NEUBERGER BERMAN





DISRUPTION JUNCTION IN AN ERA OF TECHNOLOGY-DRIVEN CHANGE, WHAT'S AN INVESTOR TO DO?

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Change Is Looming and Not Just for Markets



2017 was a banner year for equities. Accelerating global growth, complemented by low inflation, still-loose monetary conditions and optimism about pro-business economic policies, helped spur major indices to double-digit gains, with non-U.S. markets (particularly emerging) leading the way. The sweeping U.S. tax overhaul, with large rate cuts for corporations and more moderate reductions for many

individuals, added a late adrenaline rush to the rally, and for good reason. The reform could provide an additional 5% increase in after-tax corporate earnings and augurs favorably for buybacks and dividends, as well as potential investments in R&D and hiring that could further bolster the economy.

Still, we see signs of strain in the current "Goldilocks" environment. Inflation seems likely to creep up this year, which could prompt more monetary tightening and further reduction of central bank balance sheets. China's efforts to curb its "shadow banking" system could crimp the country's growth, with knock-on effects on the global economy. Meanwhile, politics remains a wild card as elections in Italy and Brazil, coalition talks in Germany and negotiations over Brexit, not to mention the Mueller probe, contribute to uncertainty. Although we wouldn't call asset valuations extreme, they do merit some caution even as investors appear to be growing more complacent. In sum, we believe current economic momentum could drive markets for a few months, but by the second half of the year, conditions may become more turbulent.

With this backdrop of potential transition, the focus of the current *Investment Quarterly* is on change—specifically the technology-driven disruption that is remaking much of the economy. Our lead article takes a broad look at disruptive forces and how Neuberger Berman analysts and portfolio managers are adapting to assess risk and capitalize on new opportunities. In a companion piece, the firm's chief data scientist explores "big data" as a powerful source of investment insight. Articles on other topics include retirement income generation, tax reform highlights, the benefits of Delaware trusts and our "Ten for 2018" investment themes.

I hope you enjoy *IQ*. Please contact your Neuberger Berman representative with any questions about the markets or your portfolio.

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JOSEPH V. AMATO President and Chief Investment Officer – Equities

Asset Matters



DISRUPTION IS ACCELERATING

84% of executives surveyed believe their industry has reached a point of disruption or will within the next few years.



Source: Harvard Business Review, 2016.

Disruption Junction

In an era of technology-driven change, what's an investor to do? We look at the current trends and how they can affect portfolio strategy.

INVESTMENT STRATEGY GROUP

Recently, Yan Taw (YT) Boon was in rural China, where he tried to purchase a soda from a local mom-and-pop store. To his surprise, the 80-year-old shopkeeper refused to accept his cash, insisting that he use Tenpay, which is a Chinese mobile payment app. Despite her claim that "Everybody has Tenpay!", the Neuberger Berman tech analyst did not (as the app is not commonly used in Hong Kong, where he lives), and he was forced to ask a local acquaintance to pay for his drink. Later, he learned that most of his friends in China hadn't used cash for at least a year, given the gravitation toward mobile/online payment.

This anecdote, which says something about the popularity of "fintech" (it is far-reaching in emerging markets), is probably even more significant in highlighting the ways in which technology is insinuating itself into our lives and activities, from the most basic (buying a soda) to the more complex (keeping calendars, managing relationships, driving a car), and turning upside down prevalent relationships and practices in the process.

It's not that progress is new. Innovations have come at a furious pace in recent decades, whether with the rise of the semiconductor, the growth of the personal computer, or the explosion of the internet and "all things digital" in the 1990s and early 2000s. But now, there's something tangibly different about the degree to which technology is becoming intertwined in human affairs.

"At a very high level, I feel we are in an early stage of fundamental changes to how the world works," observes Hari Srinivasan, who also covers tech for Neuberger Berman's equity research team. In the industrial revolution, the steam engine and

E-COMMERCE CONTINUES TO GAIN MARKET SHARE



source: 0.5. Department of Commerce.

other machines stepped in to augment humans' physical power. We are entering an age in which the physical economy is giving way to a digital economy in which thinking machines are becoming increasingly viable.

Technological innovation often accelerates in challenging times, and, in Srinivasan's view, the current surge has its roots in the financial crisis of 2008, during and after which many companies doubled down on tech as a way to cut costs. With the rebound in the economy, their focus continued as a way to maintain and raise profitability, create new products and invade other business sectors. The current efforts have coincided with the rapid decline of computing costs, combined with the maturation of four key building blocks of innovation: the cloud, social platforms, mobile and analytics.

DIGITAL DRIVERS

The cloud has served as an engine for refashioning and introducing new services for consumers, as well as for rethinking the practices of businesses, large and small. The ability to leverage outside digital infrastructure produces major cost savings to existing players and allows startups to act bigger than they are. Meanwhile, native cloud-based providers have been able to create services that aren't dragged down by legacy systems.

Social platforms that have revolutionized the structure of social interaction have also created an advertising goldmine, changing the way companies interact with consumers and enhancing their ability to create very finely tuned messages calibrated to generate a specific response or action, or to reinforce and encourage certain consumer behavior.

Mobile: Today, nearly everyone travels around with a tracking device known as a cell phone. Myriad apps open up nearly limitless opportunities for enterprising developers, who provide services ranging from the frivolous to potentially essential. The communications provided through apps, e-mail and telephony are a marketer's dream.

Analytics: All of the elements above contribute to the vast treasure trove of data that companies are only beginning to leverage. (Read more about Big Data on page 7.)

The combined impact of these and other advances has been sweeping, fundamentally altering the way companies seek to make money. For example, major web-based providers like Google can offer software and other products for free, monetizing them through the use of advertising, which leaves more traditional providers with limited means to compete. And Amazon uses its online product sales to support its more lucrative businesses of cloud and third-party services, as well as advances into logical business extensions, like groceries. Meanwhile, its broad geographic reach, low prices and virtually unlimited inventory make life very difficult for brick-andmortar retailers.

More broadly, we are seeing an advancing digitization of the corporate world, as companies are continually reassessing their practices and business models. Product development, for example, has historically been an arduous process. Firms developed a prototype, had meetings with customers, made adjustments and repeated the process until they felt confident enough for a release. Now, in some cases, companies may release a product on their consumer website, adapt it based on posted comments, and iterate until the kinks are removed. Or they may draw on social media fan pages to assess demand and receive feedback at an early stage.

