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Wisdom in Curiosity

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Wisdom in Curiosity

With geopolitical and macroeconomic concerns mounting of late, we have spent a considerable amount of time working with our deal teams and clients on three areas of intense focus: the impact of negative interest rates, the outlook for economic growth/capital markets in 2020, and the validity of risk-adjusted returns in private markets. In terms of negative interest rates, we believe that central bank intervention – coupled with slower nominal GDP growth – suggest that the prospects for interest rates increasing is now greatly diminished. Maybe more importantly, we believe that we are reaching somewhat of a tipping point, underscoring our view that lower interest rates may no longer help either credit creation or equity valuations. This view represents an important change in our thinking. Separately, on the growth front, our base view remains that we technically have entered a manufacturing recession, but we do not believe the services economy will 'catch-down' fully to the goods economy. Our outlook defies traditional historical comparisons, so we think our framework for navigating the current slowdown warrants investor attention. Finally, our research on private market performance suggests that volatility is likely understated in certain instances. However, many traditional risk-based metrics that are used in the public markets do not necessarily act as perfect tools for valuing performance in the private markets. Our analysis also uncovers some important insights into persistency of performance as well as the understated value of the illiquidity premium in many instances, we believe. Overall, while we may not have all the answers to the three important topics we address in this Insights note, we feel confident that our collective curiosity – including that of both KKR and its clients to better understand these subject matters – will hopefully lead to greater investment wisdom in the future.

"The important thing is to not stop questioning. Curiosity has its own reason for existence."

ALBERT EINSTEIN
THEORETICAL PHYSICIST

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Summer time, August in particular, is usually a time to slow down and catch a breath. While that cadence is true of most summers, it certainly was not true in 2019 for many folks on KKR's Global Macro, Balance Sheet, and Risk team (GBR). Indeed, beyond the non-stop macro news flow of late, what turned out to be an end of summer whirlwind was epitomized by my colleague Frances Lim, who for five years led our Asian macro effort in Sydney and spent August moving her family back to New York to assume a new role to lead portfolio management for KKR's strategic partnerships. Meanwhile, I too spent time in August traveling, first to the West Coast and then to Texas, before heading to Washington DC and Hong Kong — two other hotspots of increasing geopolitical discord these days not referenced in our last note (see *Insights: Hot Spots,* August 2019).

During our travels, which extended well into October, Frances and I met with some of our most thoughtful clients across the pension, endowment, and family office arena, and what we heard was a consistent drumbeat of questions focused on three key issues: 1) the impact of negative interest rates; 2) slowing global growth amidst today's heightened trade tensions; and 3) volatility comparisons across the Alternatives industry, particularly relative to public market equivalents. See below for full details, but our conclusions on these key areas of client 'curiosity' are as follows:

- **How should we think about negative interest rates, why is this occurring, and what does it mean for asset allocation?** As we detail below, we think that too much attention in the media has been placed on the absolute size of $16.8 trillion in negative yielding securities and too little on the actual impact these rates are having on the economy and savers (both individual and institutional). For starters, negative rates have actually not led to an acceleration in nominal GDP; in fact, nominal GDP today is lower than it was when global QE started (*Exhibit 30*), something both central bankers *and* politicians should find somewhat discomforting. Second, we are quite negative – no pun intended – on what negative deposit rates mean for financial institutions, credit creation, and inflation expectations. So, we are not surprised that European financial institutions have lost 318 billion euros in shareholder value, or one-third of their market capitalization since January 2018 (*Exhibit 13*). Third, we now believe that we are reaching a tipping point where lower rates are no longer good for valuations, which represents an important shift in investor psychology (*Exhibit 29)*. Finally, as we show below in our updated long-term forecasts in *Exhibit 1,* we think that expected returns across many asset classes need to come down to reflect the reality that not only have we pulled financial returns forward but also the prospect for a reacceleration in nominal GDP growth is actually quite limited.

- **Given the ongoing collapse in global PMI's, are you still sticking to your mild recession call for 2H19/1H20, and regardless, what does all the economic handwringing mean for the Federal Reserve and asset allocation strategies in 2H19 and beyond?** As we detail below, our base view for the U.S. economy during the next 12 months is that – under a worst case scenario – we are stuck somewhere between a 2001-like formal recession and a 2011/2012 slowdown. Against this backdrop, we see consumption – both consumer and government – performing modestly, but we expect near recessionary conditions in exports, inventory, and fixed investment. One can see this in *Exhibit 37*. However, low leverage in the banking system as well as a solid services sector should ensure that we do not have a 2008-type event. We also believe that we have already reached a plateau on the absolute levels of tariffs on the Chinese economy. Yet, we do acknowledge that the current pullback in the goods sector – particularly given our pessimistic view on autos and heavy truck equipment – is likely to be material, particularly outside of the U.S. (where we are forecasting more traditional recessionary conditions in markets like Germany and Korea). *Importantly, though, our quantitative models are – all else being equal – actually still suggesting a rebound in the back half of 2020 (Exhibit 44).* Both lower oil prices and solid existing U.S. home sales are positively influencing our model. However, for these 'green shoots' to fully materialize, corporate credit cannot totally unravel, and trade tensions must improve. We quantify these potential risks/headwinds in *Exhibit 45*. Against this backdrop, we are now forecasting three cuts by the Federal Reserve for 2019 (up from two previously). In 2020, by comparison, we leave our forecast at two cuts, given our view that the current slowdown will still bleed well into next year. Consistent with these views, our asset allocation opinions around Asset-Based Finance, Opportunistic Credit, Real Estate Credit, and Private Equity remain unchanged.

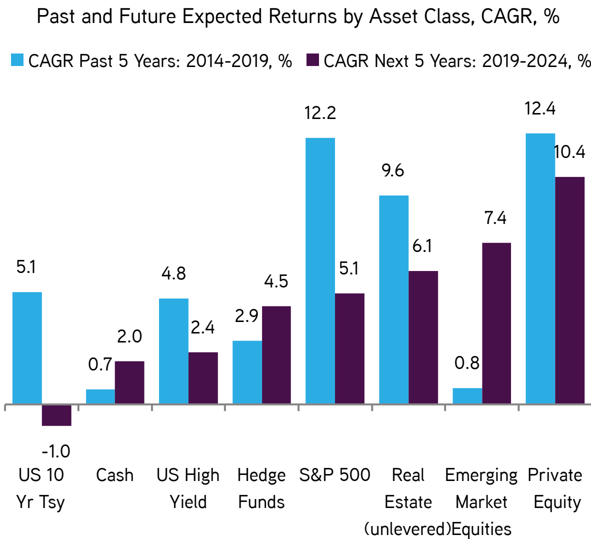
- **How should we think about returns relative to risks in the private markets, particularly as it relates to Private Equity and Venture Capital?** See below for details, but Frances has done some really interesting work around returns and volatility in the Alternatives sector. One of her punchlines is that not all returns are created equal. For example, our work shows that Venture Capital is a truly superb asset class if one can get access to the best managers. Otherwise, its Sharpe ratio can disappoint investors in several instances. Separately, we have broken down Private Equity and Venture Capital performance by quartile, and we note that fourth quartile performance tends to oscillate around zero; meanwhile, the big swings in returns are actually on the upside, *implying that most of the volatility is upside volatility.* Finally, if investors measure Private Equity or Venture Cap volatility by measuring the standard deviation across index level pooled returns (which many do), they will find that the volatility is probably too low relative to the reality, given the return profiles of these assets (e.g., more leverage and often small capitalization). We believe this outcome is primarily linked to diversification across many funds, diversification across the life cycles, and most importantly, the valuation methodology. That said, the illiquidity premium, particularly when tied to operational improvement, acts as an important volatility 'buffer,' we believe.

As we take a step back and look at the bigger picture, we clearly are living in uncertain times that require both deep fundamental top-down and bottoms-up analysis to gain an investment edge. A combination of macro and micro is certainly how we are approaching global markets at KKR, and as we detailed in our Mid-Year Outlook piece (see *Stick to the Plan*), we think that we are likely in a largely range bound market. A lower discount rate generally enhances the value of risk assets; at the same time, however, margins are high, multiples are generally full, and geopolitical risks have increased. Not surprisingly, Frances' most recent update to expected returns suggests that the outlook over the next five years is somewhat muted.

One can see this in *Exhibit 1*. Importantly, many of our clients seem to appreciate not only our more measured return profiles for forward returns but also the importance of the illiquidity premium (*Exhibit 2*) in helping to meet liability targets/discount rates in the more muted environment that we are envisioning for the global capital markets during the next five years.

EXHIBIT 1

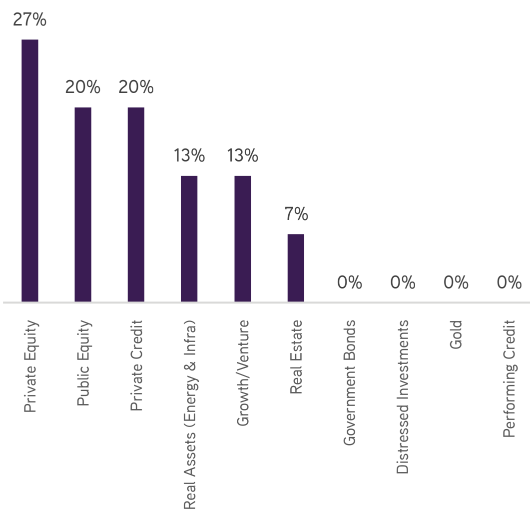
We Are Likely Entering a Period of Lower Absolute Returns with Wider Dispersions



Data as at September 15, 2019. Source: KKR Global Macro & Asset Allocation analysis, Cambridge Associates.

EXHIBIT 2

Our Investor Survey Suggests a Strong Appreciation for the Value of the Illiquidity Premium



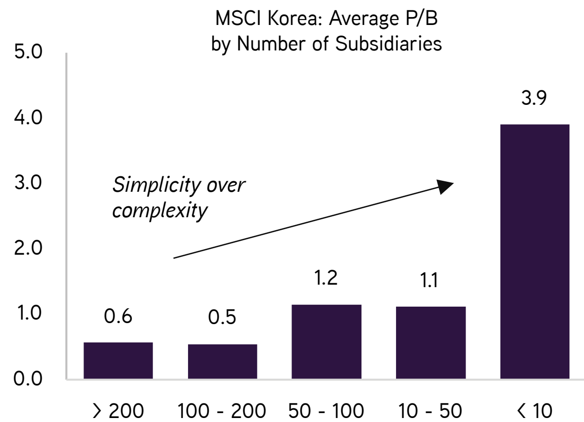
Data as at September 18, 2019. Source: KKR CIO Symposium.

So, against this global backdrop, we continue to favor several long-tailed macro themes that we believe investors can harness to generate additional alpha in their portfolios, particularly on the private side of the portfolio ledger:

We remain bullish on deconglomeratization, particularly corporate carve-outs. In addition to what we see occurring in the United States, our recent travels to London, Tokyo, Beijing, and Hong Kong confirmed our belief that the trend towards large corporate multinationals divesting non-core subsidiaries remains strongly in force. Complexity associated with these transactions is substantial, but carve-outs often have the potential to unlock significant value, particularly as it relates to cash flow generation. In addition to the sizeable opportunity we are seeing in Private Equity for global corporate carve-outs, we are also observing similar compelling trends across Energy Real Assets and Infrastructure, particularly in the area of optical fiber. Importantly, we like the opportunity set for this theme not only on the equity side but also on the debt side.

EXHIBIT 3

Valuations and Return on Equity Are Generally Lower for Complex Corporate Structures in Mature Asian Markets Like Korea

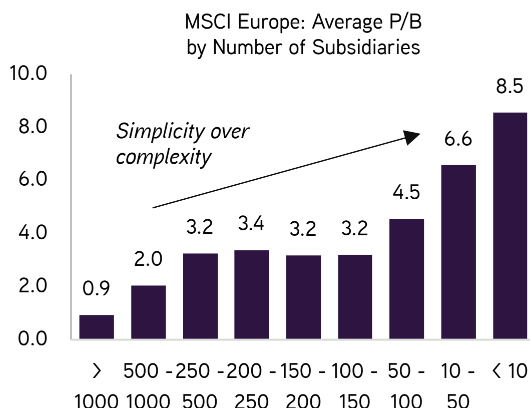


Sum may not add up due to rounding. Data as at August 6, 2019. Source: MSCI, Factset Global, KKR Global Macro & Asset Allocation analysis.

> "Our recent travels to London, Tokyo, Beijing, and Hong Kong confirmed our belief that the trend towards large corporate multinationals divesting non-core subsidiaries remains strongly in force."

EXHIBIT 4

A Similar Story Holds True in Europe. As Such, We Continue to Advocate Buying Complexity Where There Is the Potential to Create Simplicity Through Operational Improvements



Data as at September 30, 2019. Source: Capital IQ.

The 'Yearn for Yield' underscores the structural reinvestment risk that we think has emerged for income-oriented investors. From our perch at KKR, we see reinvestment risk as one of the greatest challenges that CIOs now face. Importantly, this risk is coming during a period whose characteristics we identified in our April 2019 *Insights* note as *The Uncomfortable Truth*, which we define as record low interest rates amidst bulging deficits and soaring debt loads. Our advice is to own more cash-flowing assets linked to nominal GDP, build more flexibility across mandates, and move up the capital structure when available (e.g., we currently like the risk-reward we are seeing in first lien loans relative to certain public equities). As such, we believe strongly that an overweight to modestly leveraged Infrastructure and certain Real Estate investments with yield is prudent to add some ballast to one's portfolio. We are also quite constructive on Asset-Based Finance, which continues to provide us with lots of shorter duration opportunities with good cash flowing characteristics and sound collateral.

