady and reasonably predictable curve, the same cannot be said for the global economic environment in which TVO operates. In a world which Vitayathanagorn describes as being full of "volatility, uncertainty, complexity and ambiguity," TVO has gone to great lengths to create the internal stability and focus that it needs to both survive and succeed.

At the heart of this strategy is an ongoing effort to develop and maintain a dispassionate understanding of market conditions. Every two weeks, managers from each of TVO's key departments congregate for their fortnightly Business Intelligence Meeting (BIM) where they pool information and ideas. "In today's world, it is impossible for a leader to do everything himself," says the company's chairman, who as its former manager director should know. "You need to be able to tap into many areas of expertise including sales and marketing as well as a knowledge of the commodity markets, and the BIM format has been designed so that everybody co-leads the meeting."

This inclusive philosophy also underpins how TVO is run in general. Vitayathanagorn and his senior colleagues put a high value on staff development and have done their utmost to create a "win-win" culture by restructuring the organization to minimize internal conflict and to make everybody feel they are part of a winning team.

And TVO is certainly winning, with both revenues and profits more or less tracking the upward curve of global soybean consumption. There is plenty more to come, according to its Chairman, who is confident that the company is in an ideal position to capitalize on the growing trend of "orientalism"—the resurgence of the two economic superpowers on Thailand's doorstep.

"China and India have the two largest populations in the world," he says, "and to me that is very exciting. Every country in Asia stands to benefit and particularly Thailand; two thirds of all the consumers in the world live within a six-hour flight radius of Bangkok [and therefore TVO's processing plants] and we have the commercial acumen to make the most of the situation. Thailand has already been through an economic crisis and it has made the Thai business community stronger. We know how to build trust in our products and services."

Southeast Asia's largest soybean processors clearly have a bright future ahead of them. ●

TVO

EASTERN POLYMER GROUP PLC. (EPG)—INDUSTRY INNOVATORS

"EPG Creative Innovation Organization" is a holding company that has achieved its sustainable growth by being a pioneer in Innovative Product Design, Material and Process use in Production.

Dr. Pawat Vitoorapakorn
Eastern Polymer Group CEO

IN 2011, THAILAND'S WORST flooding in 50 years left more than two-thirds of the country under water. Amid all the images of devastation and human misery that flashed onto TV screens across the world there were pictures of survivors floating down streets in plastic boats which were, in fact, a converted batch of Truck Bed liners supplied by AEROKLAS, which is a subsidiary of EPG. Remarkably 70,000 units of the plastic Polymer Boat were produced within just 45 days. Being a world-class polymer and plastic product manufacturer, combining a "can-do" culture nurtured by EPG's senior management, the company has become one of Southeast Asia's most profitable and innovative manufacturers of industrial products.

Created by either chemical cracking or the fractional distillation of hydrocarbons, polymer products pervade every aspect of our lives and are key elements in countless items that we use day-to-day, from electric plug casings and cable insulation, to tooth fillings and diapers. They are also indispensable to modern-day industry, and companies like EPG have built up extremely successful businesses supplying a number of sectors with the components they need for their production lines and parts. In EPG's case, its core businesses are insulation materials, and plastics for auto parts (particularly for pickup truck manufacturers) and for food packaging.

With revenues of over US$250 million, Net Profits after Tax of more than US$40 milion (a massive 123% year-on-year) and shares trading approximately 120% since its IPO price of 5.80 baht per share, EPG's market capitalization stands at approximately US$1.1 billion as of August 2016. EPG has clearly come a long way since its current CEO Dr. Pawat Vitoorapakorn and his father set up the company in 1978. Having quickly made a name for itself as the country's first Elastomeric EPDM (Ethylene Propylene Diene Methylene) Thermo Insulation producer used in air conditioning units under the AEROFLEX and AEROCEL trademark, the second major milestone in EPG's history came in 1996 when it patented a technology for the production of the "No Drilling Required" Bed Liner with the continuation in innovative development to Canopy, Deck Cover and Sidesteps etc. Soon after in 2001, EPG strengthened its empire through the acquisition of a plastic and packaging business under the EPP trademark which are now equipped with the largest High Speed Automation production in the ASEAN region.

SINCE THEN THE COMPANY HAS NOT LOOKED BACK. In addition to a production facility in Thailand, EPG owns three factories in China, two in the U.S., one in Australia and another in India. It also has licensing agreements in Switzerland and Russia, and it runs a joint venture in China and India and has established a comprehensive distribution network across Europe.

Both EPG and its CEO are in constant motion, restlessly seeking new product ideas and market opportunities. "We have always been pioneers in product, process and material innovation," Dr. Pawat Vitoorapakorn says, "and we have a knack of finding new technologies. When we invented our pickup truck bed liners, for instance, we discovered that only about 5% of our customers were prepared to install them for themselves, so we designed and patented a technology that meant that they could be installed without drilling. Over the past 20 years, we have applied for around 700 patents. I firmly believe that the world in general needs advanced technologies if it is to have a better future."

Dr. Pawat Vitoorapakorn also believes that his company can only keep on growing and developing at its current pace if it attracts, looks after, and motivates the right kind of employee. To that end, he and his management team have come up with their own business philosophy that brings together all the strands of the company's success in an acronym (NINMOSM) that stands for Niche product, Innovation, Network, Mass production, Organization, Speed of work and, finally, Morale.

EPG is now looking to grow both organically and by acquisition, and it is putting its money where its mouth is. Over the next two years, its CEO told an analysts' meeting in June, its shareholders have agreed to invest US$8 million in all products development, more than US$20 million in upgrades to its auto parts and food packaging plants and facilities, and just under US$30 million to fund its M&A and JV activities both on the domestic market and overseas. EPG's share price is now climbing steadily, a reflection of the market's confidence in the company's ability to spend this money wisely.

As for Dr. Pawat Vitoorapakorn, himself, he is convinced that EPG's commitment to innovation will keep it moving onward and upward. "We used to sell just polymers and plastics, but now we sell innovative products made of those two materials," he explains, "and investors like us for that; and they also come to us because we are always trying to improve our EBITDA."

EPG's 10,000 shareholders would testify to that. ●

EPG
EASTERN POLYMER GROUP

Better Way Co.— Southeast Asia's Leaders in Cosmetics

The rise and rise of Southeast Asia's middle classes continues to have an electrifying effect on patterns of consumer behavior throughout the region.