Digital interaction allows companies to have a far more intimate relationship with customers. At point of sale, they can recommend items that complement a purchase (think spaghetti and spaghetti sauce), add coupon enticements or draw potential buyers into other areas of shopping interest. An active social media presence strengthens their ties to consumers and can protect the brand. For example, when a plane flight is cancelled, staff that monitors social media will react quickly to irate travelers' posts. E-mail and chat are a lot cheaper than a phone call, and they can often provide a higher level of service.

DISRUPTION: AN INDUSTRY SAMPLING

RETAIL: Web-based competition is decimating much of the brick-and-mortar retail sector, with some 50 major bankruptcies and 7,000 store closings in the U.S. during 2017.¹ Luxury-oriented companies and those that can navigate an effective digital/traditional mix likely have a better chance of survival.

AUTOMOBILES: Arguably the epicenter of disruption as electrification, ride-sharing and automation combine to potentially remake how we interact with cars on a daily basis. Major players are busy testing autonomous cars and gathering data to improve decision making.

ENERGY: Use of big data and other tech innovations have helped North American shale producers become low-cost sustainable production powerhouses. This has changed the flow of commodities around the world and pressured more challenged, higher-cost energy producers that are dependent on oil and gas for revenues. The spread of electric vehicles could stress global power grids, leading to more natural gas-fired power plants.

HEALTH CARE: Recent proposed mergers reflect the melding of various components of the health care sector, which is becoming increasingly "high touch." Expect more digital health apps and tools, aided by artificial intelligence capabilities, to complement the traditional doctor/patient relationship, although regulators will ensure that widespread adoption occurs at a measured pace.

FINANCE: Bitcoin, the volatile cryptocurrency, has grown more popular; recently, Bitcoin futures started trading in the U.S. Other innovations such as payment apps, robo-advisors and online lenders are also gaining traction—particularly in regions of the world with less existing financial infrastructure.

¹Source: Fox Business, Dec. 21, 2017.

SOCIAL MEDIA HAS INTENSIFIED INTERACTION WITH CUSTOMERS

Percent of all American adults and internet-using adults who use at least one social networking site.



Source: Pew Research Center surveys, 2005-2006, 2008-2015. No data are available for 2007.

The changes are not just in the realm of internet, retail and consumer businesses. In manufacturing, digital approaches have provided for unprecedented transparency across the whole supply chain, and allowed for interaction that is far more collaborative, efficient and adaptable—for example, reacting to issues such as supply disruptions of a particular product or changes in customer demand. That's not even going into the advances in systems, robotics, wireless and 3D printing, which have altered factory and assembly floors across industries (see "Disruption: An Industry Sampling").

If trends weren't already fluid, the specter of artificial intelligence has introduced new potential (and some anxiety) to the business and personal landscape. "AI" is not a new concept, and has been a research focus since World War II, as experts have tried to imitate and improve upon processes of human thought. However, thinking machines didn't become a tangible possibility until silicon-chipdriven processing speeds accelerated and data became more plentiful-first with the advent of the internet and later with the spread of mobile phones. AI is appearing incrementally in smart apps for homes, retail websites, fintech applications and the broad trend of the "internet of things." And it is a key building block in the autonomous car revolution and the future of robotics, whether for factories, retail or business use. Familiar large tech names dominate AI capabilities today, but YT Boon, who has studied the area extensively, thinks it's likely that major players in health care, finance and other industries will become more active given the extensive proprietary data they control.

There is much work to be done on the AI and robotics front. Machines are very good at repetitive tasks, but are far more challenged when it comes to dealing with the random variables



SECTORS LEADING AI ADOPTION PLAN TO CONTINUE SPENDING

Source: McKinsey Global Institute AI adoption and use survey, June 2017.

¹Average estimated percent change in AI spending, next 3 years, weighted by firm size.

²Percent of firms adopting one or more AI technology at scale or in a core part of their business, weighted by firm size.

that the human brain has become accustomed to. (Picking different items from a bin is still a major challenge.) Moreover, even though considerable data has been accumulated, much more is needed, particularly in autonomous driving, where the world literally needs to be mapped, and you see infinite variables such as weather, road repairs, poor drivers and the like.

Says Boon, "We are still in early days."

PORTFOLIOS: MINING FOR—AND AVOIDING— DISRUPTION

With all the changes, a key challenge for portfolio managers is how to bring disruption into their game plan, whether to capitalize on opportunities or to mitigate downside risks.

A few years ago, alarm bells went off for Elias Cohen, tech analyst and portfolio manager for Neuberger Berman's Global Equity team, when he attended a conference on "business intelligence." The upshot was that technology was moving from a back-office driver of cost savings to an existential game changer and revenue driver. He came back and argued to colleagues that they needed to ask every company, no matter what the sector, what their digital strategy was—a practice that they adopted and continue today.

For Cohen, in the context of the team's quality-at-a-reasonable-price discipline, the primary goal is fairly simple: avoid the "disruptees" and invest in disruptors or companies that won't be victims of the disruption. "What I'm concerned about, first and foremost, is avoiding the things that can get disrupted and blow up." He can rattle off various sectors that at one point might have been attractive but have been left in the dust by disruptors: for example, advertising agencies obviated by the dominance of Facebook and

Google online ad dollars (80% market share), traditional retailers crushed by pressure from online sellers, and publishers, who were among the first victims of the internet monsoon.

A common tipoff, in his view, is when customers are overserved provided with services that they like but might do without at a lower price. Town cars or even taxis may offer a better experience than an Uber, but the latter is typically cheaper and probably "good enough," while bringing more customers into the mix.

The fact that a disrupted company has a low valuation doesn't necessarily matter. "The threat of value traps is so much greater than it has ever been before," says Cohen. "When value is the only component of your investment case, and the company doesn't have that clear path out, then for me that's an uninvestable signal—because the franchise will likely keep eroding."

Traditional firms should understand that, even if their business has not yet been affected, there may be potential disruptors out there that apply different rules of engagement, or are incentivized in different ways. In assessing their prospects, an investor should consider whether existing players are taking proactive, thoughtful steps to counter threats and remain viable. Use of data is often critical, observes Srinivasan. In consumer sectors, for example, companies that employ data effectively can better understand who visits their websites, what interests them and how they can be engaged, and then draw on that data to build stronger customer relationships. Contrast that with local TV broadcasters who historically had very primitive information on viewers, making their advertising decisions and measurement a bit of a guessing game.