Lean into periodic dislocations and growing dispersions. Our implied default indicator for U.S. High Yield has spiked to recessionary levels multiple times in recent years, despite the reality that we have not technically had a recession. We view these false readings as compelling because they confirm our thesis that the capital markets are giving investors multiple opportunities to lean into dislocation to buy mispriced assets. Given inadequate dealer inventories, rising geopolitical tensions, and slowing liquidity growth, we believe that the frequency of these occurrences is likely to increase, not decrease, in the coming quarters. Meanwhile, our research – some of which we include in *Exhibit 5* – shows that dispersions across many equity and debt markets are starting to increase again – a backdrop that we believe allows investors to buy attractive cash-flowing assets at reasonable valuations at this late point in the capital markets cycle. At the moment, we are playing this macro theme through our Opportunistic Credit and Distressed/Special Situations allocations, but we do believe it is constructive for Equity Hedge Fund managers as well.

EXHIBIT 5

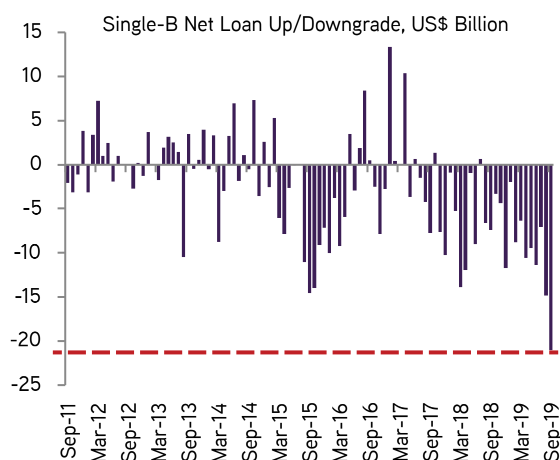
We Are Finally Seeing Dispersions Across Many Parts of Corporate Credit. This Backdrop Supports Our Large Overweight to Opportunistic Credit in Our Target Asset Allocation

	TOTAL RETURN		PRICE RETURN		SPREADS	
AS OF 10/4	MTD	YTD	MTD	YTD	31-DEC	4-OCT
HY	-0.44%	11.02%	-0.51%	5.83%	533	438
HY BB	-0.23%	12.79%	-0.29%	8.29%	360	260
HY B	-0.59%	10.56%	-0.66%	5.04%	574	457
HY CCC	-0.82%	5.26%	-0.93%	-1.48%	1,104	1,108
INVESTMENT GRADE	0.82%	13.86%	0.77%	10.56%	159	126
IG BBB	0.73%	14.83%	0.68%	11.18%	202	161

Data as at October 4, 2019. Source: ICE BofA Merrill Lynch, Bloomberg.

EXHIBIT 6

At $21 Billion, September Had the Most Single B Net Downgrades We Have Seen in Many Years



Data as at October 4, 2019. Source: Credit Suisse, Bloomberg.

Own some secular growth stories that are 'Cash Flow Compounders' amidst slowing nominal GDP. With China's nominal GDP falling from more than 20% year-over-year growth in 2007 to a low of 6.7% in 2016, overall global nominal GDP growth has suffered mightily in recent years. This decline makes sense to us, as China typically accounts for one-third of total global growth these days. As we look ahead, we are still not expecting any rebound soon, as the OECD projects that China's nominal growth will fall further towards just 5.9% by 2030. We appreciate that GDP and corporate profits are not 100% correlated, but they are linked. As such, the global GDP slowdown we are experiencing is having a profound impact on the ability of companies to grow. All told, the percentage of companies in the MSCI All Country World that are poised to grow eight percent or more has fallen sharply to 23% in 2018 from nearly 50% during the

2000-2001 period (*Exhibit 7*). Even fast growing regions like Asia ex-Japan have seen their earnings growth rate slashed in recent years (*Exhibit 8*), underscoring our view that owning some secular growth in the portfolio has become of paramount importance. In terms of where to invest behind our favorable outlook on secular growth stories, we currently favor several regional themes over global ones, including U.S. business services, logistics, Asian travel and leisure, and U.S. automation.

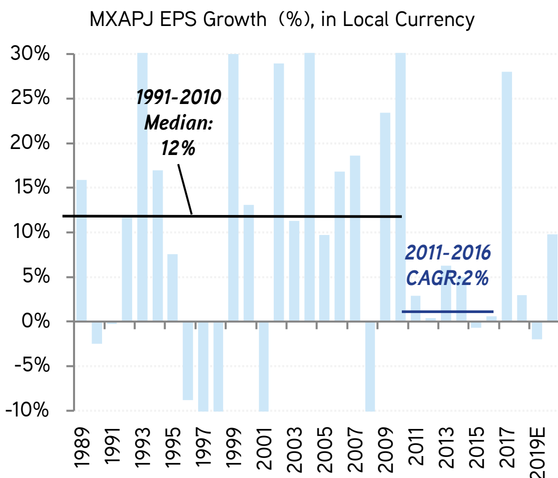
EXHIBIT 7

Few Companies Generate Top-Line Growth These Days in a Slower Nominal GDP World

Data as at December 31, 2018. Source: MSCI, Goldman Sachs Research.

EXHIBIT 8

Aggregate Earnings Growth Even in Fast Growing Regions Like Asia Ex-Japan Has Fallen Materially



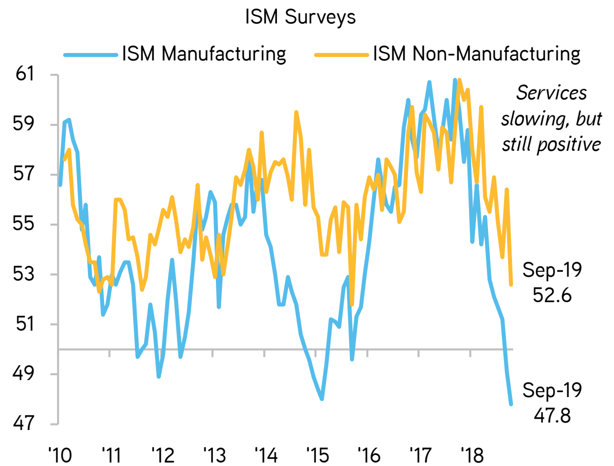
Data as at September 30, 2019. Source: FactSet, MSCI, I/B/E/S, Goldman Sachs Asia-Pacific Strategy Research.

On the risk front, there are three areas worth considering, we believe. First, we think either a policy mistake around negative interest rates or rising geopolitical tensions – not a traditional demand shock, is a more likely catalyst for a downturn this cycle than a bank failure and/or a spike in consumer defaults. These types of events are hard to prepare for, and as such, we continue to run a diversified, global portfolio that hopefully does not have any unexpected, implicit bets of which we are not aware.

Second, our conversations with CEOs and central bankers lead us to believe that the services economy, supported by a strong U.S. consumer, will be able to withstand the ongoing slowdown in the goods segment of the global economy. We remain confident in this macro thesis (*Exhibit 9*), but even we must admit that there is still substantial connectivity embedded between the goods and services sectors.

EXHIBIT 9

We Remain of the Mindset That the Services Sector Will Not Fully 'Catch-Down' to the Goods Sector. For Our Outlook for 2020 to be Accurate, We Must Get This Right



Data as at October 4, 2019. Source: Bloomberg.

Finally, we remain quite cautious on early stage growth investing and the potential for it to create some liquidity issues for allocators in the coming quarters. Hence, we retain our zero weighting to this asset class, which represents a 500 basis point underweight. The public markets clearly want more cash flow conversion than the private market community was anticipating, and as such, we believe that this mismatch of expectations will lead to more funding issues in the Unicorn universe than the consensus currently thinks. Our base case remains that a hiccup in growth markets does not spill into other asset classes, but we will all need to watch this area closely during the next few months.

Section I: DETAILS

In the following section, we offer more detailed responses to several of the questions that have been consistently posed to us by some of the leading thinkers across the pension, endowment, insurance, and high net worth markets.

Question #1: How Should We Think About Negative Interest Rates,

Why Is This Occurring and What Does It Mean for Asset Allocation?

While maybe not as 'tweetable' a topic as U.S-China trade tensions, the record amount of bonds circulating in the system with negative interest rates has also clearly captured investor attention of late. This surge in interest – no pun intended – does not come as a total surprise, given that there are now $16.8 trillion in negative yielding securities around the world, up sharply from $7.5 trillion just one year ago in 2018[1]. We certainly don't have all the answers, but we want to relay some of our most recent ideas in the area of negative rates. They are as follows:

Why are rates actually so low/negative? At the strategy's core, Quantitative Easing (QE), including negative interest rates, is supposed to engineer a lower cost of capital to grow for those in need by encouraging allocators of capital to move further out on the risk spectrum. In turn, these very same allocators of capital would enjoy the benefits of price appreciation created by non-conventional monetary policy.

At present, we remain in the lower for longer rates camp because we see several factors driving rates negative – many of which we expect to persist for some time. For starters, nominal growth remains really slow, slower than what is actually captured by a sell-side that seems myopically focused on *real* GDP. However, we focus on nominal GDP because revenues, wages, and ultimately returns are actually linked to nominal GDP growth. Importantly, the gap between real and nominal GDP has shrunk materially in recent years, with China – the driver of the world's growth engine at approximately 33% of total incremental global GDP growth during the last decade – being the most obvious example. All told, nominal GDP growth dropped from a peak of 19.7% in 2011 to 6.4% in 2015, a 68% decline.[2] However, China is not the only culprit for the changes we are seeing on the nominal growth front. Indeed, as we outline in *Exhibits 10* and *11*, despite higher deficits in the United States, our work shows that softening demographics, slower growth, and declining inflation expectations have been consistently putting downward pressure on nominal GDP growth – and hence interest rates – for quite some time.

"

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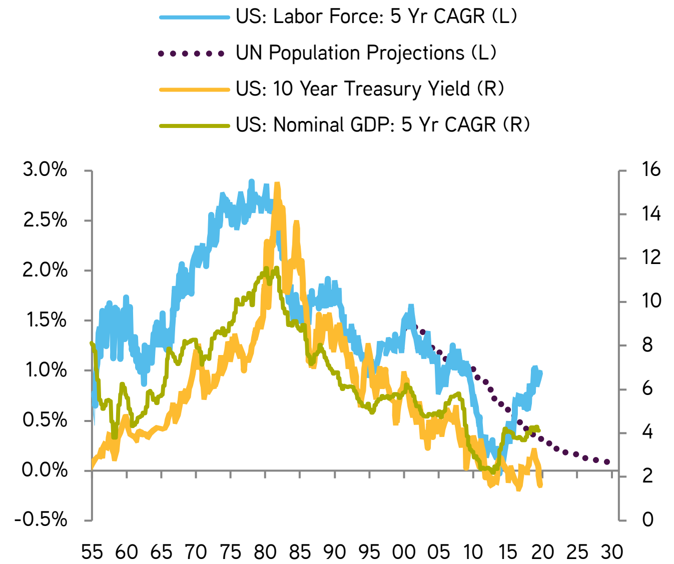
"

1 Data as at August 30, 2019. Source: Bloomberg.

2 Data as at December 31, 2015. Source: China Bureau of National Statistics, Haver Analytics.

EXHIBIT 10

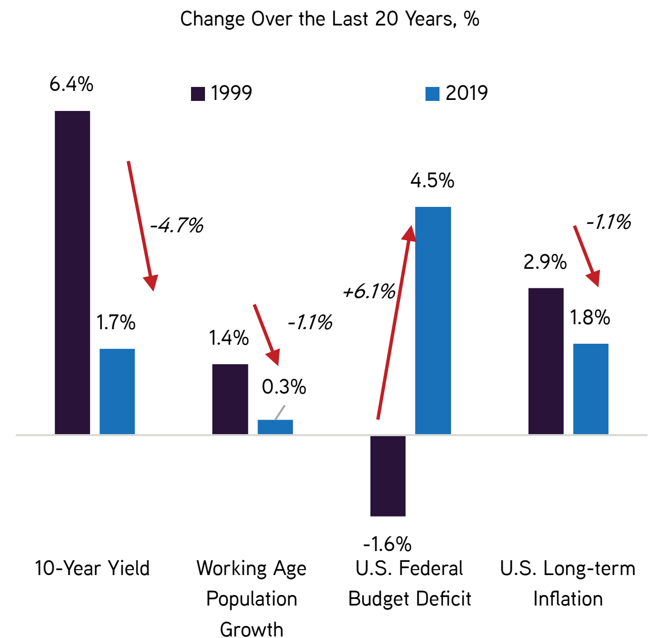
Nominal GDP Growth and Nominal Interest Rates Are Roughly In Line



Long-term changes represented as 10-year compound annual growth rates. Data as at June 30, 2019. Source: Bureau of Labor Statistics, Bureau of Economic Analysis, Federal Reserve Board, World Urbanization Prospects, Haver Analytics.