Danai Derojanawong
President of Better Way Co.

MISTINE'S CALLING
www.mistine.co.th

This is especially true of cosmetics. In Thailand, sales have been increasing at an annual average of between 8% and 10% for several years, while China's cosmetics industry has been enjoying double-digit growth for over a decade. With household incomes continuing to rise, this upward trajectory is unlikely to end any time soon.

As president of Thailand's leading cosmetics sales distributor, Better Way, Danai Deerojanawong is focused on making the most of this unfolding scenario both at home and abroad. Ever since he took over the reins of the company that was set up by his father in 1998 to market the Mistine range of lotions, deodorants, make up and skincare products, Deerojanawong has pursued a policy of overseas expansion. Over the past 15 years, Better Way has opened manufacturing sites in the Philippines and Vietnam and now runs successful sales operation in Cambodia, Laos and Myanmar, as well as in several Middle Eastern and African countries.

He now has his eyes set on the biggest prize of all: China. "We see some great opportunities in China," he says. "The Mistine cosmetics range is targeted at Asian women, especially those living in tropical climates, so southern China should be an especially productive market for us." With the internet rapidly replacing the catalogue as the direct sales channel of choice, Deerojanawong is now in the process of setting up a joint venture with a Chinese company specialising in online sales that he expects to be in place by the beginning of next year. He is also looking to establish a similar arrangement in Indonesia and is looking for serious business partners to help Better Way increase its international market presences even further. "Expertise," he says, "is more important than money."

While catalogue sales have traditionally been central to Better Way's business model, the enthusiasm of Chinese tourists for the Mistine product range has also prompted Deerojanawong to consider a more immediate route to market. "We started opening small retail beauty shops three years ago," he explains, "and we now have seven branches dotted across Bangkok, Pattaya and Phuket.

The ongoing popularity of the Mistine product range will, ultimately, rest with Better Way's understanding of its customer. "Our products are meant to capture the beauty of Asia," he says. "We focus on giving the Asian look to Asian women."

Simple but effective. ●

Bangkok Insurance—Thailand's Leading Insurer

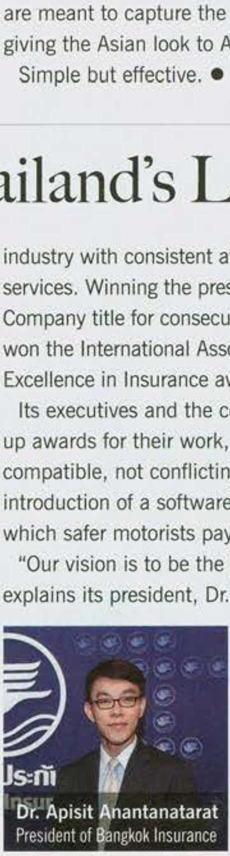
One sure sign that an emerging economy is well and truly developing is the growth of its financial services industry. Thailand is no exception, and the disposable income of its burgeoning middle classes has triggered something of a boom for the country's non–-life insurance brokers and product providers.

Led by the demand for property, motor vehicle and accident and health policies, the sector consequently grew by 75% between 2009 and 2016, and is forecasted to increase in value by a further 42% over the next ten years. With the Thai General Insurance Association estimating that market penetration currently stands at 1.7%, that may prove to be a conservative estimate.

Accordingly, the future looks bright for Bangkok Insurance, a market leader and a prominent presence on Thailand's non–life insurance scene since 1947. Floated in 1993, the company is the only insurance company in Thailand with an S&P "A" financial stability rating, a testament to the skill with which it has ridden the succession of financial storms that have convulsed the world economy over the past 70 years. Its achievements are often recognised within the industry with consistent awards for the quality of its products and services. Winning the prestigious Most Outstanding Non-Life Insurance Company title for consecutive years, in 2015 the company also won the International Association of Insolvency Regulators' national Excellence in Insurance award for the fourth year in a row.

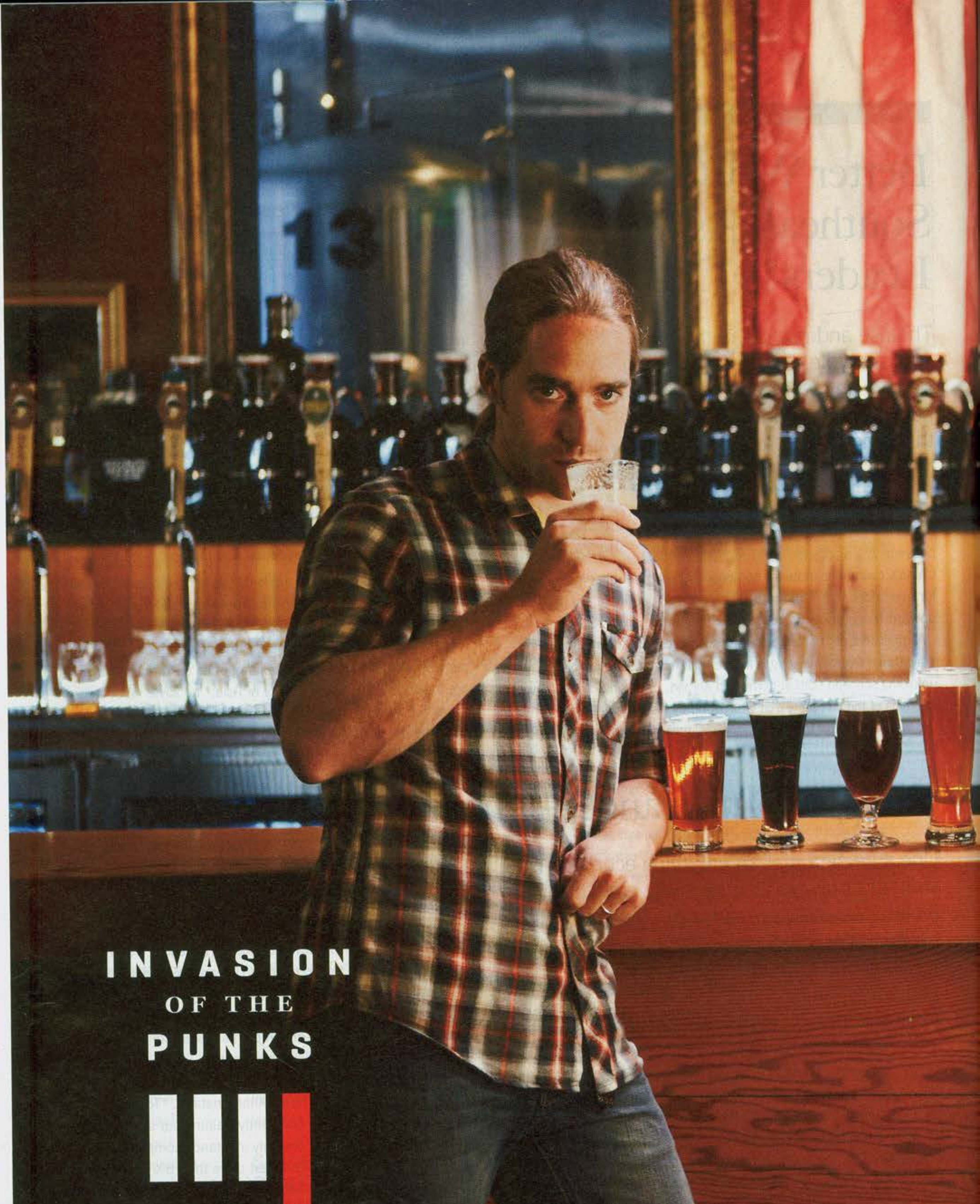
Its executives and the company's IT teams also regularly pick up awards for their work, proof that stability and innovation are compatible, not conflicting, forces. Last year, for instance, saw the introduction of a software-driven points system for drivers through which safer motorists pay lower premiums.