Gauging Opportunities

Taking a structured approach to assessing change is important. Rick Bradt and Jason Tauber, portfolio managers for Neuberger Berman's Disrupters Portfolio, build their efforts around identifying "optionality" in companies that is not reflected in market expectations. For example, a company that creates and masters enabling technology for one application may have an opportunity to apply the technology elsewhere (e.g., the use of video gaming architecture for autonomous driving and artificial intelligence). The more potential avenues there are for the product, the greater the potential upside for investors. This means that you can worry less about smaller fundamental issues in the current core business and focus more on the larger opportunity set, says Bradt. It also means that a traditional 12-month price/earnings approach to assessing valuation may be a bit shortsighted.

That said, "FANG" and other well-known tech stocks are already recognized and valued for their revenue growth. Srinivasan often argues for "investing in the platform"—looking to industry leaders that have developed self-reinforcing platforms that leverage both their user base and product offerings to grow revenues. However, he emphasizes that given high valuations, waiting for attractive entry points can be a good approach.

More generally, a selective value investor who's willing to spend time to understand tech disruptions should still be able to find potential bargains in the current landscape. Some companies that appear to be disrupted may be far more resilient than most investors expect, says Amit Solomon, research analyst and portfolio manager for Neuberger Berman's Intrinsic Value team. This happened, for example, when a leading telecommunications company roiled the telecom equipment industry a few years ago in its move away from networking hardware to software. The change jostled existing suppliers, but provided opportunities for some nimble smaller suppliers that adjusted quickly to the new landscape, as well as for service providers who could help support the telecom company's and other carriers' hardware-tosoftware transition.

In the autos space, the trend of autonomous driving is accelerating demand for advanced components such as electronic chips and sensors. At the same time, Solomon anticipates that sharing platforms could gradually curtail growth in the number of vehicles produced, suggesting that companies benefiting from rapid content growth in vehicles could be preferable to those simply exposed to auto manufacturing volumes.

Even companies making disrupted products that could gradually become obsolete may present an opportunity at the right price. Many of these companies offer strong cash yields from their existing products that can be returned to shareholders or used to grow new businesses. Finally, it's worth remembering that a "disruptive" company won't necessarily be successful. For instance, the market for meal kit delivery has been growing, but low barriers to entry, high "churn" and steep customer acquisition costs have made it a difficult area in which to invest. "There are plenty of examples like that," says Tauber. "It's not just having the disruption alone but having something that ultimately can be a large and defensible business."

TAKING A STEP BACK

In our view, disruption trends merit a fresh assessment of portfolios. Just as portfolio managers may ask visiting companies about tech-related concerns, clients can ask their managers about tech risks and opportunities tied to holdings, as well as whether the managers are able to utilize new tools, such as data analysis (see page 7), that can enhance the investment decision-making process and the ability to generate returns.

Importantly, it is becoming more difficult to categorize "technology" as a distinct market sector. Yes, many tech firms specialize in providing software, hardware and consulting to traditional players, but many are increasingly applying their core competencies to new areas—not only affecting those they seek to disrupt, but complicating the tasks of portfolio diversification and risk management as they catalyze creative destruction across industries.

Another factor that's harder to quantify (but worth thinking about) is the larger economic impacts of tech disruption. If you read the newspapers, AI and other transformative technologies could create major shifts in employment, geographic concentration and income strata on a global basis. However, the contours of these trends are still quite vague and—bleak scenarios aside—innovations throughout history have often created new types of work and new industries that few would have even contemplated a few years earlier.

In sum, we believe technological change and disruption should be considered across the spectrum of investment research, from micro to macro. It should also play a role in portfolio analysis and strategy, given its potentially significant impact on performance over the long term.

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BIG DATA: The Future Is Here Already

Vast troves of digital information offer a new frontier for portfolio managers.

MICHAEL RECCE — Chief Data Scientist

It's said that 90% of all existing data has been created in the last two years. As people migrate online and become inseparable from their cell phones, their browsing activity and movements, along with satellite data, are being measured and analyzed, offering valuable insights to businesses, and—increasingly to portfolio managers. In my role as a data scientist, I've looked closely at these trends, and share some thoughts below.

DATA IN ACTION

Before I came to finance, I worked as a professor teaching neuroscience and computer science, and helped students start businesses. One startup analyzed bank transactions at large financial institutions to help identify potential money-laundering activity. There were many transactions, but it turns out that accounts owned by terrorists and other criminals don't look like normal bank accounts. A lack of check writing, cashonly transactions, receiving a wire from a charity these were some of the traits that analysis of large data sets could use to help identify the bad guys.

Another venture dealt with online browsing activity the "shoes" that follow you around the internet. In 2009, there were only static ads on all websites. But by



WORLD OF DATA

User Snapshot: Internet, Social, Mobile



Source: Hootsuite.

2014, the majority of advertisements on websites became dynamic and personalized to the user. The advertisements are selected in an auction that takes place as the web page is loading. Worldwide, users visit a new web page a million times per second, and we had a tenth of a second to decide, based on all the information we had at our disposal, what ad to show them and how much to bid for it.

These are two examples of the power of big data. The field of advertising has developed considerable infrastructure around such tasks, and other industries, including Wall Street firms and portfolio managers, are becoming more involved.

And why not? If you know what ad to show someone, you know what they're interested in. If you know what they're interested in across all products and across the whole population, you know who's winning in the marketplace. It's not a stretch to argue that such information can provide a leg up when it comes to investing.

BIG DATA AND FUNDAMENTAL INVESTING

Equity analysts spend a great deal of time analyzing companies—talking to CEOs, reading prospectuses and annual reports, and doing other proprietary research to get an edge. But in the end, there's still a lot that's unknown—which is often reflected in the earnings surprises seen in the market after quarterly reports. A stock price can swing a great deal after the facts are announced, after which it can move over the subsequent three months due to a variety of influences (including momentum) until the next set of concrete facts comes out.

What big data can do, among other things, is to provide a new level of precision regarding what is actually happening on the ground to a business, to help analysts and portfolio managers make choices. In theory, this means that the time between announcements becomes less of a mystery to those who are applying the science.