EXHIBIT 11

Demographics and Low Inflation Currently Appear to Be Stronger Influences on the Direction of Interest Rates Than Rising Deficits

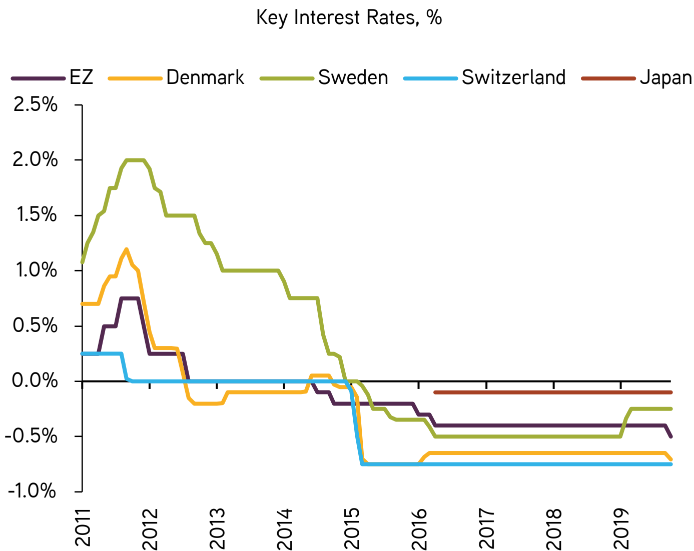


Data as at September 6, 2019. Source: Bloomberg.

Second, the decision by various central banks around the world to create negative deposit rates for financial institutions essentially forces banks to own other securities with their excess reserves. Thus, as banks diversify into other short-term securities, their actions bring down the rate curve – all else being equal – on other securities. As one can see in *Exhibit 12*, key policy rates have only gotten more negative in recent years, and their impact on spread-based financial institutions has been significant. Indeed, despite almost all global equity markets moving notably higher in recent years, the market capitalization of the European banking sector has actually contracted by 318 billion euros. One can see this in *Exhibit 13*.

EXHIBIT 12

European Central Banks Have Pushed the Envelope on Negative Rates...

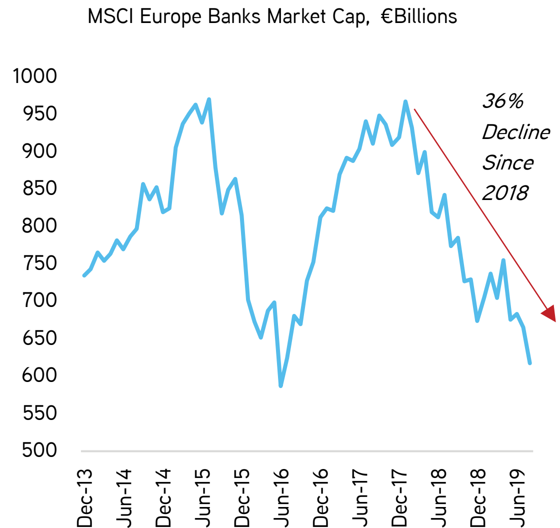


Key interest rate for EZ and Denmark is the deposit rate, Sweden is the repo rate, and for Switzerland is the policy rate. Data as at October 11, 2019. Source: Bloomberg.

"Without question, of the various strategies that the central banks are pursuing, negative deposit rates is our least favorite. Key to our thinking is that it generally creates an impossible profitability environment for financial institutions, and one that ultimately is negative for the same institutions that are in charge of credit creation."

EXHIBIT 13

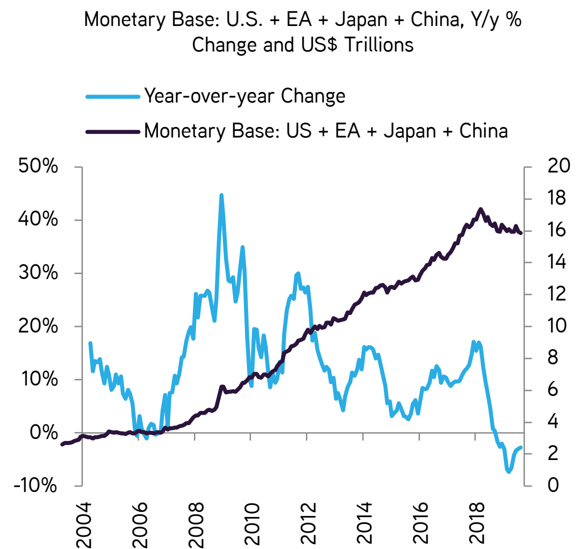
...To the Detriment of European Banks



Data as at August 31, 2019. Source: Bloomberg.

EXHIBIT 14

Money Supply Slowed Sharply at the End of 2018, But It Has Begun to Stabilize

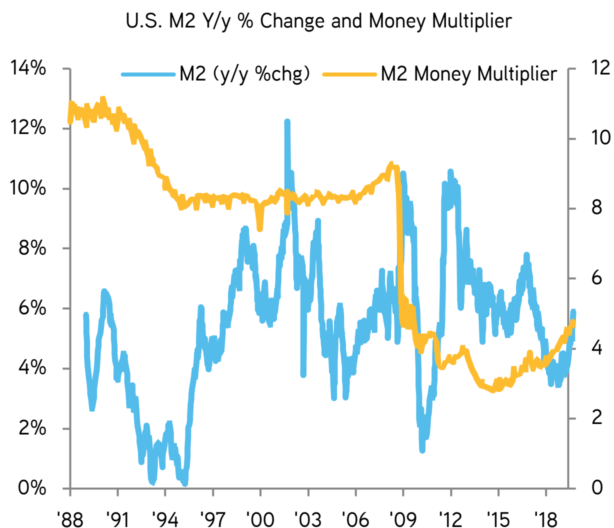


Data as at August 31, 2019 Source: Federal Reserve Board, European Central Bank, Bank of Japan, People's Bank of China, Haver Analytics, MSCI, Bloomberg.

Without question, of the various strategies that the central banks are pursuing, negative deposit rates is our least favorite. Key to our thinking is that it generally creates an impossible profitability environment for financial institutions, and one that ultimately is negative for the same institutions that are in charge of credit creation. So, while money supply may be showing signs of life, the money multiplier remains largely broken, we believe.

EXHIBIT 15

The Money Multiplier Has Never Really Recovered Since the Global Financial Crisis (GFC)

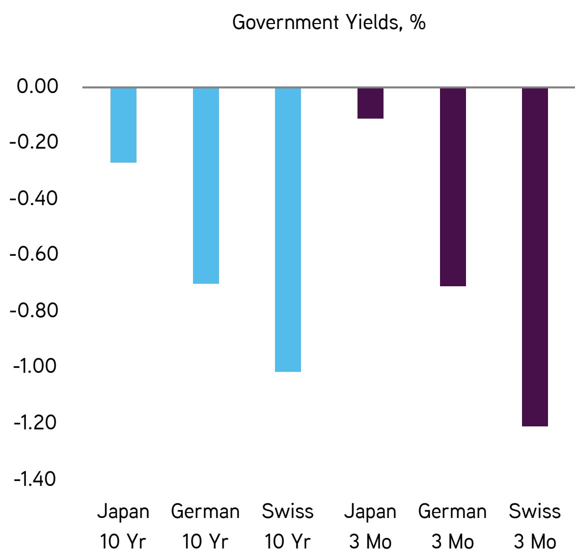


Data as at September 23, 2019 Source: Bloomberg.

Third, formal quantitative easing in the form of buying securities actually removes supply, creating what we believe are artificial distortions in the market that are self-fulfilling for both savers and the financial intermediaries that serve them. All told, we estimate that the ECB, the Fed, and the Bank of Japan hold $14.4 trillion of assets on their balance sheets, up from around four trillion before the financial crisis. Not surprisingly, historical term premiums have collapsed, as future growth, inflation expectations, and liquidity considerations have all subsided. One can get a partial feel for the magnitude of these declines in *Exhibit 17.*

EXHIBIT 16

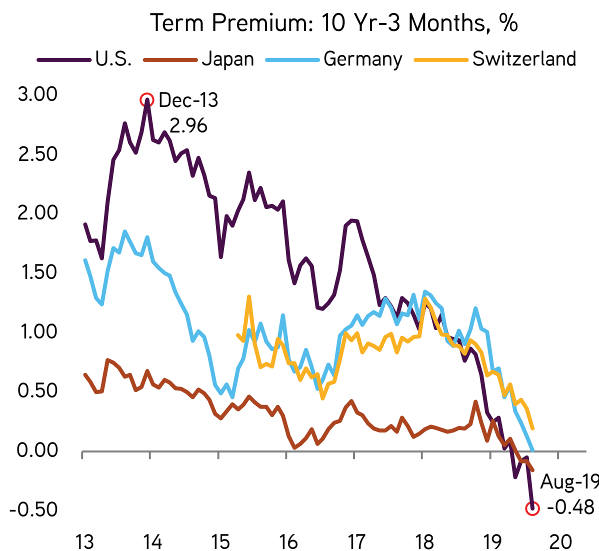
Non-U.S. Bonds Represent the Lion's Share of Negative Yielding Securities



Data as at August 31, 2019. Source: Bloomberg.

EXHIBIT 17

The Term Premium Has Turned Negative in the U.S., Japan, and Germany



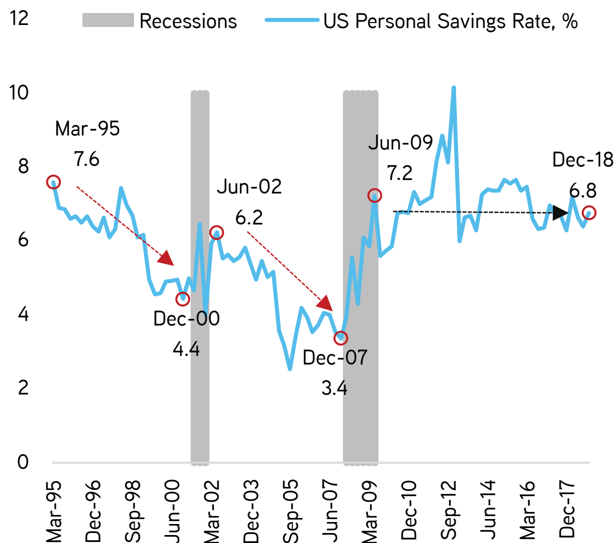
Data as at August 31, 2019. Source: Bloomberg.

Finally, unlike in prior cycles, we have not seen the traditional U.S. household fall-off in savings that typically accompanies record low employment. One can see the dichotomy in *Exhibit 18*, which shows how high the savings rate is today relative to 2006 (despite a much longer current economic cycle). *There appears to be a recognition by individual investors that a greater degree of future savings is now required, given today's low nominal yields.* Indeed, just consider that there is now nearly a 13% savings rate by Americans aged 55 or older, many of whom hold the majority of the nation's wealth and are electing to save versus spend.

> **"There appears to be a recognition by individual investors that a greater degree of future savings is now required, given today's low nominal yields. Indeed, just consider that there is now nearly a 13% savings rate by Americans aged 55 or older, many of whom hold the majority of the nation's wealth and are electing to save versus spend."**

EXHIBIT 18

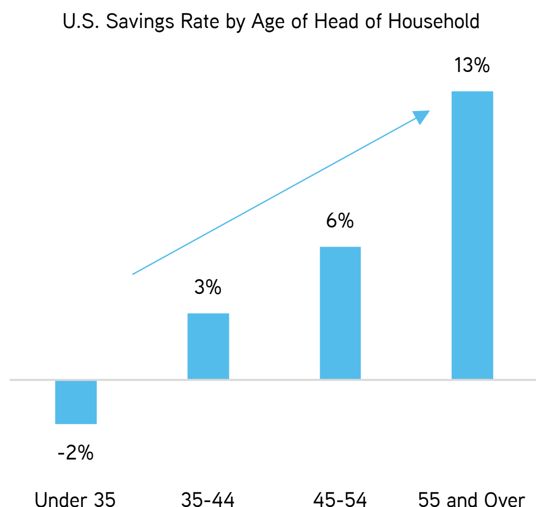
In an Unusual Break from Recent History, Savings Rates Have Not Declined This Late in the Cycle



Data as at April 1, 2019. Source: Bureau of Economic Analysis, NBER, KKR Global Macro & Asset Allocation analysis.

EXHIBIT 19

Aging Demographics Explain, in Part, the Surprising Persistence of High Savings Rates

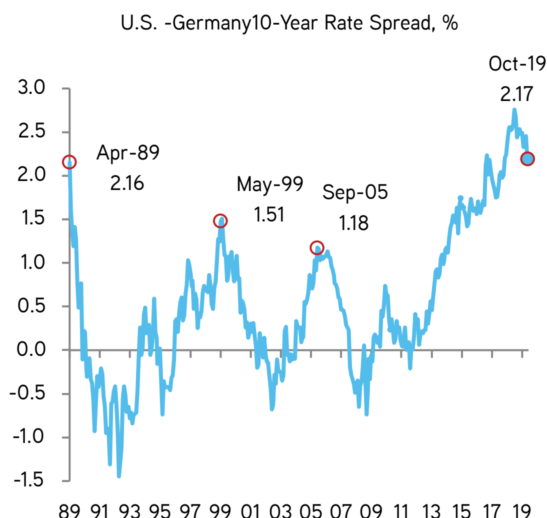


Data as at 2013. Source: Moody's Analytics analysis of 2013 Federal Reserve data.