"Our vision is to be the preferred non-life insurer in Thailand," explains its president, Dr. Apisit Anantanatarat. "To get there, we are constantly training our staff, and we are the only insurance company in the country to invest more than 5% of our revenues back into our IT development projects. Right now, we are in the process of opening a network of 34 branches across the country and we want to make sure that our customers get the same standard of product and service in each of them."


Dr. Apisit Anantanatarat
President of Bangkok Insurance

กรุงเทพประกันภัย
Bangkok Insurance

After nearly 70 years, Bangkok Insurance's journey may have only just begun. ●



INVASION OF THE PUNKS

BrewDog founders Elvis [a.k.a. Martin] Dickie, left, and Elvis [a.k.a. James] Watt.

BREWDOG IS AN OXYMORON: A SMALL CRAFT BREWER SEEKING TO BECOME A GLOBAL PRESENCE. CAN THE SCOTTISH COMPANY FIND A NICHE IN THE U.S., WHERE CRAFT-BEER LOVERS PRIZE LOCAL ROOTS?

BY **BERNHARD WARNER**

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VEN WHEN THINGS are going pretty smoothly for BrewDog cofounder James Watt, the 34-year-old Scotsman seems to be a magnet for controversy. Upon returning home in October from a U.S. business trip, the craft-beer impresario got hit with a cease and desist letter. It was for a fight Watt didn't even remember picking, involving Elvis Presley.

It was a bit of a buzzkill. Back at BrewDog global headquarters in Ellon, in northeast Scotland, Watt had lawyers breathing down his neck from Authentic Brands Group, a trademark firm that owns the intellectual-property rights to more than two dozen fashion brands and celebrities, from Frederick's of Hollywood to The King.

ABG demanded that BrewDog stop using the late performer's name to market one of its best-selling craft beers, a potent blood-orange-and-grapefruit-infused IPA called Elvis Juice. Watt and his cofounder, Martin Dickie, who have been friends since childhood, were hardly all shook up.

They devised a plan to spin the bad news into free publicity. To protect against the infringement claim, they legally changed their first names to Elvis. The renamed Elvis Watt and Elvis Dickie tried to get all 650 BrewDog staffers to do so too, but, alas, got no takers. They also took a swipe at one of their favorite punching bags, Budweiser parent Anheuser-Busch InBev, the $216 billion colossus, which uses another word closely associated with Presley. Why not, they suggested in a blog post, go after Bud for calling itself the "King" of beers?

It was a classic BrewDog move. Changing their first names may have been a dubious legal tactic, but the duo succeeded in getting in a very public jab at the suits who sought to shut them down, while reinforcing their underdog appeal with fans, or "punks," as they affectionately call them. They managed to score some free publicity, and their moves lit up Twitter for a few weeks. "We quite like it when our backs are up against a wall," Watt says, "and we have to think of solutions to get out of it. We saw this as an opportunity to stand up and remind people how we do things as a business and what we believe in, and to have fun doing it."

Clearly, sticking a thumb in the eye of any perceived business threat is a standard tactic for the BrewDog founders. You get the sense that Watt and Dickie, both of whom are droll with a dry manner, enjoy it too. They practice a form of guerrilla marketing perfected by Virgin's Richard Branson with elements that conjure master attention grabbers ranging from Kenneth Cole back to

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Pouring hops at the company's Scottish brewery (left); preparing to drop stuffed cats into London's financial district to celebrate raising money from fans rather than "fat-cat bankers" (above).

P.T. Barnum. "Over the years we've gotten decent publicity by sticking to our guns," Watt allows, "by standing up for something that most conventional businesses would probably never do."

In the U.K., BrewDog's millennial cofounders have become household names as much for the capers they've pulled as for their bestselling beers. In 2015 they dropped stuffed cats from a helicopter into London's financial district to celebrate a round of funding raised from beer drinkers rather than "fat-cat bankers." To protest a Russian law targeting homosexuals, they put a lipstick-and-eye-shadow-wearing Vladimir Putin on the label of a new beer and shipped him a case. In another gag, they projected a 60-foot image of themselves in the buff onto the Houses of Parliament to declare a craft-beer revolution sweeping the land.

The BrewDog founders have used their rebel streak to create the U.K.'s fastest-growing food and drinks brand. Sales are expected to top 70 million pounds ($86 million) this year, a sevenfold increase since 2011. The company projects operating profit of $4.5 million.

Now BrewDog, which has been selling token quantities of beer in the U.S. for years, is planning a Scottish invasion, slated for early 2017. The company is building a North American base 12 miles outside downtown Columbus. Once completed, the facility will hold a 100,000-square-foot brewery, plus a taproom, restaurant, canning operation, and distribution hub. It will have a production capacity of 640,000 barrels; producing that much would put BrewDog in the top 10 of U.S. craft-beer makers. Should the company's plans work out, BrewDog will soon have its own bars across the country.