A simple way of thinking about this is to look at Zillow, the real estate valuation service. Zillow provides price discovery in the real estate space, breaking your house into component parts—bedrooms, bathrooms, square feet, style, age and so on—and then using this information and the price of nearby properties to generate a valuation. Today, research analysts and portfolio managers go through a similar exercise regarding companies that is largely manual in nature. With big data, the notion is that this can be done continuously and for everything traded in a market. It then becomes a question of the advantage provided by having more information about the value of a business.

Let's use the hypothetical of a consumer tech company. Credit card data can show purchases across its businesses—whether tablets, mobile phones, music or laptops— and then each business can be assessed based on growth, geography and demographics. In turn, this information can be aggregated to show a "CEO's dashboard" revealing how the whole company is faring.

RELEVANT IN SURPRISING PLACES

Thus far, the sweet spot of big data has been consumer businesses, but it is increasingly relevant in areas like energy and health care. It's worth bringing in a couple more examples to show how data can enrich analysis:

Energy: Some 20,000 - 50,000 Americans lease their land for petroleum fracking companies, and a number of trusts manage this process, providing royalties to individuals in proportion to oil extracted. By analyzing the aggregate trust deposits into their bank accounts, it's possible to figure out the statistical relationship between the payments and oil extraction generally, thus creating a real-time estimate of U.S. oil production.

Health care: For the last eight years or so, Google has been constructing flu maps based on user web searches for flu symptoms and the geographic clusters they reveal. Search terms can also reflect drug side effects, and the degree to which a side effect is searched can tell you its frequency and level of severity. Under the normal reporting process, if doctors receive enough complaints from patients, they will tell the FDA, which will then do a study before adding a warning to the drug label—reportedly as long as 18 - 24 months after Google data shows evidence for the side effect.

Beyond transaction, browsing and phone location data, satellites are also useful in assessing industrial and other activity. For example, you can look at satellite photos of strip mines in central Australia and see how much ore was removed, and then you can look at the heat signature from a smelting plant, or the cars in the parking lot, or job postings to find out how much work the plant is doing. Then, you can look at what's stacked outside to see how much material has ultimately been processed.

Such information can help you figure out what's really happening to a business. Let's say a company is experiencing 10% sales growth. How is it getting that growth? Is it adding new customers or squeezing existing ones? Is it offering discounts that will hurt its earnings down the road? The data that provides the answers is available to those with the technical ability plus insight to reveal and use it.

Of course, you have to be very careful about false, misleading or useless data. In one instance, a large store in California appeared to be getting peak customer traffic at 8 a.m.—two hours before it actually opened for the day. So, we called the company that provided the data and suggested that they were mistakenly including cars traveling on Route 101 (right next door) in their numbers. They denied it at first, saying that they had excluded vehicles going over 20 mph, but it turns out that, in rush hour, Route 101 slows to a crawl—enough to place all of its traffic in the data set.

LOOKING AHEAD

Where is all of this going? At the moment, big data represents an enticing but underused resource, and many folks don't yet know how to get their arms around it.

On Wall Street, a key issue is cultural. Portfolio managers are used to thinking about tech workers as providing infrastructure, securing information and, if you are lucky, creating cost savings. Another challenge is structural. Many firms want their new systems to be compatible with existing ones to save money. But they probably should take a lesson from internet companies, which are dependent on computing advances for survival and thus are constantly rebuilding their software.

As author William Gibson has said, "The future is here already it just isn't very evenly distributed." Big data is open for business, and some investors are starting to take advantage of it while others are not—in my view, to their detriment. The idea is not that data will take the place of judgment, skill or industry knowledge. Rather, it is something that can help managers make better decisions, and potentially enhance their ability to generate performance for clients over the long term.

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THE WIRED LANDSCAPE CONTINUES TO EXPAND

Connected Devices Globally (bn)

Source: Ericsson, 2017. *Internet of things.

Financial Fitness



The Retirement Income Puzzle

Making smart choices about how much to withdraw and from where can help keep your retirement plan on track.

STEPHEN POLIZZI, CFP[®] — Director of Financial Planning

The retirement wave continues. Every day until 2030 over 10,000 U.S. baby boomers will reach retirement age,¹ according to Pew Research Center projections. For many in this group, the steady paycheck relied upon during their working years will be reduced or come to an end. In its place will be a "retirement paycheck" that will need to be generated from other income sources, including retirement savings.

How they do so will be of exceptional importance to their financial well-being and affect their ability to leave a legacy to heirs. Thus, we believe those facing retirement should take stock of their potential resources and be cognizant of minefields that could be waiting down the road. The time to set your plan in motion is not once you retire, but much earlier, so you can seek to strategically position your retirement resources to help optimize both income potential and portfolio longevity.

Below are three key steps in income planning, from assessing your needs, to gauging your "income gap" or the investment assets you will draw upon, to identifying the appropriate accounts from which

to make withdrawals at a given time. All are essential to solving the retirement income puzzle.

1. UNDERSTAND YOUR 'RETIREMENT'

Retirement means different things to different people. Some will walk away from their jobs altogether, while others may scale back their hours but remain in the workforce to stay busy and intellectually challenged. Their choices may result from personal interests and/or hobbies or the extent of their resources.

The first step in any retirement assessment is to estimate how your level of spending may differ from your current patterns. Those who already incorporate this exercise in their planning regimen will find the process much easier than those who have never analyzed their spending habits before—but it's never too late to get started. As with any plan, it is best to be conservative and account for various contingencies (illness, new expenses, investment losses) as often things will not work out exactly as anticipated.

This can be an eye-opening experience. If you ask people about



RETIREMENT PLANNING IS ABOUT MORE THAN BUILDING A LARGE NEST EGG. BEING THOUGHTFUL AND TACTICAL ABOUT WITHDRAWALS IS ALSO CRUCIAL. their living expenses, they often underestimate what they actually spend. Commonly in today's digital economy, transactions occur via credit and debit cards, and through automatic payments directly from bank accounts. So, it's easy to lose track, reinforcing the importance of reviewing spending on a regular basis, typically at least once a year. You should dedicate as much time as necessary to this step—you want a clear picture of your retirement living expenses before, not after, you've retired.

2.IDENTIFY YOUR INCOME GAP

After you have estimated your likely retirement living expenses, you will need to determine all of your retirement income sources. Common income sources include Social Security, pensions, part-time employment, and trust and/or rental income. Investment cash flows should also be considered, including required minimum distributions (RMDs) from tax-deferred accounts, along with qualified dividend income, interest and capital gains distributions from taxable accounts. We will handle these one at a time.