Who owns all these securities and why? Owners of negative rate securities basically fall into one of four categories, we believe. They are the investors who for regulatory or duration reasons have to keep buying negative yielding securities to satisfy their bylaws. Second, they are momentum-oriented investors like commodity trading advisors who buy the charts, which further exacerbates the trend towards negative rates (and rising principal prices). Third, there are discretionary investors who believe that the central banks will do more to drive down bond prices than current investors think. In particular, folks in this camp may believe that a recession is coming, and as a result, want to own more bonds for portfolio hedging reasons. Fourth, there are true yield-oriented investors who, particularly in countries like the United States, pick up positive carry when they buy European securities in their local currency (i.e., U.S.-dollar based investors buying negative yielding bunds). As we show in *Exhibit 21,* these investors are actually earning more than they could in outright U.S.-Treasury purchases of a similar maturity. We do not have an exact answer on which pool of liquidity is the most influential, but we do believe that the momentum and global investors arbitraging the forward market to pick up incremental yield are likely the biggest owners of these securities.

EXHIBIT 20

The Divergence Between U.S. and German Yields Is Currently Providing Europe With a Significant Funding Advantage

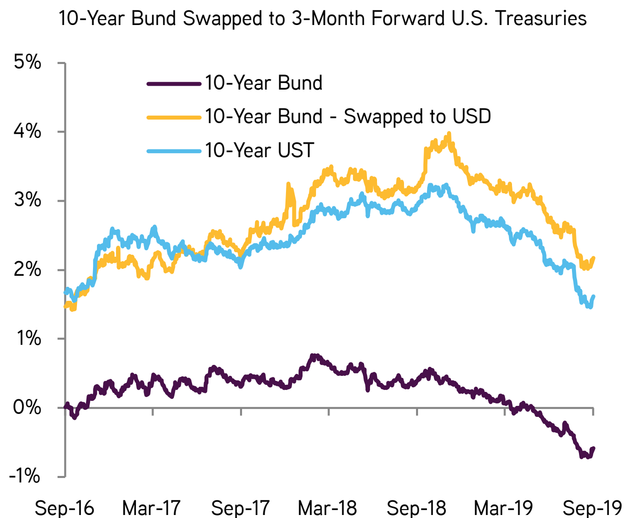


Data as at October 11, 2019. Source: Bloomberg.

> **"As we mentioned earlier, there are clearly demographic, geopolitical, and productivity forces weighing on growth in many developed economies, but these forces still do not fully explain why the current low rate environment in Europe and Japan has not helped to serve as an effective transmission mechanism for credit growth."**

EXHIBIT 21

The Yield Pickup of 10-Year Bunds Swapped to 3-Month Forward USD Is a Positive for True Yield-Oriented Investors. This Arbitrage Could Be Affecting the Absolute Level of Rates in the U.S., We Believe



Note: FX-hedged yield is the annualized 3-month carry earned by the local investor in the foreign asset. Data as at September 9, 2019. Source: Bloomberg.

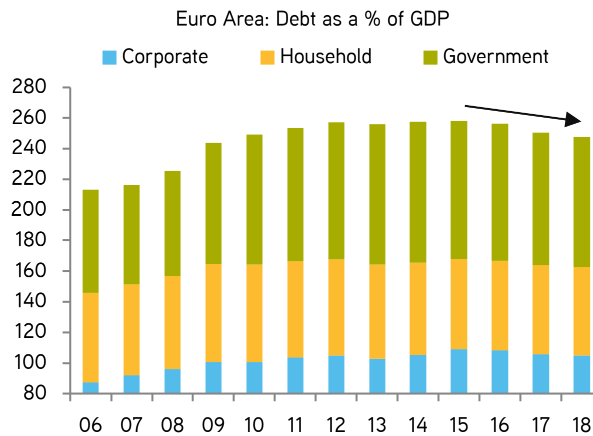
Given how negative rates are, we are often asked why more investors don't just hold cash outside of the banking system. The reality is that it is actually more expensive than some folks might think. This insight may sound silly to some, but the actual operating costs for large institutions to hoard any material amount of physical cash is high enough that the *net* return after expenses (for protecting, counting, and distributing the cash) can put overall returns on par with holding bonds with negative yields up to at least 10-25 basis points, we believe. Gold is more interesting because it has the potential for appreciation relative to cash, but it too can be expensive to store physically.

Why have negative rates not led to a sustained increase in GDP growth? As we mentioned earlier, there are clearly demographic, geopolitical, and productivity forces weighing on growth in many developed economies, but these forces still do not fully explain why the current low rate environment in Europe and Japan has not helped to serve as an effective transmission mechanism for credit growth. We see several additional forces at work. First, as we indicated earlier, we link some of this failure to the reality that negative rates are quite problematic for the financial institutions that are in charge of credit creation through their lending divisions. Not surprisingly, their desire to take risk when their fundamental business model is under attack remains quite limited.

Second, regions like Europe have not used enough fiscal initiative to help bolster growth. In fact, as we show in *Exhibit 22,* Europe has been de-leveraging, despite the reality that negative rates provide a generational opportunity to improve growth without incurring huge interest expense increases linked to the additional leverage.

EXHIBIT 22

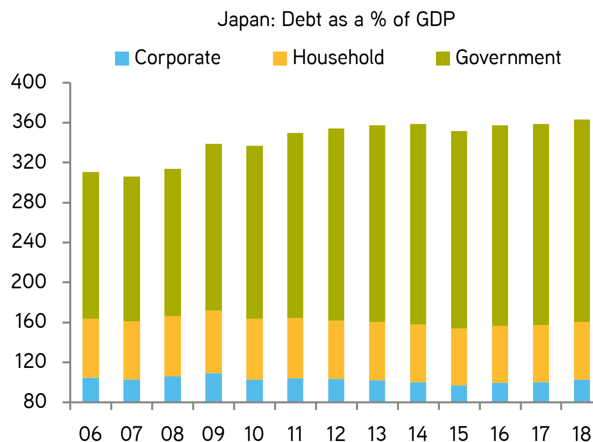
Despite Negative Rates, Europe Has Actually De-Levered. We View This Austerity as Somewhat Counterproductive



Data as at 4Q18. Source: Bank for International Settlements, Haver Analytics.

EXHIBIT 23

Meanwhile, Japanese Debt Has Been Fairly Stable, as the Government Has Been More Proactive on the Fiscal Front

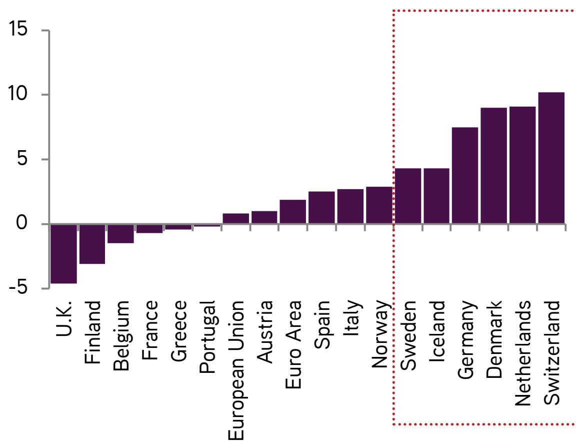


Data as at 4Q18. Source: Bank for International Settlements, Haver Analytics.

> **"Regions like Europe have not used enough fiscal initiative to help bolster growth, despite the reality that negative rates provide a generational opportunity to improve growth without incurring huge interest expense."**

EXHIBIT 24

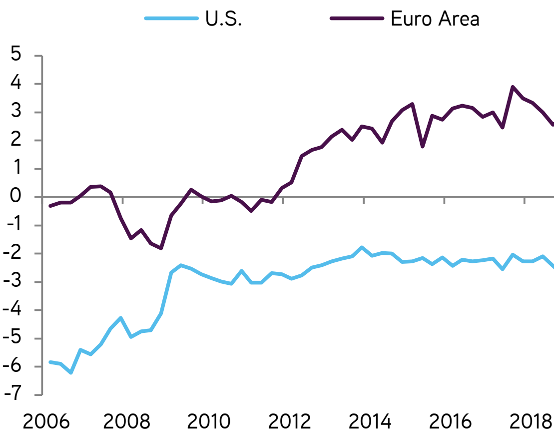
Huge Current Account Surpluses in Europe Are Adversely Affecting Growth, Inflation, and Interest Rate Expectations



Data as at June 30, 2019. Source: ECB, various National Statistical Agencies, Haver Analytics.

EXHIBIT 25

Europe Appears to Be Mishandling Its Policy Initiatives, Particularly When One Factors in the Cost of Borrowing and the Fiscal Capacity Available to Bolster Growth



Data as at June 30, 2019. Source: ECB, BEA, Haver Analytics.

"

We believe that negative rates act as an important signaling mechanism for corporate executives not to take risks.

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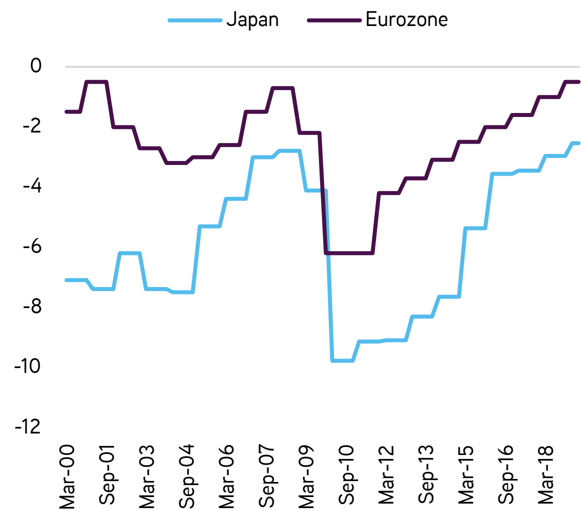
EXHIBIT 26

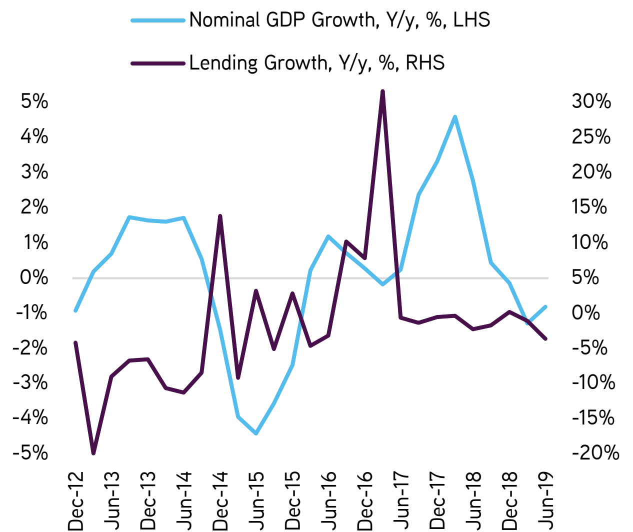
The Eurozone's Fiscal Deficit Has Improved to Almost Zero, While Japan's Fiscal Deficit Is Still Hovering Near -2%



Data as at June 30, 2019. Source: Bloomberg.

EXHIBIT 27

Despite Negative Rates, Eurozone Lending Has Not Kept Pace With Nominal GDP of Late



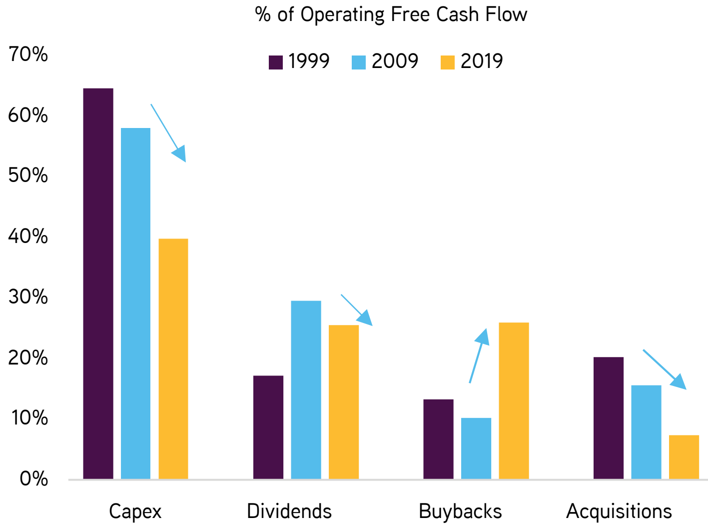
Data as at June 30, 2019. Source: Bloomberg.

Third, we believe that negative rates act as an important signaling mechanism for corporate executives *not* to take risks. To be sure, global corporates have issued record amounts of debt by accessing bond markets throughout the world. However, much of the capital raised has been earmarked for buybacks and dividends, not capital expenditures. All told, capex as a percentage of operating free cash flow has hovered around 40% during the last two years, down meaningfully from the long term average of about 60% when measured since 1986 *(Exhibit 28)*. We do not disagree that many industries are

becoming more capital light, but we currently see an increasing cyclical downturn in plans for capital expenditures since global interest rates have become increasingly negative.

EXHIBIT 28

Capital Expenditures as a Percentage of Operating Cash Flow in U.S. Companies Was Hovering Around 65% in the Late Nineties; Now It's Around 40% at a Time When Buybacks Have Increased Materially



Data as at August 31, 2019. Source: BAML.

Will even lower rates drive valuations up further from current levels? While we have not said this in the past, we are now of the mindset that *lower rates will no longer boost valuations*. This statement represents a change in our thinking, as we have been in the camp that the trend towards lower for longer on interest rates would simultaneously 1) increase the terminal value of growth stocks; and 2) make defensive stocks with bond-like features more valuable. Today, however, we think that price-to-earnings ratios for many stocks, including both growth stocks and equity bond proxies, are now much closer to fair value – even in today's low rate environment.