OUTSIDER APPEAL, it turns out, is a mixed blessing when it comes to artisanal suds. The $24 billion U.S. craft-brew market, the world's largest, prides itself on being hyperlocal, and for many aficionados, the more obscure the brand, the better. Regional tastes rule. Pacific Northwest IPAs, for example, differ dramatically in aroma and hoppiness from those IPAs made and consumed in New England and Southern California, notes Bart Watson, chief economist at the Brewers Association.

BrewDog's offerings get high marks, but competition is fierce. There are nearly 5,000 craft brewers in the U.S., all vying for a market that's showing signs of losing its froth. First-half 2016 sales in the category grew 8%, flat by previous years' standards, says Watson.

No craft import has sold well across the U.S., Watson notes. "BrewDog is a well-known brand," he says, "but I think they're going to have challenges away from Ohio. Some markets are pretty competitive."

Watt is well aware of the challenge that being an outsider entails. Lest anyone question BrewDog's geographic bona fides, the company has already sunk $35 million into the Columbus brewery, and it has locked in U.S. distributors. "The key thing for us at the moment is to build strong local roots," says Watt. "That means build a massive presence in Columbus and a base from there in Ohio to grow from."

Like so many craft brewers, Watt and Dickie started making beer as a hobby, out of a musty shed in their native Aberdeen, with Radiohead blasting in the background. They started with mostly American pale ales, a kind they liked to drink but couldn't easily find at the local liquor store. (Their expertise in American styles

© PHOTOGRAPHS COURTESY OF BREWDOG

is part of what makes them so hopped up to break into the U.S. market.)

In 2006, when both were 24, they entered one of their creations in a London tasting event and won. It was a life-changing moment. Within a year the duo decided to quit their day jobs. They took out a 30,000-pound loan (the equivalent of a bit more than $50,000 at the time) and went into business doing what they love. Watt, a former ship's captain, handled the business side. Dickie, the brewmaster, oversaw production.

At first they sold their beers out of the back of their Volkswagen Golf at festivals and farmers' markets around Scotland. "We bottled everything by hand back then," Watt says. "We were just two guys and a dog. A few dog years later and we're at 650 employees."

BrewDog's big break came in 2008 when it landed a contract to sell its beers in Tesco, the U.K.'s biggest grocery-store chain, giving it a national footprint. Riding the popularity of its Punk IPA brand, BrewDog began selling abroad within three years of launching. Today it operates 50 bars in cities around the world, including Tokyo, Rome, and São Paulo.

LIKE A LOT of new businesses, BrewDog struggled to raise capital in its early years, a challenge that was exacerbated by the financial crisis. So the company improvised, turning to its customers for equity crowdfunding. Through four rounds in Europe, the tiny droplets of capital from fans—the average investment is between $400 and $500, according to Watt—have added up to 26 million pounds ($32 million).

Now BrewDog is replicating that approach in the U.S. In August it launched "Equity for Punks USA," directed at American investors. For a minimum of $95, investors get two shares in its American affiliate, BrewDog USA Inc. As with most crowdfunding efforts, the more you invest, the more goodies you get. For those who buy more than $50,000 worth of shares there's a free trip to Scotland to tour the brewery with the founders.

Equity crowdfunding on this scale is new in the U.S. The Securities and Exchange Commission green-lighted it in June 2015 as part of the JOBS Act. The Obama administration hailed equity crowdfunding as a faster, simpler way for startups to raise capital. In truth, the process may be streamlined relative to a traditional offering, but Watt was still overwhelmed by the quantity of paperwork. "We had to have the SEC sign off on 200 pages of documents," he says. BrewDog is one of the first craft brewers to test equity crowdfunding in the U.S. (By contrast, in late October, 26 brewers were trying to raise smaller sums on the far less scrutinized platforms Kickstarter and Indiegogo.)

"WE WERE JUST TWO GUYS AND A DOG. A FEW DOG YEARS LATER AND WE'RE AT 650 EMPLOYEES."

So far the company is off to a slow start, with no sign it will reach the $50 million target it originally set. Halfway into its six-month campaign, according to Watt, the company has raised $2.9 million. With its Ohio construction budget already allocated from the company's regular budget, he professes to be unconcerned. Watt says $5 million is a more realistic fundraising goal. But to hit even that modest target, BrewDog will need to find new ways of generating attention.

And that, of course, has always been the company's strong suit. Watt and Dickie are already known to some in the U.S. They're the stars of a TV series, *Brew Dogs* (think two genial Anthony Bourdain–like hosts sampling the local brews in different U.S. cities), albeit one that aired on cable's lightly watched Esquire Network through 2015. And their various social media feeds teem with hundreds of thousands of craft-beer fanatics. In fact, it was BrewDog Twitter fans from Columbus who persuaded Watt to make it the company's U.S. base of operation.