First, **Social Security**. Most individuals will be eligible for Social Security retirement benefits, whether based on their own work history or that of a spouse. Your annual Social Security benefit is calculated by taking your (or your spouse's) "indexed monthly earnings" from up to 35 years of work, and applying a formula to that number to find your "primary insurance amount." That figure is then affected by when you start receiving payments. Benefits can begin as early as age 62, but in that case will be lower than if you waited until full retirement age (65 - 67, depending on when you were born) or later. Every year you wait (until a maximum of age 70) translates into an annual increase of 8%.

Next come **retirement plans and accounts**. For the lucky few who belong to a *defined benefit* pension plan, such payments should be included as part of overall income. Years ago, pensions provided the bulk of income for many retirees. But many employers have either frozen or eliminated them in favor of *defined contribution* (DC) plans such as the 401(k)/profit sharing, 403(b) and other deferred compensation plans like the 457(b) for government employees. This has shifted the burden of saving for retirement from the employer to the individual. The assets in such plans are now often among the largest components of a typical retirement portfolio. IRAs are considered to be part of this bucket.

Finally, your **savings and taxable investment accounts** can also help fund your retirement paycheck. Personal savings are commonly referred to as "the third leg of the retirement income stool," given that Social Security and retirement accounts can only go so far. So, it's a good idea to build up personal savings and investments as well. The interest and dividends provided from these accounts can help meet income needs, while the gradual drawdown of principal may also be appropriate in some cases.

Other resources may include executive retirement compensation, rental income from investment property, fixed annuity payments or income from family trusts—there is no one set formula. However, using a combination of income sources can provide added flexibility in constructing an efficient income withdrawal strategy.

3.BE STRATEGIC WITH WITHDRAWALS

Retirement planning is about more than building a large nest egg. Being thoughtful and tactical about withdrawals (from which accounts and when) is also crucial. How do you decide?

Generally speaking, it often makes financial sense to withdraw from your retirement assets in the following sequence: taxable, tax-deferred and, finally, tax-exempt and/or

tax-free assets. On its face, this order seems very logical as you ideally want to manage withdrawals for maximum tax efficiency—i.e., go for assets whose sale/distribution will be taxed less.

But is this always the best roadmap to follow? One caveat is that by spending down your taxable accounts you may reduce your withdrawal flexibility in the future. An example will help here.

Hypothetical: Withdrawal Choices

Let's assume that you have a \$2 million retirement portfolio consisting of \$400,000 in taxable accounts, \$1.2 million in tax-deferred retirement accounts and \$400,000 in a tax-free Roth IRA. For purposes of this example, the annual "income gap" you need to cover is \$80,000 or 4% of initial portfolio assets.

How might you withdraw the money from those accounts? One approach might be to take the \$80,000 exclusively from the taxable accounts first to allow the retirement account assets additional time to grow tax-deferred (and, in the case of the Roth IRA, tax-free). Assuming portfolio-wide returns of 5%, the taxable accounts will be depleted in just over 5.5 years' time. Meanwhile, the tax-deferred IRA will continue to grow since it has been left untouched along with the Roth IRA. Once the taxable account is depleted, withdrawals would come from either the tax-deferred IRA or tax-free Roth IRA.

Unfortunately, distributions from traditional IRAs are generally taxable at relatively high ordinary income tax rates. Assuming your income needs stay the same, you will likely have to pull out extra funds to cover the tax cost. And the additional withdrawals could actually push you into a higher tax bracket in the latter part of your retirement, when you are already burdened with taxes from RMDs. (Retirees generally must start making withdrawals from traditional tax-deferred accounts shortly after they turn 70½.)² Although it's usually a good thing to generate retirement growth, disproportionate gains in your IRA could mean that the asset levels used to calculate your annual RMDs may be higher—pushing up the minimum withdrawals and the taxes they trigger.³

MAINTAINING A CAREFUL BALANCE

This is not to say that making most withdrawals from your retirement accounts is appropriate either—after all, you do want tax-deferred growth. Perhaps the solution is somewhere in the middle. Indeed, recent studies suggest that *strategically* withdrawing from taxable, tax-deferred and tax-free resources may be a preferred approach.

For example, before RMDs begin, you may enjoy years of very low taxable income. In that case, you may want to consider being more strategic and distributing income from your tax-deferred assets first, up to the 12% marginal tax bracket. Also, in lowincome years, a Roth conversion may make strategic sense to position assets for future tax-free growth over your lifetime and the lifetimes of your heirs. Roth conversions are initially taxable, but after that assets and future growth are never taxed again. And Roth IRAs are also not subject to the same RMDs as traditional IRAs and 401(k)s, so they potentially have a longer period to compound tax-free.

Along these lines, in years when income is higher, you might consider withdrawing some of your income from tax-free sources with the goal of staying at or below certain income tax thresholds—for example, in order to manage the tax treatment of Social Security benefits. Additionally, those with substantial unrealized capital gains in their portfolio may benefit from preferential tax treatment on long-term capital gains, assuming income is at or below the 12% marginal bracket, as there are currently no capital gains tax consequences at that level for realizing long-term capital gains.

²Specifically, RMDs must begin by the April following the year a retiree reaches age 70½.
³Kitces, Michael, "Tax-Efficient Spending Strategies from Retirement Portfolios," <u>www.kitces.com</u>, June 22, 2016.

Other issues come into play if you are planning to leave assets to heirs. For example, if you sell a stock after a long period, chances are you will owe capital gains tax on any appreciation. However, if you were to hold the stock until death, your estate (and thus your heirs) would receive a step-up in tax basis on the security. Depending on your individual needs, this issue may affect whether you tap appreciated securities in a taxable account for income, or make withdrawals from a tax-deferred or tax-free account instead.

FINAL THOUGHTS

There's more to retirement planning than simply saving and investing. By maintaining a balance of retirement income sources with different tax characteristics, you can position yourself to better manage your tax burden over the long term. Drawing on the insights of your advisor, effectively managing your retirement income strategy could mean the difference between having enough to maintain your lifestyle and running the risk of outliving your assets.

FUNDING THE INCOME GAP:

Possible Order of Portfolio Withdrawals



See disclosures at the end of this publication, which are an important part of this article.