What really drives our thinking is the output shown in *Exhibit 29*. It serves as a good reminder that there is actually some efficient frontier for interest rates. Specifically, as real rates go more negative, investors place a discount on the multiple they want to pay because they worry what lower rates are signaling about the prospects for both growth and profitability.

"

While we have not said this in the past, we are now of the mindset that lower rates will no longer boost valuations.

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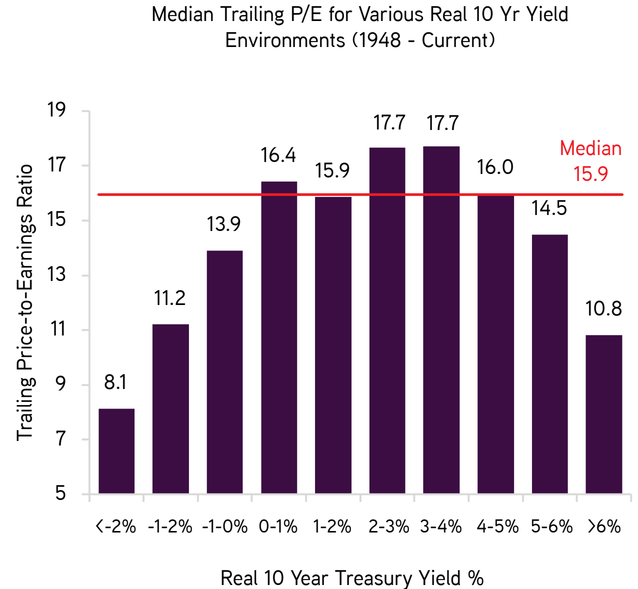
EXHIBIT 29

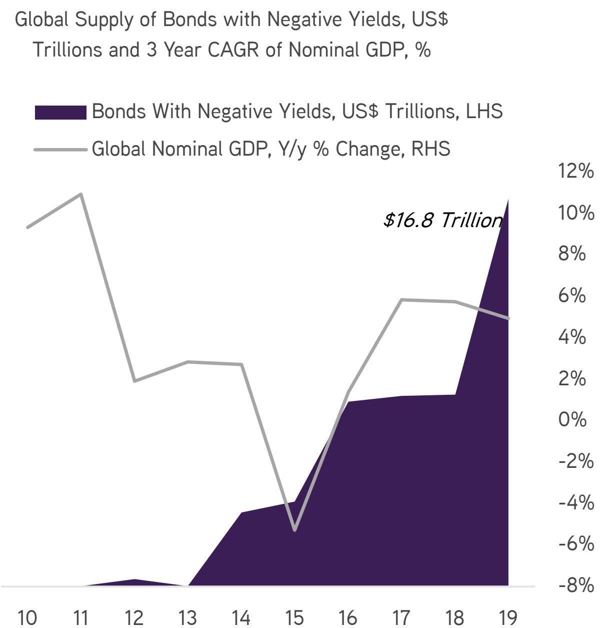
If Real Yields Fall Much Further, Valuations Too Are Likely to Contract Somewhat



Data at September 6, 2019. Source: Bloomberg.

EXHIBIT 30

More Fiscal Stimulus Is Needed, as Nominal GDP Remains Weak



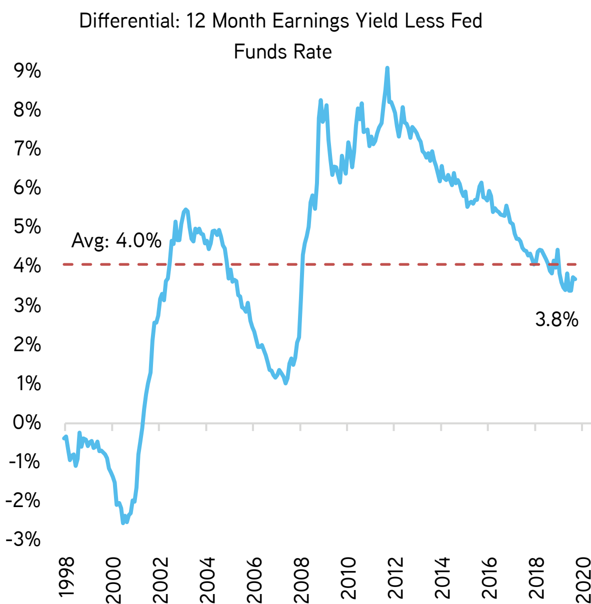
Data as at August 31, 2019 Source: Bloomberg.

There are also growing concerns around the potential for policy mistakes. Indeed, as *Exhibit 30* indicates, despite fully $17 trillion in negative yielding securities, nominal GDP growth is actually 50% lower today than when rates were much higher in 2011. From our perch at KKR, we now think that current investor sentiment is starting to better understand not only the cost of this financial repression to savers but also the reality that it has not led to faster growth in revenues for many companies. It has also not led to a surge in wages or net worth for many individuals, despite the continued increase in 'input' costs like housing, healthcare, and transportation. Finally, political dysfunction in the United States and Europe is preventing governments from implementing pro-growth policies - policies that could help drive sustained improvements in nominal GDP at very little incremental interest expense.

However, we are not bearish on multiples from current levels, despite the historical suggestion that the level of negative rates reached in August of negative 10 to 30 basis points for the U.S. real 10-year – if sustained for a long period of time – could imply a price-to-earnings ratio of less than 14x (*Exhibit 29*), compared to the current trailing multiple of closer to 18-19x. For starters, we see disinflation, not outright deflation, ahead. This viewpoint is significant because it underscores our view that U.S. real rates are not going to turn massively negative. Also, as my colleague Dave McNellis is apt to remind me, history suggests that interest rates at current levels are usually there because of an economic crisis. Today, he thinks is different, as low rates are more about secular demographics, the Yearn for Yield by savers, and unprecedented central bank intervention (many of which are taking away other investment alternatives by reducing the coupon on debt). Also, as we show below in *Exhibit 31*, the earnings yield on stocks is still reasonably attractive relative to interest rates, despite the strong performance of U.S. equities during the past decade.

EXHIBIT 31

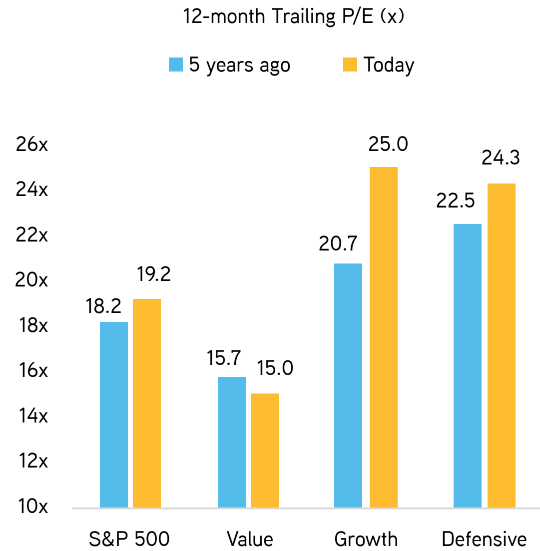
The Earnings Yield Arbitrage Relative to the Risk-Free Rate Is Still Positive in the U.S., Though We Acknowledge It Has Narrowed Meaningfully in Recent Years



Data as at September 30, 2019. Source: Bloomberg.

EXHIBIT 32

Bond Proxies and Growth Stocks Have Benefitted Mightily From the Decline in Interest Rates



Data as at August 31, 2019. Source: Bloomberg.

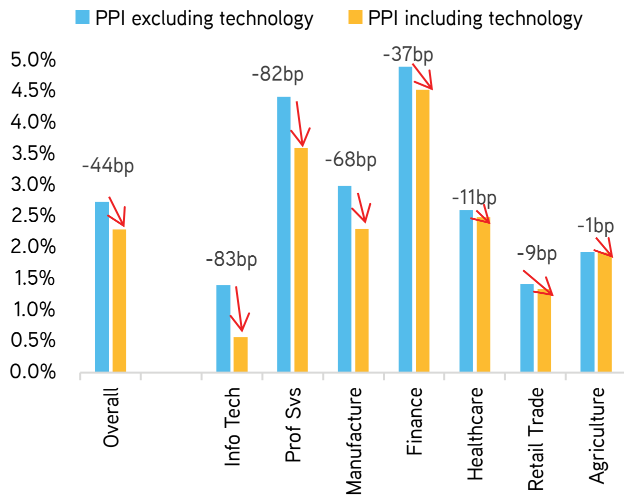
Our bottom line: Outside of ongoing strong housing starts, we believe that any benefit we initially received from negative interest rates in both the global economy and the capital markets has now largely run its course. In fact, at $17 trillion in size, the lion's share of negative yielding securities is now increasingly damaging the plumbing of global financial institutions and the constituents they serve, including individual savers and corporate entities that need capital to expand and grow.

However, we acknowledge that the potential of a shift in policy away from negative rates is extremely low, and as such, we think that citizens in countries that are experiencing negative nominal rates should encourage their governments to spend more to help drive growth. In particular, we would suggest more private sector spending, even including expenditures encouraged by tax cuts. The cost for doing so is now extraordinarily low, and the upside from any incremental reacceleration in nominal GDP would be quite substantial, in our view.

What does this all this mean for asset allocation? For fixed income investors, we think that the status quo is likely to hold, and as such, our Yearn for Yield thesis remains intact. In particular, we expect higher savings rates to persist for some time. Also, as we show below, we think that near-term inflation will remain muted, driven heavily by technological efficiency/transparency. Against this backdrop, we think that Infrastructure, Real Estate Credit, and Asset-Based Finance – all private investments that harness the illiquidity premium and own cash flowing collateral – are likely to be re-rated upward in the coming quarters.

EXHIBIT 33

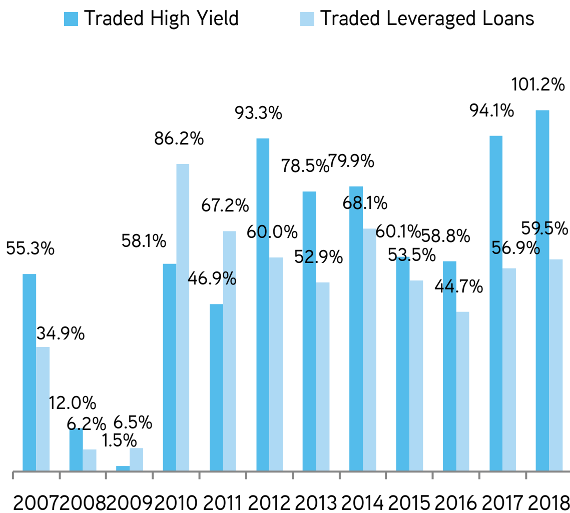
Technology's Effect on Prices by Industry Has Been Significant in Recent Years



Note: In the BEA's input-output data (I-O), we identified technology-related inputs as follows: computer and electronic products; broadcasting and telecommunications; data processing, internet publishing, and other information services; and computer systems design and related services. We identified as closely as possible Producer Price Index (PPI) series for each industry in the I-O, including all four technology inputs. The weightings were multiplied by technology's PPI to arrive at the contribution to each industry's PPI. For each industry's PPI minus technology, we subtracted the tech contribution from PPI and divided it by one minus technology's weight. Data as at 2005 through 2018. Source: KKR Global Macro & Asset Allocation calculations, Haver Analytics, BEA, BLS, Vanguard.

EXHIBIT 34

The Illiquidity Premium for Credit Has Actually Grown in Importance Since 2016 for Both Loans and High Yield

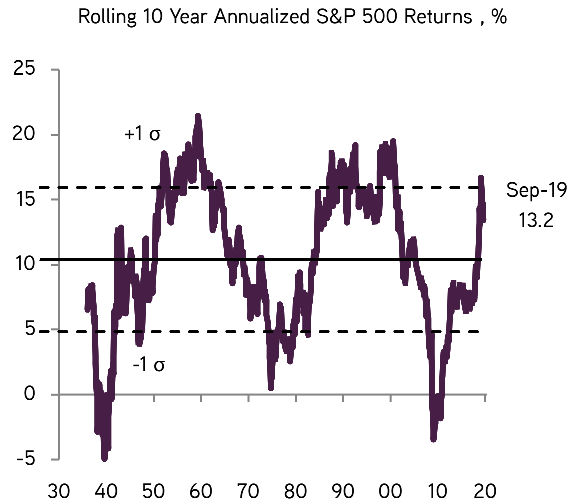


Data as December 31, 2018. Source: Bloomberg, Ares Capital.

On the equity side (as we mentioned earlier), we think that we are entering a period where more negative rates – either real or nominal – will *not* lead to further multiple expansion. So, we think that the ability to buy complexity, particularly mismanaged companies with poor capital structures and/or carve-outs, should be a priority for investors who have longer-term liabilities. Importantly, it is not just the hived-off subsidiary that 'wins,' as there is real potential value creation at the parent company as well.

EXHIBIT 35

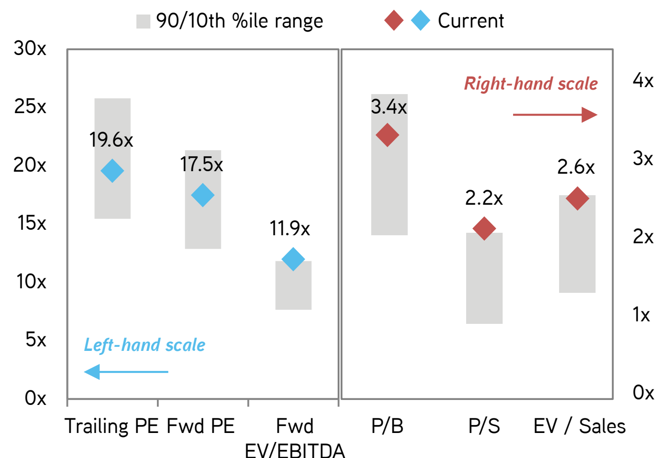
Rolling Annualized Returns for the S&P 500 Are Nearly at One Standard Deviation Above Their Long-Term Average



Data as at August 31, 2019. Source: Bloomberg, Factset.