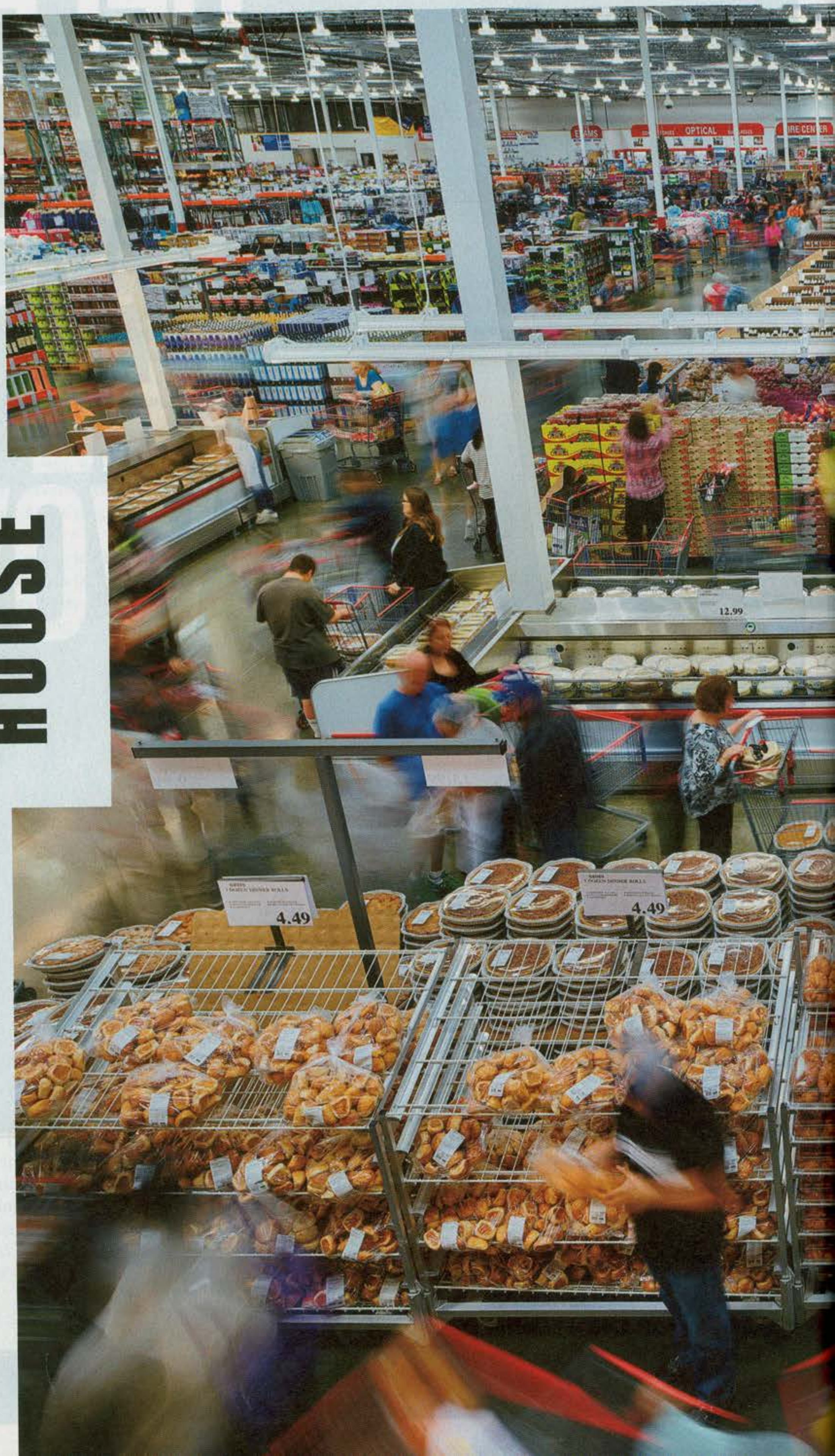
BrewDog also engages in more traditional "social" marketing. It recently hosted 1,000 craft-beer lovers and local rock bands at its first U.S. AGM—"annual general mayhem"—meeting, a brewski-and-business confab on its Columbus property. But whether that celebrity translates into new customers, let alone new investors, nationwide is far from certain.

In his book, *Business for Punks*, Watt wrote that the best way for a startup to stand out in a tough market is to take risks. He certainly followed his own advice with the Elvis stunt. It may not have amused Authentic Brands (an ABG spokesperson says the proceeding against BrewDog continues), but it did generate plenty of attention, which put BrewDog's crowdfunding campaign back on the radar.

Still, the whole affair left Watt in an awkward predicament. "At the moment my legal name is still Elvis. I plan to change it back at some stage," he says. "I'm just not sure when I'll be able to." F

BY
NEAL
GABLER

THE MAGIC IN THE WARE-HOUSE



PHOTOGRAPHS
BY
SPENCER
LOWELL

COSTCO

became a phenomenon by doing things its own way. But with Amazon ever more powerful, millennial shoppers burgeoning, and a new generation of leaders awaiting its turn, can the company preserve its edge?

Two days before Thanksgiving, Costco's store in Torrance, Calif.—a new 165,000-square-foot behemoth complete with a car wash and a hearing-aid center—buzzes with activity.

YOU WOULD NEVER GUESS BY LOOKING AT IT

that the eerily quiet, nondescript beige-and-red-brick office complex in the bucolic Seattle suburb of Issaquah, at the foot of a small mountain range called the Issaquah Alps, would be the nerve center of one of America's corporate behemoths. The security guard doesn't just wave you through; she takes time to chat with you. The reception desk has a plate of cookies, and the receptionists encourage you to take one. There is no bustle, only a sense of calm, which is especially striking, since this is the sort of week that would typically engender corporate jitters.

It's the week when Costco Wholesale, the world's third-largest retailer, with $116 billion in sales in fiscal 2016, is hosting a triple-header: its monthly budget meetings, with managers flying in from all over the world; its board of directors' meeting; and, at week's end, its annual stockholders' meeting. As the tribes gathered, Costco faced some headwinds. In a sector known for thin profit margins, there was always the threat of intensifying competition, especially from e-commerce retailers like Amazon. There was the challenge of attracting millennials. There were weakening sales at Costco's overseas stores due in part to currency fluctuations. There was the pending transition from a Costco-branded American Express credit card to a Visa card, which would turn out to be a logistical nightmare.

But none of these issues seemed to faze Costco's leaders. They know that their big-box stores make the company appear to be a tortoise in a hare's digital world. Still, they're confident they will win the race. Costco always has. But there was one thing they have been mulling for a long time. And it has nothing to do with economics, at least not directly. It has to do with identity.

Costco acts more like a cheerful cult than a hard-driving business. Its executives are proud of the fact that the company promotes almost exclusively from within. Even CEO Craig Jelinek, 62, plainspoken and without affectation, once collected shopping carts at a Costco predecessor, and 98% of the company's store managers have risen through the ranks. Its top executives have been working together for 30 years, more or less, which makes them family as much as colleagues. It also means there are a lot of gray heads now at those budget meetings.

And therein lies the concern. At that month's meetings, there were warm and wistful send-offs for six of those gray heads, all senior vice presidents, now retiring. And even though they would be replaced by younger Costco lifers, the succession raises a question: As the company approaches its 35th anniversary, will the replacements keep Costco as Costco?

AT COSTCO that isn't just a question. It is *the* question. Lots of companies brag about their culture. But few are as proud of it or as dependent upon it as Costco is. Goldman Sachs retail analyst Simeon Gutman calls it a "super-culture," which he describes as, "If we continue to serve and delight our customers, they'll want to keep coming back."