Tax Reform: Highlights for Individuals

What are some of the provisions worth your attention in the sweeping new tax law? We offer a brief guide.



ADAM ROSENBERG — Senior Fiduciary Tax Manager, Neuberger Berman Trust Company

Federal tax reforms introduced in December are the most significant in over 30 years, with major impacts to personal, corporate and estate tax regimes. Below are some of the key changes affecting individuals. Except as noted, all apply starting in the 2018 tax year and sunset after 2025. Consider this list as a starting point for discussions with your advisors.

INCOME TAX: THE 'GOOD NEWS'1

- Rates are somewhat lower for most taxpayers; thresholds at which they apply have also changed (see display).
- The marriage penalty has been eliminated for all tax brackets except the highest.
- The standard deduction has nearly doubled, from \$6,350 to \$12,000 for single taxpayers and \$12,700 to \$24,000 for married couples filing jointly.
- The medical expense deduction survives, with the threshold declining from 10% to 7.5% of adjusted gross income (AGI) for 2017 and 2018, before returning to 10% for the 2019 tax year.
- The child tax credit has doubled to \$2,000 per child, and there is a new \$500 credit for non-child dependents. Importantly, the income threshold for phaseout of these credits has increased to \$200,000 for individuals and \$400,000 for married couples filing jointly.
- The alternative minimum tax (AMT) has been retained, but the exemption and phaseout amounts have increased, so fewer people will be subject to the tax.
- You can now deduct cash charitable gifts of up to 60% of AGI (versus the previous limit of 50%) to a public charity. The limit on deductibility for gifts of appreciated securities to a public charity remains 30% of AGI.

PERSONAL INCOME TAX BRACKETS AND THRESHOLDS: MARRIED COUPLE FILING JOINTLY

2017 Tax Brackets	2017 Thresholds	2018 Tax Brackets	2018 Thresholds
10%	\$0 to \$18,650	10%	\$0 to \$19,050
15%	\$18,651 to \$75,900	12%	\$19,051 to \$77,400
25%	\$75,901 to \$153,100	22%	\$77,401 to \$165,000
28%	\$153,101 to \$233,350	24%	\$165,001 to \$315,000
33%	\$233,351 to \$416,700	32%	\$315,001 to \$400,000
35%	\$416,701 to \$470,700	35%	\$400,001 to \$600,000
39.6%	More than \$470,000	37%	More than \$600,000

Source: Internal Revenue Service.

¹Whether a particular provision is "good" or "bad" news may depend on the taxpayer and whether it applies to his or her particular situation. There also may be other provisions in the tax reform that offset the impact of any particular change.

INCOME TAX: THE 'BAD NEWS'

- The deduction for state and local taxes (including real estate tax) is now capped at \$10,000—a headache for many living in high-tax states. But note that the "SALT" deduction already wasn't available to anyone caught by the AMT; various states are looking for ways to work around the new limitation.
- The cap on the home mortgage interest deduction has been reduced. For any "acquisition indebtedness" incurred after December 14, 2017, interest will only be deductible for loan amounts up to \$750,000 (for married couples filing jointly). Any existing mortgages will retain the deductibility of interest on the first \$1 million of debt, as will the refinancing of qualified acquisition debt (but only on the remaining debt balance and not on any additional debt). Limits will continue to apply to primary and second homes (in the aggregate). The deduction of interest payments on up to \$100,000 in home equity loans has been scrapped.
- Personal and dependent exemptions (\$4,050 per family member in 2017) have been eliminated for 2018 and future years.
- Miscellaneous itemized deductions that are subject to the 2% AGI limitation have been repealed. This includes tax preparation expenses, various unreimbursed business expenses and investment advisory fees.

INCOME TAX: OTHER PROVISIONS

- Starting in 2019, there will no longer be a deduction for alimony paid, nor will it be reportable by recipients as taxable income. The provision will only apply to divorce agreements finalized after December 31, 2018.
- The "kiddie tax" computation (where a child's unearned income above certain levels is currently taxed at his or her parents' rate) will now apply trust tax rates instead of parents' individual rates. Trusts reach their top income tax brackets (both on ordinary income and capital gains) at far lower income levels than individuals do. Still, the impact of the provision could be positive in some cases, such as where the child has a more modest level of income.
- Capital gains and qualified dividends will continue to be taxed using the same rates (0%, 15% and 20%) and income levels as before. Those with higher incomes will continue to pay an additional 3.8% tax on net investment income.
- The controversial proposal that would have required "FIFO" ordering of security sales was not included in the final legislation. So, investors can still specifically identify the tax lots that they would like to sell.

BUSINESS: THE CRUX OF REFORM

- The corporate rate has been slashed to 21%, and companies have new incentives to move offshore cash back to the U.S. The main impact for individuals could be indirect: a potential increase in earnings and dividends, as well as economic growth that could spur share prices over time.
- Owners of businesses with pass-through tax treatment (e.g., sole proprietorships, S corporations, partnerships) may obtain a new 20% deduction on "qualified business income." When combined with a top tax rate of 37%, the deduction will result in a constructive top rate of 29.6% for such income absent other limitations. Note that tax rules for some service businesses are extremely complicated, so consulting with a tax advisor is crucial.

• Businesses get various other benefits, including more favorable expensing and the elimination of the corporate AMT, though business interest deductions have been trimmed.

RETIREMENT: A ROTH IRA TWEAK

- After some debate, retirement savings vehicles generally avoided the knife.
- One key change is the end of Roth conversion "recharacterization." In the past, those who executed a taxable conversion from a traditional (pretax) retirement account to a Roth IRA in a given year had until the due date of their tax return (including extensions) to change their mind and unwind the conversion, for any reason. Although there is still time to recharacterize 2017 conversions, the technique generally won't be available in the future.
- However, Roth conversion remains a potentially attractive strategy if your current tax bracket is lower than your likely tax rate when you eventually take distributions from a traditional IRA.
- Indeed, the lower rates and other tax breaks introduced in the reforms could tip the balance for some investors toward conversion.