EXHIBIT 36

Many Valuation Metrics Are Near Top of the Ranges Relative to History



Data as at September 30, 2019. Source: Bloomberg, S&P.

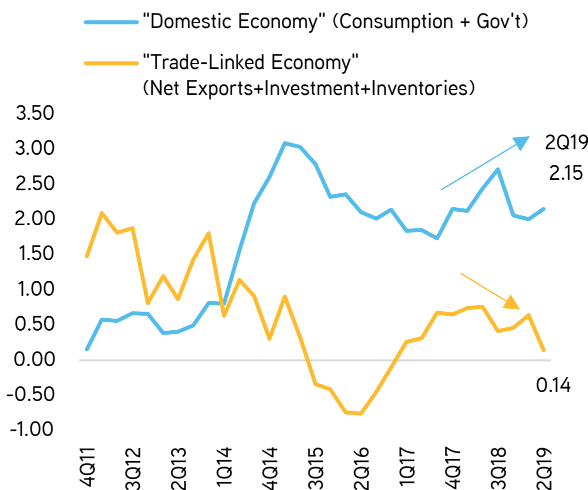
Overall, though, as we showed in *Exhibit 1*, we think that expected returns for all investors, including pensions, endowments, insurance companies, and family offices, are coming down. For our nickel, we have essentially pulled forward future returns, and as a result, the next 5-years returns are likely to be more muted. However, they don't have to be terrible. Indeed, as we show in *Exhibit 35*, the only other time beside the GFC that 10-year rolling returns for Public Equities went negative was after the 1929 crash. Thereafter, risk assets actually performed surprisingly well until there was a policy mistake several decades later. As such, we could envision a similar type outcome occurring from 2020 to 2030, one that has modestly positive returns – albeit with more volatility and less absolute firepower than the 2009-2019 period.

Question #2: Given All the Noise Linked to Geopolitical Tensions and Slowing Capital Expenditures, What Might the Next Recession Look Like, and What Does It Mean for Interest Rates and Asset Allocation?

Given all the negative macro data points we are seeing, another frequent question we increasingly get from clients is what might an economic slowdown look like this cycle? Also, if you are forecasting one, when would it likely occur? As we have been saying, we are definitely forecasting a slowdown, but we want to be clear: We remain steadfast that the potential for a 2008-type event is highly unlikely under almost every scenario. Banks are not over-leveraged, central banks are already in easing mode, and consumers in the U.S. are in decent shape. Finally, given such low rates and a 2020 presidential election, we also see the potential for more fiscal spending, despite bulging deficits.

EXHIBIT 37

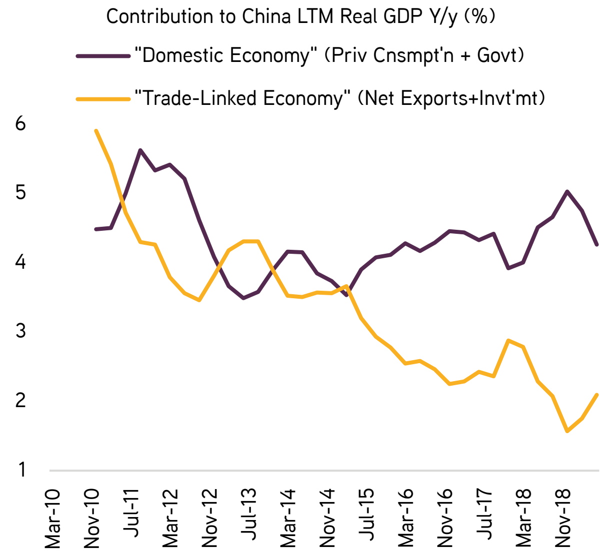
Weakness in the Trade-Linked Economy Is Being Offset by Fiscal Spending and Consumption…



Data as at June 30, 2019. Source: BEA, Haver Analytics.

EXHIBIT 38

… A Similar Story Holds True in China



Data as at June 30, 2019. Source: China National Bureau of Statistics, Haver Analytics.

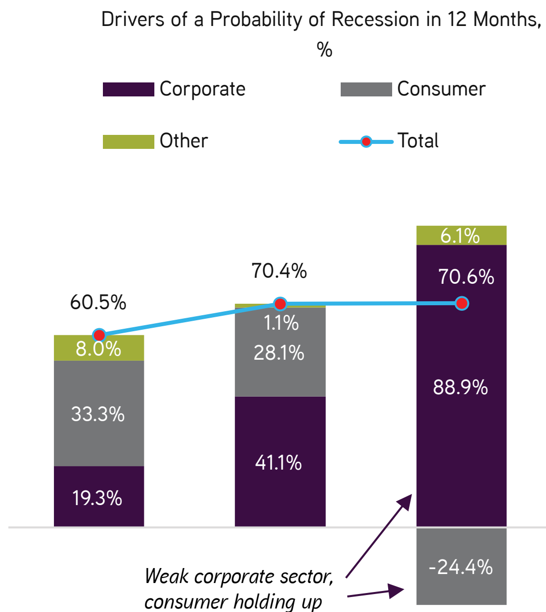
That said, we are finally seeing the economic slowdown that we have long been warning folks could start to occur around the second half of 2019. In particular, my colleague Dave McNellis is forecasting a global slowdown in fixed investments and exports that lasts well into 2020. Consistent with this view, we see little reason for CEOs to bulk up on inventories, given trade tensions, disruption risks, and peaking corporate margins. So, the world we are describing looks a lot like what we show in *Exhibits 37* and *38*, a two-tiered economy that never reaches maximum potential nor faces a major sustained slowdown.

How bad will it be? If we had to speculate today on tomorrow and what the economy might look like, we think that both the formal recession of 2001, the 2011/2012 debt crisis, and the more temporary slowdown we saw in 2016 are important reference points to study. During these periods consumption slowed but did not go negative. Consistent with this view, we take some comfort that, despite our recession model flashing warning signs, the strength of the consumer seems to be implying some important ballast. One can see this in *Exhibit 39*. Also, implicit in what we are saying about the current slowdown is that housing will not tank this cycle because of strong household formations, which can help activity return to trend (*Exhibits 41* and *42*).

> **"As we have been saying, we are definitely forecasting a slowdown, but we want to be clear: We remain steadfast that the potential for a 2008-type event is highly unlikely under almost every scenario."**

EXHIBIT 39

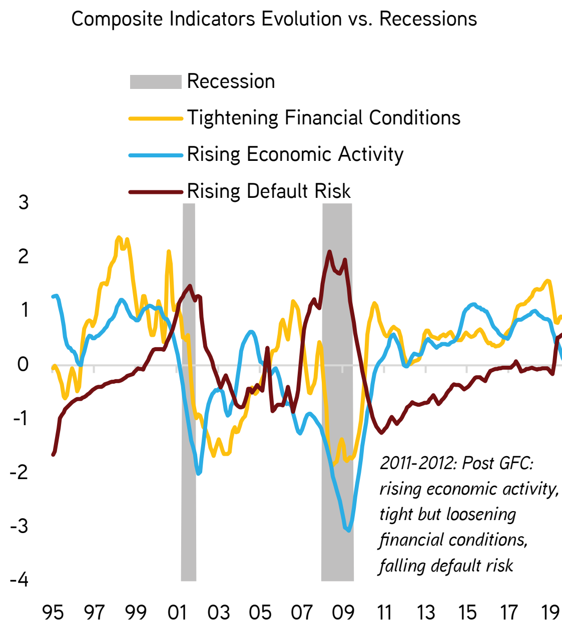
The Key to Any Potential Recession Is How the Consumer Performs, As Currently the Consumer Is Acting as A Buffer in Our Model...



Data as at September 30, 2019. Source: KKR Global Macro & Asset Allocation analysis.

EXHIBIT 40

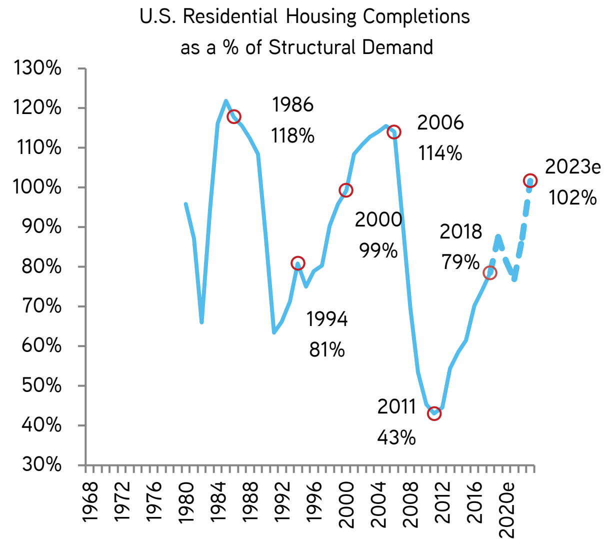
...While There Is an Increase in Default Risk Within the Economy



Data as at September 30, 2019. Source: KKR Global Macro & Asset Allocation analysis.

EXHIBIT 41

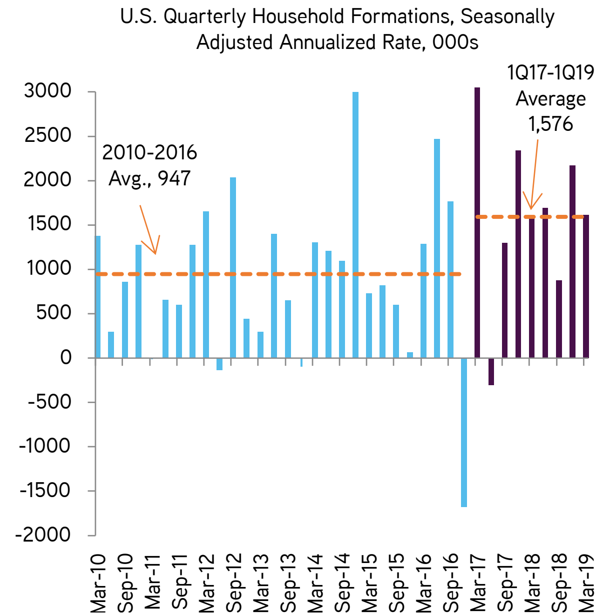
Housing Is Still Below True Structural Demand. We View This Backdrop as Bullish...



Data as at December 31, 2018. Source: Bureau of Economic Analysis, Haver Analytics.

EXHIBIT 42

...In Addition, We Forecast Quarterly Household Formations to Remain Robust



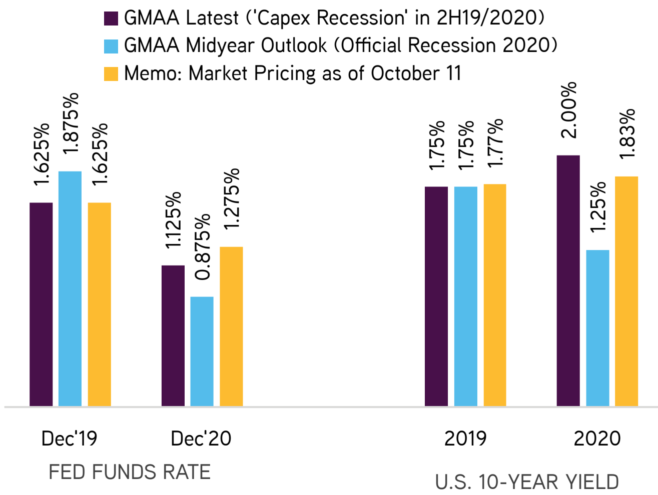
Data as of March 31, 2019. Source: Census Bureau, Haver Analytics, KKR Global Macro & Asset Allocation analysis.

That said, we do not want to be overly optimistic that the current slowdown will be uneventful. *Indeed, relative to 2016 (the last mini-slowdown), the Fed Funds rate is today now substantially higher, despite international growth being weaker, trade tensions being elevated, and geopolitical storm clouds being more pervasive*. Also, as we have consistently documented in our written work since 2017, we remain quite cautious on the outlook for autos, as we think the cycle has peaked, even in the U.S. As such, we are increasingly of the mindset that 2001 and 2011/2012 will provide the most relevant roadmap for investors to study.

So, against this backdrop, we come away thinking we need to add an additional Fed cut to our outlook for the second half of 2019 (i.e., we now expect three total cuts in 2019). Contrary to what Chairman Powell is saying, we do not think that the current easing cycle is a mid-cycle adjustment. Rather, our forecast is that he and his colleagues at the Federal Reserve will now lower rates 125 basis points this cycle, a slightly more dovish Fed stance relative to history when the Fed Funds rate has been 50 basis points or more above the yield on the U.S. two-year Treasury (*Exhibit 51*).