Costco is a retailing colossus. Its worldwide sales trail only those of Walmart, which has 11,528 stores to Costco's 715, and Amazon, which just climbed into second place. Costco is the world's largest seller of choice and prime beef, organic foods, rotisserie chicken, and wine (!), and it moves more nuts than Planters. Its private label, Kirkland Signature, which sells everything from packaged goods and beverages to apparel, generates more revenues than the Coca-Cola Co.

But Costco, big as it is, prides itself on not being your typical multibillion-dollar company. That is where the culture comes in. Executives frequently answer their own phones. ("I may get a call from a cashier," admits CEO Jelinek, "who says, 'I'm not getting enough hours.'") Its offices are open door. And it takes a journalist forever to arrange a visit, not because the company is secretive, but because it doesn't feel the need to have a public relations department to make arrangements.

CRAIG JELINEK, CEO ▸

THE PERILS OF AN OPEN OFFICE: "I MAY GET A CALL FROM A CASHIER WHO SAYS, 'I'M NOT GETTING ENOUGH HOURS,'" SAYS CEO JELINEK.

o
In 2016 the company moved 116 million pounds of strawberries in the U.S. Costco also accounted for 13% of all the blueberries in the world.

o
Frankly, Costco's hot dog sales are jumbo size. The company also sold 132 million frankfurter-and-soda combos (for $1.50 each).

Then there is the way it treats its employees. Costco pays them well—an average wage of $22 per hour, vs. $13.38 at Walmart—and provides generous benefits like full health and dental insurance even to its part-time employees; a 401(k) with stock options after a year; and liberal vacation time and family leave. Zeynep Ton, an adjunct associate professor at MIT's Sloan School of Management, says Costco employees are given greater

© JELINEK: FRANCE FREEMAN—COSTCO

HOW DOES COSTCO STACK UP?

83 MILLION
NUMBER OF ROTISSERIE CHICKENS COSTCO SELLS EACH YEAR

responsibilities too, which makes them a happy and highly motivated workforce. "They are constantly innovating, constantly improving, and that's why Costco can pay them a lot," says Ton.

"People will bang down a door to come to work for Costco," says Craig Wilson, vice president of quality assurance and food safety, and an 18-year Costco veteran. And once there, just about no one leaves. The company's retention rate for employees who have been there a year is 94%. "You couldn't throw enough money at me to make me leave this company," says Paul Latham, VP of membership, marketing, and Costco Services, with 37 years under his belt. "I love it." And if nobody leaves, almost nobody gets fired either. When the recession hit and most companies were laying off employees, Costco's brain trust didn't let anyone go. "It wasn't even something that we thought about," Jelinek says. Instead, the company actually raised wages.

CLAUDINE ADAMO is one of those employees. And she is Costco's future. When Adamo, now 46, graduated from Western Washington University, where she majored in finance marketing, she applied to Costco because her two older sisters were working in the company's accounting department. Her initial dream was dashed when, hoping to land at headquarters, she was told that everyone at Costco starts in the warehouse, which is what the company calls its capacious stores. Adamo swallowed her pride and went to Kirkland, where she greeted members and checked receipts. "My friends thought I was crazy," she says.

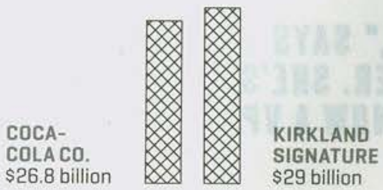
Now, 25 years later, she is being groomed for the next executive cohort, which will one day replace Jelinek and his team, even as she and her fellow VPs are already identifying candidates for the cohort after her own. In many ways, her story is typical of Costco's leadership.

Adamo has spent her entire career at the company. After a year at the warehouse, she became an inventory-control specialist doling out candy to warehouses in the northwest region. Her company voyage continued: assistant buyer for candy, buyer for the company's mail-order operation (which morphed into Costco.com), computer buyer for all the warehouses, general merchandise manager to open a regional office in Southern California. Adamo then returned to Seattle as VP of the home division for furniture, small appliances, and housewares. She is now VP of consumer electronics, jewelry, and office.

It has been a long journey, but the journey is the reason she

At top, rotisserie chickens. Delight is crucial to the Costco formula. The chain periodically sells items such as stuffed bears (and even Picasso paintings in the past) that keep customers coming back for more than staple supplies.

2015 REVENUES



COSTCO GLOBAL SALES RANK

BEEF NO. 1 [USDA CHOICE] **NUTS** NO. 1 **WINE** NO. 1 [FINE WINES]

$4 BILLION
ORGANIC FOOD SOLD AT COSTCO [2015]

1.4 BILLION
ROLLS OF TOILET PAPER SOLD [2015]

believes Costco won't succumb to the lure of the next trendy idea. "At Costco, you really start at the bottom, work your way through every position, learning along the way," as she puts it, "growing up within the environment."

Just about every executive has grown up that way, including CEO Jelinek. "I know what it's like to shag carts," he says. "I know what it's like to clean bathrooms. I can come in and tell you where you missed the tiles around the urinals. I know what it's like to cull produce or to grind beef. So when you talk to people, it's not somebody coming in off their white horse. They know you've been there and done that." Longtime CFO Richard Galanti has a term for the company's culture: "jerk-free."

TO A PERSON, everyone at Costco will tell you that its culture comes directly from Jim Sinegal, now 80, a short, grandfatherly man with a brush mustache. He was Costco's cofounder and its CEO from 1983 to 2012, and he is still a daily presence at the Issaquah headquarters. Sinegal in turn attributes his business philosophy to Sol Price, a gruff attorney who founded FedMart in 1954 in San Diego—the original warehouse store that sold in bulk, primarily to small businesses, at good value. Sinegal began working at FedMart as an 18-year-old college student and became Price's protégé, subscribing to the golden rule of business that Price drew after seeing people gouged during the Depression: Always do the right thing.

In 1983, Seattle attorney Jeffrey Brotman approached Sinegal with the idea of opening their own warehouse store. They conceived of it as more than a company. It was a mission—as much a way of doing business as a business itself. "Do the right thing" was and still is the company mantra. It may sound corny—or like an empty slogan—but employees really try to live up to it. (Adamo says she hears the phrase every day.)