GIFT AND ESTATE: MAJOR TAX RELIEF

- The lifetime exemption for estate, gift and generation-skipping tax has doubled to \$11.2 million for individuals and \$22.4 million for couples.
- The annual gift exclusion remains in place, increasing from \$14,000 to \$15,000 per recipient (\$30,000 if a couple is making the gifts). You can make such gifts without cutting into the lifetime exemption noted above. For those who could still incur death tax liability under current or future law, consider capitalizing on the larger lifetime exemption, whether via additional gifts to younger generations or placing assets in trust to obtain various benefits.
- Appreciated assets still receive a step-up in tax basis at the owner's death, so heirs receive them with a basis equal to their fair market value without incurring (or the estate incurring) capital gains tax liability. This suggests that, all things equal, it may remain more attractive to hold onto a highly appreciated asset than to gift it to family members—despite the now-sizable lifetime gift exemption.
- Keep in mind that state estate taxes are quite high in some jurisdictions and may carry far lower lifetime exemptions than the new federal regime, making planning at the state level crucial for individuals with potentially large estates.

STAY TUNED

Most reforms affecting individual taxpayers expire at the end of 2025, and Congress will have to act again to extend them. However, with today's rancorous environment, political winds have the potential to shift drastically, whether in 2018 or the presidential election year of 2020. In our view, this means that planning should take into account not only the current tax environment, but the potential morphing of that environment over time. Also, keep in mind that this brief article only covers the *highlights* of the new tax law; many other provisions have been modified or repealed. Given the broad impacts of the new law, it clearly merits comprehensive dialogue with your tax, estate and/or wealth advisors.

See the disclosures at the end of this publication, which are an important part of this article.

Trust Company Corner



In Trust Location, Delaware Stands Out

Potential tax savings, unlimited duration and confidentiality are among the reasons to consider establishing a trust under Delaware law.

DAVID HERRMANN — Chief Fiduciary Officer and Head of Personal Trust, Neuberger Berman Trust Company of Delaware

Trusts are often a core element of wealth planning, affording great flexibility to fulfill the specific goals of an individual or family whether relating to the management of assets, reduction of transfer taxes, distributions to heirs or charitable giving. In establishing a trust, a key part of the process is to decide on its location. The laws of the state you choose will generally govern the trust throughout its life—how it is taxed, how long it can exist and how its assets may be invested, among other things.

Although where you live may seem the natural choice, the laws dealing with trusts can vary widely. Some states, such as Delaware, have wellestablished trust-friendly laws that offer valuable advantages to trust grantors, trustees and beneficiaries. Advantages include tax savings, privacy, investment flexibility and protection from creditors—which make the state an attractive location for many trusts. Here are further details:

POTENTIAL TAX SAVINGS

Irrevocable non-grantor trusts that are located in Delaware may be free of state and city fiduciary income taxes on undistributed income and capital gains, providing significant tax savings that can enhance wealth preservation and growth potential.

The difference in tax liability between such a trust located in a jurisdiction with a significant income tax, for example in New York, and the same trust located in Delaware can add up over many years. While both trusts would be subject to federal income taxes on undistributed income and capital gains, New York trusts are also subject to state and, potentially, city income tax rates that together exceed 10%. Over time, the effect of these taxes on the overall value of trust assets can be striking.

THE DIFFERENCE A STATE CAN MAKE*

Locating a trust in Delaware versus a high-tax state like New York can have a major impact on the accumulation of trust assets over time. The following hypothetical compares the potential long-term results in each of the two states for a \$3 million trust. All assumptions are the same except for taxation.

HYPOTHETICAL: \$3 MILLION TRUST HOLDING ASSETS FOR THE BENEFIT OF A CHILD

ASSUMPTIONS

PORTFOLIO BALANCE



*Similar results may be achieved by comparing Delaware with other states, although results will vary depending on state law.

UNLIMITED DURATION

Delaware is one of the states that allow personal trusts to benefit families for multiple generations and, potentially, in perpetuity. With effective planning, Delaware trusts that have an extended or perpetual term can help protect assets from inheritance, estate and generationskipping transfer taxes, allowing them to accumulate greater wealth for the benefit of future generations compared to trusts located in other states. In addition, as long as the assets remain in the trust they should be protected from the beneficiaries' creditors, including spouses.

CONFIDENTIALITY, PROGRESSIVE LEGAL BACKDROP

Delaware provides a high level of confidentiality for trust grantors and beneficiaries. The state does not require public registrations, court accountings or court filings for trusts created during a grantor's lifetime or by his or her will. Delaware courts seal court records to prevent public access to proceedings. The state's court system is also experienced and efficient at addressing and resolving issues relating to fiduciary relationships. The Delaware legislature continually evaluates and revises fiduciary legislation to ensure that trusts are operating in an advantageous environment.

INVESTMENT FLEXIBILITY

Delaware's prudent investor rule offers significant investment flexibility, allowing trustees to acquire virtually any type of asset. The rule also assesses investment performance based on the more modern "whole portfolio theory" rather than on an asset-by-asset basis. The result is a greater degree of freedom to invest in a broader range of assets, creating the potential for higher returns.

ABILITY TO SEPARATE INVESTMENT FROM ADMINISTRATION

Delaware permits the bifurcation of trustee fiduciary responsibilities, allowing the trust creator to separate the investment function from the administrative responsibilities associated with the trustee role. This enables a grantor to appoint a separate investment advisor with exclusive responsibility for trust investments. These "directed trusts" offer enhanced investment flexibility and allow the trust to be invested in a manner that a trustee might not otherwise be comfortable with—for example, in private businesses or concentrated positions. This ability can also be used to permit an individual other than the trustee to be responsible for discretionary distributions.

MANAGEMENT OF BENEFICIARY RIGHTS

A statute in Delaware provides that a grantor, through the terms of the governing instrument, may expand, restrict, eliminate or otherwise vary the rights and interests of beneficiaries. For example, some grantors may be concerned that heirs would be influenced by knowing that they are beneficiaries of a trust. Pursuant to the statute, you can create a trust that defers the date when beneficiaries will be informed of the trust's existence. This can provide peace of mind that a beneficiary won't know about the trust until he or she is more mature and better

able to handle the news, and the potential access to wealth.

EFFECTIVE ASSET PROTECTION

Delaware permits the creator of an irrevocable trust to benefit from a trust while still receiving protection from most creditors. If properly created, this protection generally bars certain creditors from bringing an action against property held by the trust. Known as "asset protection trusts," these vehicles can allow a grantor to receive income and principal from the trust, veto distributions from the trust, determine who will receive trust assets upon his or her death, and serve as investment advisor to the trust. Delaware also provides extensive protection from creditor claims against beneficiaries.