EXHIBIT 43

KKR Global Macro & Asset Allocation U.S. Rates Outlook

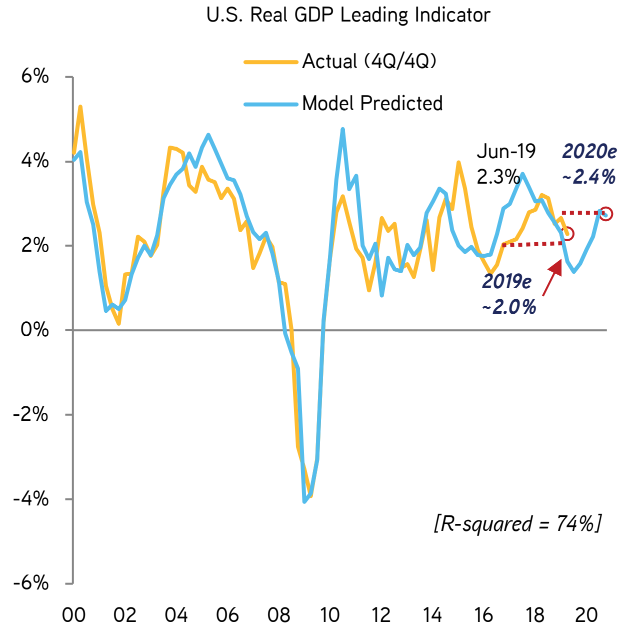


Data as at October 11, 2019. Source: Bloomberg, KKR Global Macro & Asset Allocation analysis.

Looking to 2020, however, given all the stimulus that is now being applied to the system, we are actually raising our call on rates and growth. As such, we now expect just two further Fed cuts in 2020, with fed funds ending the year at 1.125% (i.e., down 125 basis from peak, which would be consistent with the median shown in *Exhibit 51*). Previously we modeled fed funds falling below one percent. In terms of 10-year yields, we now expect they could trade in a range of 1.5%-2.0%, whereas previously we modeled 1.0%-1.5%.

EXHIBIT 44

Our Leading Indicator for U.S. GDP Growth – in Isolation – Sees Some Improvement Possible in 2H20; However, Our Quantitative Model Does Not Include Trade Headwinds and the Deteriorating Conditions We See Emerging



Data as at September 10, 2019. Source: Federal Reserve, Bureau of Labor Statistics, National Association of Realtors, ISM, Conference Board, Bloomberg, KKR Global Macro & Asset Allocation analysis.

EXHIBIT 45

Lower Oil Prices and Stronger Existing Home Sales Are Currently Driving Our Thesis About a Rebound in Growth in the Second Half of 2020. However, Credit Conditions Must Also Remain Somewhat Benign

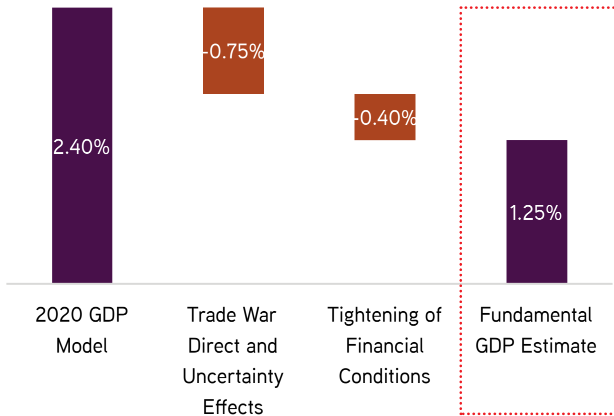
Breakdown of Drivers of Our KKR U.S. Real GDP Leading Indicator

	2019E	2020E	*CHANGE 2020E VS. 2019E*
OIL PX DYNAMICS	-0.4%	-0.1%	*0.4%*
EXISTING HOME SALES	-0.2%	0.1%	*0.2%*
CREDIT CONDITIONS	0.7%	0.7%	*-0.1%*
HOUSEHOLD WEALTH	0.2%	0.1%	*0.0%*
INTERCEPT	1.7%	1.7%	*0.0%*
MISC. FACTORS	-0.1%	0.0%	*0.0%*
INT'L SHORT RATES	0.1%	0.0%	*-0.1%*
TOTAL	**1.9%**	**2.4%**	**0.5%**

Data as at September 10, 2019. Source: Federal Reserve, Bureau of Labor Statistics, National Association of Realtors, ISM, Conference Board, Bloomberg, KKR Global Macro & Asset Allocation analysis.

EXHIBIT 46

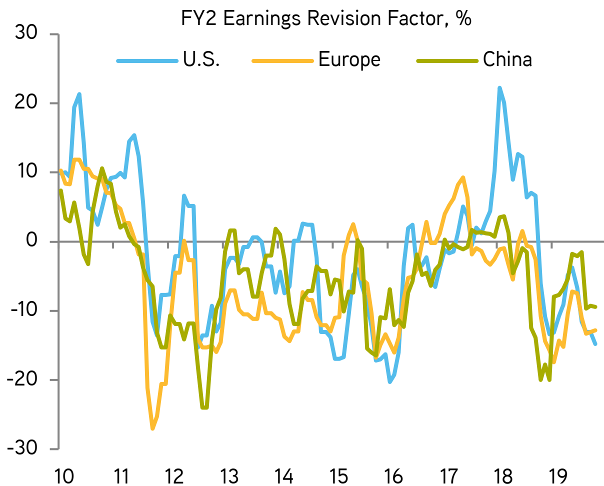
However, We Do Acknowledge That External Factors Will Likely Reduce Some of the GDP Growth Our Model Is Currently Forecasting for 2020



Data as at September 30, 2019. Source: BEA, KKR Global Macro & Asset Allocation analysis.

EXHIBIT 47

We Believe We Have Now Entered a Period Where Corporate Profits Will Lag Nominal GDP. Current Revision Trends Tend to Reinforce our View



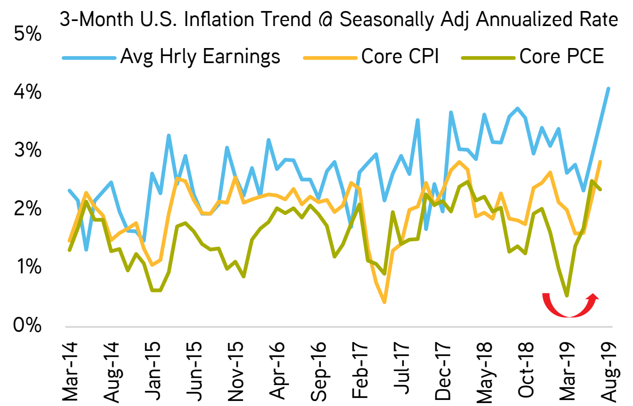
Data as at October 11, 2019. Source://www.econ.yale.edu/~shiller/, Bloomberg.

Importantly, our GDP indicator, which we show in *Exhibit 44,* is potentially signaling a modest uptick in growth starting around the second half of 2020. Low oil prices and better existing home sales support the uptick in the model (*Exhibit 45*). However, as the model also underscores, favorable credit conditions cannot deteriorate meaningfully from current levels, as they presently account for 70 basis points of the 2.4% growth that the model is forecasting. Given this heavy dependence (and our more cautious view on credit), we do want to flag that our 'official' GDP forecast for 2020, which we will publish in early January, will likely come in well below the 2.4% currently signaled by our indicator. To this end, we show the different puts and takes to consider relative to our quantitative model in *Exhibit 46*, which suggests GDP growth between one and two percent is likely more realistic.

Looking at the details, the fundamental headwinds that we factor into our 2020 GDP forecast include i) 75 basis points of drag from the trade war (we factor in both direct drags from tariffs, as well as indirect drags from business uncertainty) and ii) an assumption that there is some tightening of financial conditions in 2020, as liquid markets begin to better reflect dislocations that we are already starting to see in the primary credit market. In terms of our specific assumptions regarding the trade war, we model that all existing tariffs remain in place, but that President Trump does not follow through on threats to raise prior rounds to a 30% rate, or to implement new 15% tariffs on $160 billion of goods in December.

EXHIBIT 48

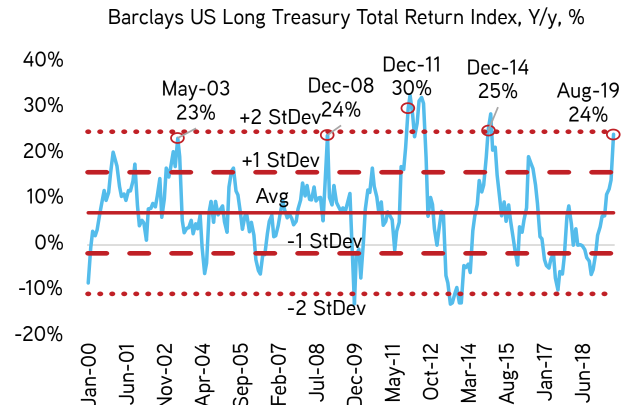
Quietly, Inflation Readings Have Crept Higher in Recent Months



Data as at September 10, 2019. Source: BEA, Haver Analytics, KKR Global Macro & Asset Allocation analysis.

EXHIBIT 49

Long Bond Returns Approached a +2 Standard Deviation High in August



Data as at September 10, 2019. Source: Bloomberg, KKR Global Macro & Asset Allocation analysis.

Somewhat surprisingly, higher inflation readings also contribute to our firmer rates outlook for next year. *Exhibit 48* illustrates that all major measures of U.S. inflation—including wages, core CPI, and core PCE—crept quietly higher in the second quarter of 2019 and are now running near the high end of the range for this cycle. Tariffs may be creating some transitory uplift in inflation, but we think there is also a more fundamental increase due to little available slack in either labor or housing markets.

Consistent with this view for inflation, we are firmly of the mindset that bonds may have already rallied to such an extent that we see some risk of mean revision. Indeed, as *Exhibit 49* shows, the recent rally in long bonds equates to almost a two standard deviation event. Not surprisingly, as we show in *Exhibit 50,* bond returns are often negative over the subsequent 12 months following such a huge surge in price appreciation.

EXHIBIT 50

Historically Bond Market Surges Have Been Associated With Negative Returns Over the Following Year

	BARCLAYS US LONG TREASURY INDEX	
	TRAILING 12MO TOTAL RETURN	SUBSEQUENT 12MO TOTAL RETURN
MAY-03	23%	-6%
DEC-08	24%	-13%
DEC-11	30%	4%
DEC-14	25%	-1%
AUG-19	**24%**	**???**
MEDIAN	**24%**	**-4%**

Sample based on months when the index first rallied to near +2 standard deviation levels. Period analyzed = 2000-current. Data as at September 10, 2019. Source: BEA, Haver Analytics, KKR Global Macro & Asset Allocation analysis.

To be sure, there are lots of factors that need to go right for the rebound that we are forecasting for the second half of 2020 to be correct. For starters, our central thesis that the manufacturing economy does not pull the U.S. services economy into a recession needs to be correct; however, as we look ahead to the second half of 2020, we actually see some possibility of a growth reacceleration. Some of this optimism – as mentioned earlier – is linked to the housing sector, but some of it is simply the reality that year-over-year comparisons get much easier in 2H20, given how weak some of the current reports are in the industrial segment of the global economy.

In addition, we will continue to focus heavily on the actions of the Federal Reserve. Specifically, we need to be right that the Fed will not mistakenly view the current economic malaise as a mid-cycle slowdown. In our view, the current slowdown is much more serious. Investors certainly seem to agree with our view, as the Federal Funds rate reached more than 50 basis points above the U.S. two-year Treasury in June 2019, a highly unusual event. As one can see in *Exhibit 51,* this set-up is quite anomalous, and it has, on average, led to a 100 basis point easing cycle. Importantly, as we indicated earlier, we think that there will be 125 basis points in easing this cycle (three cuts in 2019 and two in 2020), which is 25 basis points more than the historical average.

EXHIBIT 51

U.S. Two-Year Yields Are Well Below the Current Fed Funds Target. Historically, the Fed Has Always Cut Under Such Circumstances

	2YR YIELD - FED FUNDS TARGET (BASIS PTS)	12MO FWD CHANGE IN FED FUNDS TARGET (BASIS PTS)	12MO FWD CHANGE IN US 10YR YIELD (BASIS PTS)	12MO FWD S&P 500 TOTAL RETURN	MONTHS UNTIL OFFICIAL ONSET OF NEXT RECESSION
APR-89	-53	-150	2	11%	16
AUG-98	-59	-25	93	40%	32
SEP-00	-52	-350	-120	-27%	7
SEP-06	-54	-50	-5	16%	16
AUG-19	**-63**	**???**	**???**	**???**	**???**
MEDIAN	**-54**	**-100**	**-2**	**13%**	**16**

Dates represent the first month in a cycle in which two-year yields were more than 50 basis points below the fed funds rate. Data as at September 10, 2019. Source: BEA, Haver Analytics, KKR Global Macro & Asset Allocation analysis.