It means never trying to gouge vendors or customers or employees. It means facing up to mistakes and making them right without being forced to do so or making excuses. (When they discovered that a shirt they had advertised as 100% silk wasn't actually silk, they contacted each purchaser and refunded the money.) It even means maintaining a return policy without restrictions, though they know it's abused by some customers. "I always thought I was pretty good and honest and reputable, and I do think I am," CFO Galanti says. "But then you meet Jim, and you go, 'Whoa!'" As Sinegal puts it, "Culture is not the most important thing. It's the only thing."

Though the moral imperative was stern, Sinegal's management style was anything but. He created an informal, unintimidating environment in which no one was afraid of making mistakes and no one was jockeying for position. Egalitarianism permeated everything, from Sinegal, and now Jelinek, taking a substantially lower salary than most other corporate executives of their standing ("I make more than I'll ever spend," says Jelinek, who earns a base salary of just under $700,000) to assigning parking spaces on the basis of seniority, not hierarchy.

Costco, says Zeynep Ton, has a "laser focus on creating value for the customer," and its operating system is dedicated to benefiting customers, not investors. "You look at a traditional retailer, and he'll say, 'I'm getting $29 for this item,'" says Sinegal. "'I'd like to get $35 for it.' We look at it and say, 'I'm getting $90 for it. I'd like to get it down to $18 or $17.' And that's got to be the MO of running your business. You have to constantly think, How can we bring goods and services to market at a lower price?" Sure, he says, people like the fact that Costco pays its employees well. "But," he jokes, "if we raised the prices a little bit, I think they could get past that."

Costco is a lean company. The company's spending on basic overhead—the selling, general, and administrative category—is only 10% of revenues, compared, for example, with about 20% at Walmart. Among Costco's efficiencies are the fact that it doesn't advertise; it has a limited selection—only 3,700 products compared with 140,000 at a Walmart superstore and half a billion at Amazon. That allows Costco to drive hard bargains with suppliers. And it has created a distribution system that, according to Galanti, fills 95% of its freight capacity, an unheard-of number.

Costco has to be lean because Brotman and Sinegal long ago established a rule that no branded item could be marked up more than 14% and no Kirkland Signature item more than 15% over cost. It is an inviolate line: the very value proposition of the company. (Prices are partly offset by a $55-a-year membership fee, which customers pay for the privilege of shopping there and which constitutes 3% of Costco's profits.) As it has worked out, given the very low profit margins on items like gasoline and ground beef, the average markup at Costco is 11%, which compares with markups of nearly 24% at Walmart, 30% at supermarkets, and 35% at Home Depot and Lowe's.

Costco is determined not to let any store undersell it. "We look at anyone who beats our price," says Nancy Griese, VP of corporate food and sundries, and Costco will change its price to compete "by sundown." Still, Costco will never sell at a loss.

Sinegal had one other inviolate value proposition: Inexpensive couldn't mean cheap, because he knew Costco would lose customers that way. "Quality, quality, quality," says Doug Schutt, Costco's chief operating officer of merchandise. "Our biggest challenge is making sure the quality is what we say it is." Costco has a stringent quality-assurance program to test

◀ **CLAUDINE ADAMO** VP, consumer electronics, jewelry, and office

"MY FRIENDS THOUGHT I WAS CRAZY," SAYS ADAMO ABOUT STARTING AS A GREETER. SHE'S STILL AT COSTCO 25 YEARS LATER—NOW A VP.

everything from the size of cashews to the amount of skin left on canned peaches. After the *E. coli* outbreak at Jack-in-the-Box in 1993, Costco was so concerned about its suppliers of ground beef that it built its own beef-processing plant, where the meat is tested every 15 minutes. Now it has even started a pilot project in Nebraska of its own cattle herd.

Costco profit margins are a whisper-thin 2%—a figure that has caused grumbling on Wall Street in the past. Most retailers, needless to say, aim to expand margins. "Our culture is counterintuitive," says Richard Liebenson, who came to Costco from Price Club and is now a member of the board, "paying people the highest wages possible and the best benefits in a business where you're working on a very low margin and you're trying to sell merchandise for as little as you can." But that's because Sinegal always felt if you satisfied customers and employees, you would eventually satisfy investors too.

Nowadays, Wall Street is nearly as smitten with Costco as its 81 million members are. Michael Lasser, a retail analyst at UBS, says it is a matter of the company being true to its founding principles: "delivering high-quality products at very value-oriented prices and being fair and treating its customers and employees with respect." And, he adds, Costco doesn't have to rethink itself to compete with hares like Amazon. "Costco's model remains as relevant today as it was 20 years ago," Lasser says, "and we don't think that is really going to change."

CHANGE IS USUALLY considered a business necessity, but not in Issaquah. Costco executives occasionally invoke Sears as a cautionary tale of a company that was once great and then lost its sense of identity—basically, its culture.

Costco is determined not to let that happen. "The business will evolve," says Jelinek. "You'll make changes. Where they won't be able to change is how you treat people, how you engage people, how you include people. That can't change." Resisting change isn't easy. That topic tends to lead to talk about e-commerce, which Costco has been slow to adopt. For example, rival Sam's Club allows customers to order online, then pick up the order at the store without getting out of their cars. Costco does not offer such a service other than at its pharmacy. For its part, Walmart upped its online-selling arsenal, to better keep up with Amazon, with its purchase of e-commerce site Jet.com. But neither Costco nor Wall Street seems to think the acquisition poses a threat. Costco has its membership fees, and members seem to enjoy the physical shopping experience. Indeed, they've increased their visits from once every 3½ weeks just a few years ago to once every week now.

Galanti addressed Costco's e-commerce issues in some detail on a recent earnings call: "We recognize our site has had some challenges," he told analysts. "You're going to see in the next few months a big improvement in the number of clicks [needed to place an order]. You're going to see in the next six or eight months some big improvement on search." Galanti added, "We've never been big on convenience. Our success has been based on price and value, quality and quantity at the lowest possible price. We do appreciate that value also is convenience. We're going to greatly improve what we do. But it doesn't mean we're going to get something to you in two hours."

Still, if you think Costco should be emulating Amazon, consider this: Jeff Bezos's company has adopted Costco's membership model with Amazon Prime, as one analyst noted to me, rather than Costco adopting Amazon's e-commerce model. Ton even thinks that because Costco has such a well-trained workforce, it may actually be more adaptable in serving customers than e-commerce companies are. Even millennials, who, you might assume, would prefer shopping via their phones, are coming onboard. They're Costco's fastest-growing demographic. Overall, the company's membership is getting younger.