TOTAL RETURN TRUSTS

Many trusts require that income be paid to one or more beneficiaries and—upon his, her or their deaths—that the remaining assets pass to other beneficiaries. Commonly known as "income trusts," these vehicles require trustees to balance the income beneficiaries' need for current distributions with the remainder beneficiaries' focus on capital appreciation. This can be a difficult task because the income beneficiaries may want a high fixed income (and low equity) allocation to maximize the trust income to which he or she is entitled, while remainder beneficiaries may want the opposite (low fixed income and high equity), to maximize the trust's capital appreciation potential.

Delaware law offers two ways to enhance the value of both the income interest and the remainder interest, and to reconcile this inherent conflict. Both methods free the trustee to pursue a strategy of investing for total return, providing potential benefits for the income beneficiaries and the remainder beneficiaries.

The first method, known as the "power to adjust," enables the trustee to adjust distributable income by transferring principal to income (or vice versa) as necessary to make proper distributions and satisfy the trustee's duty of loyalty to both the income beneficiaries and remainder beneficiaries.

The second method permits a trustee to convert an income trust to a "total return unitrust." With this type of trust, the trustee satisfies the income obligation by paying the income beneficiaries a fixed percentage (3% to 5%) of the trust's value determined at least annually.

MAKING THE RIGHT CHOICE

Understanding the benefits of Delaware trust law can be important for individuals who are in the process of establishing or relocating trusts. Given the potential tax savings, asset protection, privacy and flexibility it affords, Delaware law is an option that should be considered by grantors, trustees and beneficiaries alike. Delaware, however, is not the right location for every trust. It is critical to determine the best choice for your trust in conjunction with your tax advisor and/or attorney.

See disclosures at the end of this publication, which are an important part of this article.

Market Focus

SOLVING

FOR 2018

TEN FOR 2018

JOSEPH V. AMATO — President and Chief Investment Officer – Equities ERIK L. KNUTZEN, CFA, CAIA — Chief Investment Officer – Multi-Asset Class BRAD TANK — Chief Investment Officer – Fixed Income ANTHONY D. TUTRONE — Global Head of Alternatives

The global markets and economy have entered 2018 with significant positive momentum, but could the path ahead prove to be more challenging? Below, the heads of our investment platforms note the key themes that they anticipate could guide investment decisions in the coming year. For more details on their views, read our *Solving for 2018* outlook.

MACRO: GLOBAL INFLECTION POINT NEARS

Goldilocks" Gives Way to Something More Complicated

Though the strength of global economic momentum is undeniable, a confluence of factors—including tightening central bank policy, plateauing economic growth and rising market volatility—suggests that conditions are unlikely to remain "just right" for all of 2018.

2 Both Monetary and Fiscal Policy Are in Motion Globally

As major central banks wind down unprecedented levels of monetary stimulus, their efforts are being met—and potentially complicated—by expansionary fiscal policy and reform initiatives taking root in a number of countries.

RISKS: CLOUDS GATHER AS THE YEAR PROGRESSES

5 Geopolitical Climate Remains Unsettled

Though 2017 mostly failed to deliver the electoral fireworks of 2016, elections this year in Italy, Mexico, Brazil and the U.S.—in addition to ongoing disrupters like North Korea, special investigations, Brexit, etc.—could upset the current order.

4 China Accelerates Structural Reforms

An emboldened Xi will be more aggressive in reducing leverage and reorienting China's economy toward more sustainable, high-quality development, to the potential detriment of near-term growth.

FIXED INCOME: THE CHASE CONTINUES

5 No End to the Search for Yield

Biased higher but still low, long-term interest rates continue to send investors into less-familiar corners of the fixedincome markets in the hunt for yield, with high valuations leaving little cushion to absorb a volatility shock.

6 Credit Drivers Begin to Change

Continued low default rates suggest global credit spreads likely will be impacted less by fundamentals and more by technical developments such as hedging costs, LDI-related flows and regulatory changes.

EQUITIES: TWO-WAY MARKETS RETURN

7 Market Momentum Could Present Opportunities to Reduce Beta Exposure

Strong earnings growth could fuel equities in early 2018, providing investors with chances to trim holdings in high-valuation stocks and redeploy into more attractive riskadjusted exposures.

Active Management Positioned to Shine

Market dynamics continue to shift in favor of active management, which could extend the comeback mounted by stock pickers last year after a period of underperformance.

ALTERNATIVES: FINDING OPPORTUNITIES AMID HIGH VALUATIONS

 ${\cal S}$ Low-Vol Strategies for a More Volatile World

Market-neutral and relative-value hedge funds may help investors earn returns with lower volatility.

IU Sharpen Quality Focus in Private Assets

Given high private equity valuations, investors can help mitigate risk by targeting experienced private equity sponsors with a history of adding operational value or by moving up the capital structure to first-lien private debt.

View Solving for 2018 at www.nb.com/solving2018

See disclosures at the end of this publication, which are an important part of this article.

Highlights 1Q18 FROM THE ASSET ALLOCATION COMMITTEE

U.S. EQUITIES: Given elevated valuations, we have a below-normal 12-month view of large caps, though dollar weakness and cash repatriation under tax reform should help multinationals; small- and mid-cap companies are a more attractive "neutral" and set to benefit from pro-growth administration policies.

INTERNATIONAL EQUITIES: Europe is enjoying a robust economic recovery and lower unemployment, supporting our above-normal outlook, though the strong euro and potential reduction of central bank accommodation are risks. In Japan, the weak yen and central bank policy tend to support equity performance, while the U.K. is making progress in Brexit negotiations.

EMERGING MARKETS: We have an above-normal 12-month outlook on both EM equities and fixed income, which have prospered due to synchronized global growth, low inflation and low interest rates. China's managed slowdown remains a key risk.

COMMODITIES: Should inflation pick up due to higher energy prices, pent-up demand and wage increases, commodities could act as a hedge; hence our recent move from a neutral to above-normal view.

HIGH YIELD/MUNICIPALS: Tight credit spreads are the reason for our neutral stance on high yield, although the sector is preferable to most investment-grade bonds given its higher expected return and shorter duration profile. Muni bonds could benefit from reduced supply tied to tax reform.

HEDGE FUNDS/PRIVATE EQUITY: Low-volatility hedged strategies may appeal to investors looking for ballast in portfolios. Despite high valuations, private equity still looks attractive versus public equities.

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