It isn't the millennials outside the company who are the issue; it is the ones in it. Wall Street remains bullish, but analysts have some concerns that Costco might age out of itself. "I think these transcendent cultures probably move from generation to generation," says Goldman Sachs's Gutman, "but we don't have a lot of examples because most retailers are relatively young. We haven't seen a retailer where this generation is going to be exiting at their peak," which is what is beginning to happen at Costco. "So I do worry when a changing of the guard happens."

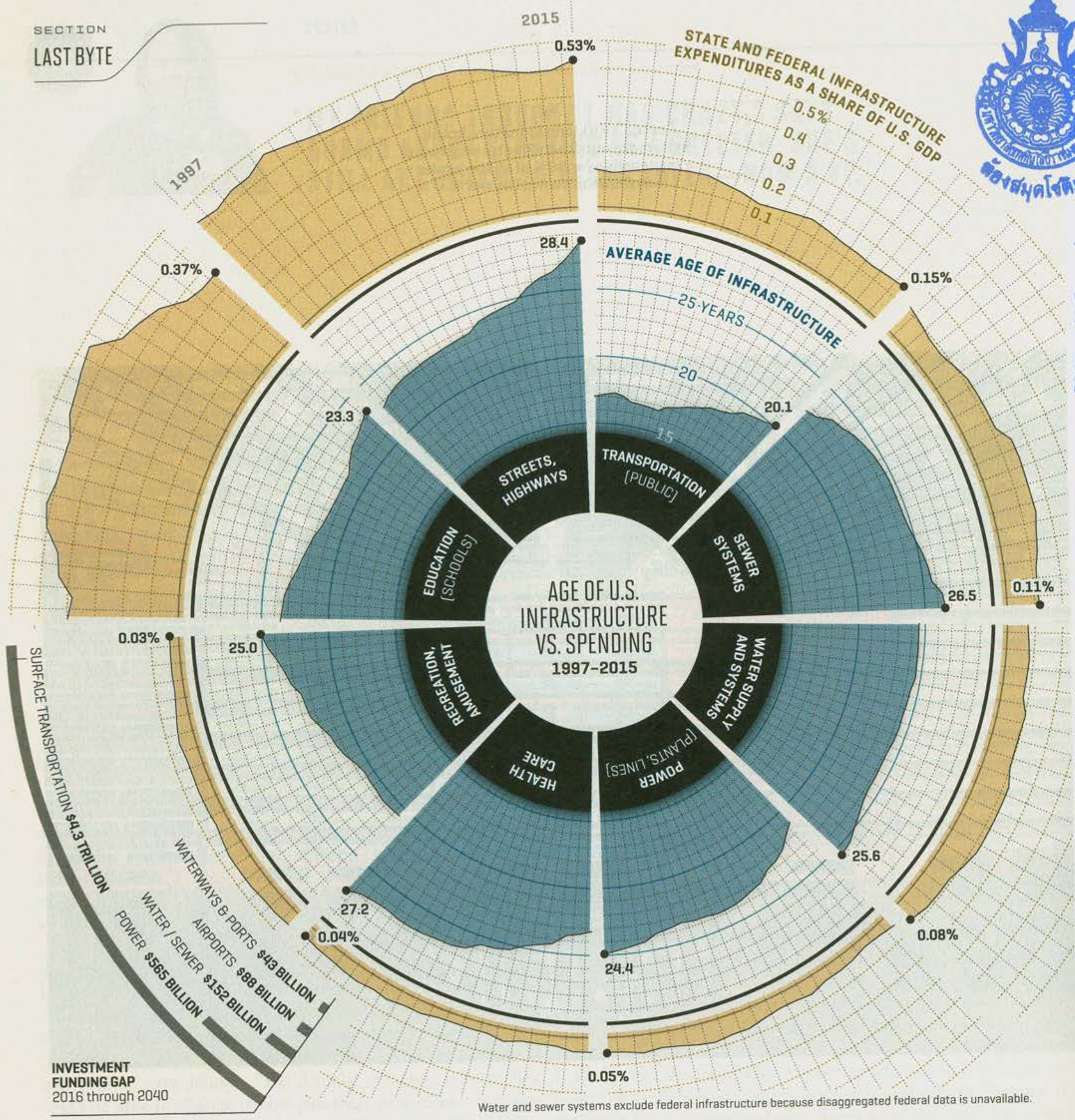
When he retired, Sinegal finessed the problem by tapping Jelinek, then the company president. Jelinek says he is already planning for his own succession, though no one thinks it is imminent. He says the company has a 10-year plan for executive replacements. Before he left, Sinegal had already instituted a program in which he invited rising executives to "get to know each other," says Claudine Adamo, and Jelinek has continued it.

UBS's Lasser is reassured. "They have a very strong bench," Costco's Kirkland Signature brand sells more nuts than Planters and was responsible for 36% of all the jumbo cashews grown in the world.

he says, and in any case "the culture isn't based on a single person." Despite that, there is no guarantee successors will permanently resist the temptation to turn Costco into a cooler, faster, *different* company. "The people who are coming up underneath—do they know the culture as well? Were they born into it? Was it the only job they ever had?" asks board member Liebenson. Those are pressing questions.

Adamo's career answers all of them in the affirmative and adds one more fillip. "When it comes down to the extreme core of what we do," she says, "it truly is that you get not only to do the right thing at work, but it goes to all aspects of your life."

And that is why Costco is likely to remain Costco for a long time to come. It has taken decades to inculcate a philosophy that is now more fiercely held than ever—and it will likely take decades more, and events that are currently unforeseeable, to weaken it. ■



Water and sewer systems exclude federal infrastructure because disaggregated federal data is unavailable.

WHERE TO SPEND ON INFRASTRUCTURE

DONALD TRUMP'S pledge to spend $1 trillion on America's aging infrastructure over 10 years has drawn both praise and skepticism—igniting a debate about how to address a crucial issue. Earlier this year a report called "Failure to Act," from the American Society of Civil Engineers, estimated that inadequate infrastructure spending could cost the U.S. $14 trillion in GDP through 2040. Eventually taxpayers are going to pay for it—one way or another. —**BRIAN O'KEEFE**

SOURCES: U.S. BUREAU OF ECONOMIC ANALYSIS; AMERICAN SOCIETY OF CIVIL ENGINEERS

GRAPHIC BY NICOLAS RAPP