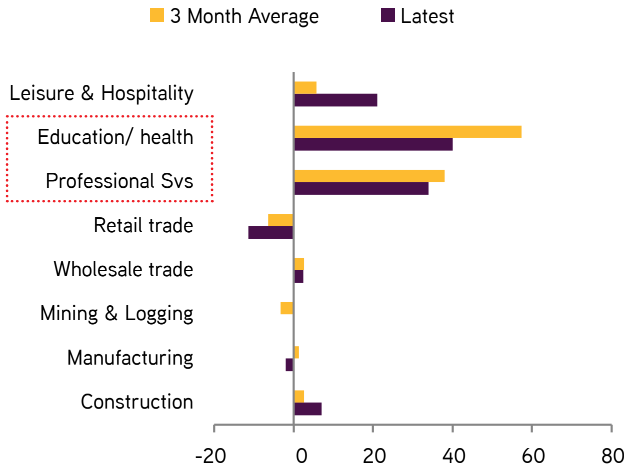
Third, given how much our baseline forecast relies on the U.S. consumer, we will be intently focused on consumer well-being, particularly as it relates to payroll growth. We take comfort in two facts. First, the U.S. economy only needs to add 100,000 jobs for unemployment to stand still, so even last month's 122,000 figure is actually not bad. Second, as we show in *Exhibit 52,* nearly 80% of

> **"Nearly 80% of jobs growth over the last three months is consolidated into Education/Healthcare and Professional/Business Services, all areas where we see more secular growth ahead relative to other parts of the U.S. economy."**

jobs growth over the last three months is consolidated into Education/Healthcare and Professional/Business Services, all areas where we see more secular growth ahead relative to other parts of the U.S. economy. Said differently, while we do expect job growth to weaken, we think growth in these pockets of secular strength should help cushion against any major sustained downturn.

EXHIBIT 52

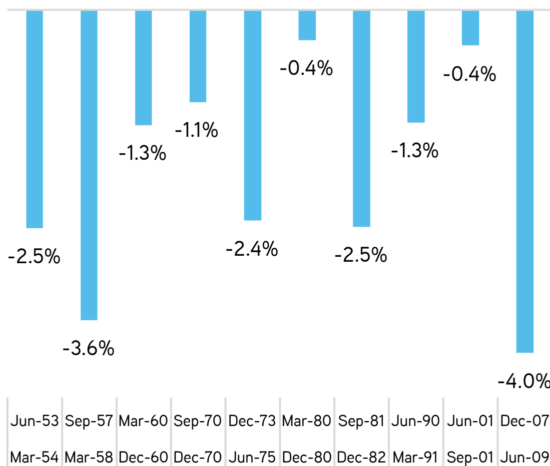
Over the Last Three Months, 80% of the Job Growth Has Come From Education/Health and Professional Services



Data as at October 3, 2019. Source: Bureau of Labor Statistics, Haver Analytics.

EXHIBIT 53

We Do Not Expect the Next Downturn to be a 2008-Type of Event



Data as at June 30, 2019. Source: BEA, Haver Analytics.

Again, as noted earlier, our base view for the U.S. economy is the current economic slowdown in the U.S. will be significant, but it will not morph into a 2008-type event. Rather, we see something more akin to the pullbacks in 2001 and/or 2011/2012. Consistent with this macroeconomic outlook, we have added more flexibility in our portfolio through an increased allocation to Distressed /Special Situations on the private side and Opportunistic Credit on the liquid side (see our 2019 January Outlook piece for more details).

Outside of the U.S., however, we are less bullish on growth, and as a result, we continue to look for muddle through, below trend GDP growth (including the reality that places like Germany and India are all actually at or near recessionary conditions), driven by the ongoing trade 'hangover' and structural slowing in China. If we are right, then we may need to even further increase our Distressed/Special Situations allocation when we update our target asset allocation heading into 2020. We also believe that this environment will continue to allow Private Equity in Europe and Asia to meaningfully outperform the public markets (i.e., given the structural flaws inherent in the public markets in these regions and their linkages to cyclical GDP sectors, we think that the value of the illiquidity premium will increase in the years ahead).

Question #3: How Should We Think About Volatility Across the Private Markets, Especially Relative to the Return Potential?

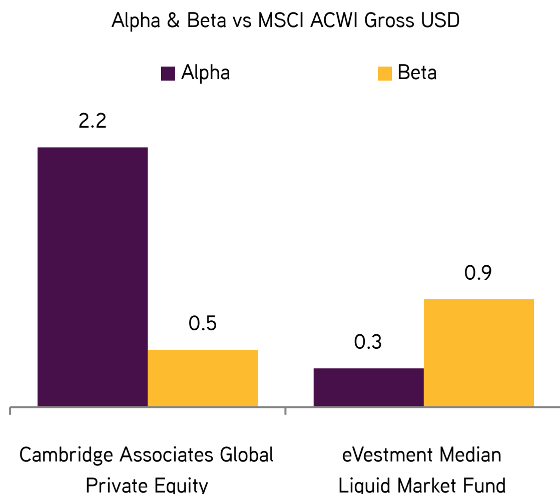
As more and more traditional investors have migrated towards the private markets to take advantage of the illiquidity premium amidst low rates and record low returns, we have been increasingly asked about the volatility associated with the returns in the private markets. To be sure, this question is not an easy one, but we do think that there are some salient points to consider for allocators who are increasingly investing more of their capital in private investments.

For starters, there has been a lot of debate about why private market volatility is often reported as less volatile than listed markets. In Private Equity, for example, the lower volatility relative to the public markets does not seem to jive with the facts that PE 1) typically has more leverage; and 2) is generally more focused on smaller capitalization companies than indexes like the S&P 500. Both points are certainly true, but there are counterarguments to also consider, we believe. First, the alpha component of Private Equity is much larger than the beta component (*Exhibit 54*), and equally as important, is that alpha is generally less correlated than beta, and a lot of that dispersion actually nets out at an index level.

> **"First, the alpha component of Private Equity is much larger than the beta component, and equally as important, is that alpha is generally less correlated than beta, and a lot of that dispersion actually nets out at an index level."**

EXHIBIT 54

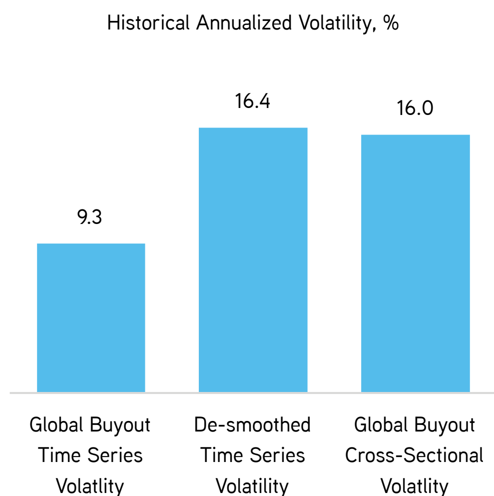
Private Equity Has More Alpha, Less Beta Than Traded Equities



Data as at 4Q00-4Q18. Source: Cambridge Associates, eVestment, Bloomberg.

EXHIBIT 55

Time Series Volatility May Not Always Be the Best Measure of Volatility



Time series volatility = standard deviation of pooled quarterly index returns; Cross-sectional volatility = standard deviation of since inception fund net IRRs for vintages 2001-2016. Desmoothing removes the autocorrelation embedded within the data. Data as at 4Q00-4Q18. Source: Preqin, KKR Global Macro & Asset Allocation analysis.

"

Said another way, not all private market volatility is bad volatility.

"

So, where do we finally come down on the issue? We agree that time series volatility in the private markets is likely understated. *In our view, cross-sectional volatility of funds across the index offers a better picture, as it more closely resembles "de-smoothed" volatility. In practice, quantitative analysts un-smooth time series volatility by removing the auto-correlation or memory of old pricing from the index*[3]. Notably, we are not alone in our thinking, as the CFA GIPS guidelines agree with us[4].

However, we do not agree with the theory that Private Equity should be marked with the same volatility as a public equity. There are fundamental differences between listed and unlisted asset classes that sometimes a public market investor may overlook. Indeed, at the most basic level, public market value is not always an accurate view of fair value (and this point includes the upside and downside over-shoots). Also, we value – among other things – the upside optionality that private markets offer relative to traditional liquid markets as well as the ability to time exits and entrances.

Ultimately, we think using a common sense approach across asset classes makes sense relative to size, sector exposure, leverage, and stage in the company life cycle. So, while we think that a time series volatility may be too low, we also think that a 'quant smoothed' volatility that replicates a public market may be too high.

Second, our work shows that higher risk doesn't always mean higher return in all instances, and as such, it is important to understand performance nuances of the various asset classes, especially in the higher octane private market ones. To do this, Frances examined reams of private and public market benchmark data over the last 20 years. What she found was that returns for Private Equity were notably above Public Equities. One can see this in *Exhibit 56.* This pecking order of returns makes sense to us, as an investor typically expects to get paid for tying up their capital in Private Equity relative to liquid securities, and all else being equal, we would expect stocks to outperform bonds, or the risk free rate, over long periods of time.

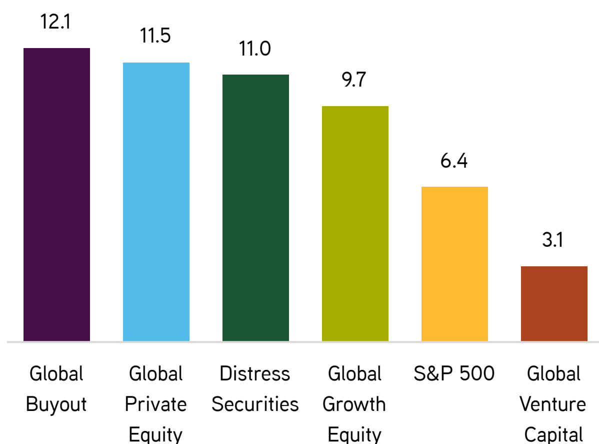
Somewhat surprisingly — and where we think our analysis gets more interesting — is that Venture Capital (VC) funds did not share the same result as Private Equity funds. In fact, their annualized return over the same time frame was a paltry 3.1%. Moreover, despite having lower returns, the volatility linked to VC funds was actually higher than almost all asset classes we studied. One can see this in *Exhibits 58* and *59*, respectively.

3 Private market quarterly returns are estimated returns and as a result there is a "memory" of prior pricing, which quantitative analysts and statisticians call auto-correlation. Auto-correlation can easily be corrected by a method called "de-smoothing," which removes the stale pricing embedded in private assets that are not traded in the market.

4 The CFA Institute Global Investment Performance Standards highlights the concept that Private Equity fair value is misunderstood as being the same as Listed Equity market value. It further highlights the finite life of Private Equity, as well as timing and control of cash flows, which make a present value of cash flows or since inception internal rate of return as more appropriate than time weighted returns. https://www.cfainstitute.org/-/media/documents/code/gips/gips-handbook-3rd-edition.ashx

EXHIBIT 56

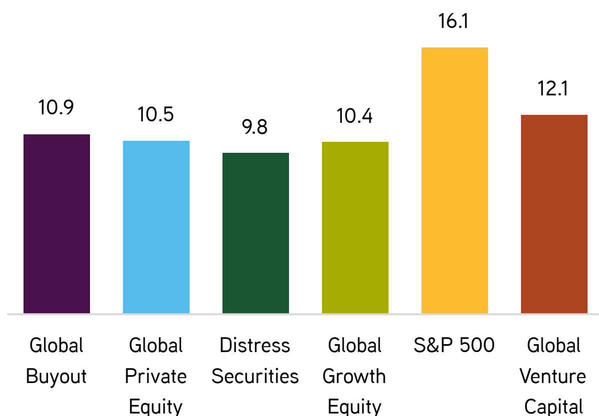
Historically, Based on Benchmark Data, Private Equity Has Outperformed Public Equities...



Based on horizon pooled returns net of fees, expenses and carried interest. Data as at May 2019. Source: Cambridge Associates, KKR Global Macro & Asset Allocation analysis.

EXHIBIT 57

... With Lower Time Series Volatility



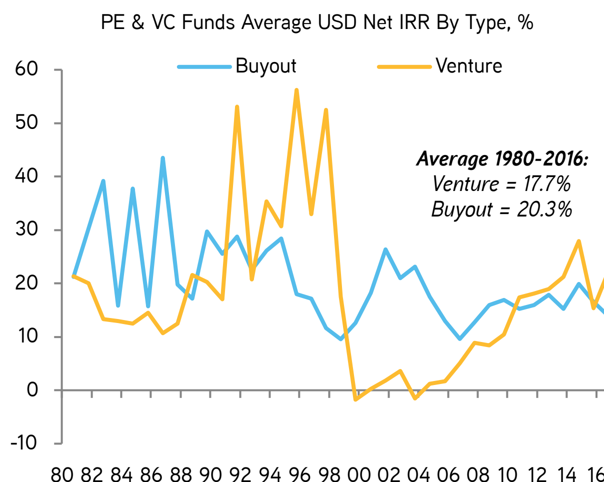
Based on horizon pooled returns and represents time series volatility between 2001-2018. Data as at May 2019. Source: Cambridge Associates, KKR Global Macro & Asset Allocation analysis.

However, these statistics at the aggregate level for Venture Capital do not jive with the extremes we have seen at the micro level from our work with leading endowments, pensions, and family offices that own substantial amounts of Venture Capital. So why the seeming discrepancy between the data and our conversations with CIOs? As Frances dug deeper into the data, what she found was that the discrepancy could be explained by two primary influences: vintage and concentration. Specifically, Venture Capital notably outperformed in the early 1990's when small capitalization stocks outperformed large capitalization stocks. Meanwhile, during this period of outperformance, returns were dominated by just a handful of funds in the right tail. Today, by comparison, the industry is much larger and more diverse, with many players that have not consisently translated thoughtful ideas into substantial returns for their Limited Partners (LPs).

So, what does this mean for allocators? It means that CIOs should focus on developing relationships with only the strongest players, as manager selection in VC is more important than in almost any other segment of the private markets. It also suggests that vintage diversification is important. Increasingly, though, we do worry that for all private market products, as more and more traditional money flows into the private markets, the risk of allocators experiencing smaller illiquidity premiums and lower returns has grown, particularly at the smaller end of the market.

EXHIBIT 58

Private Equity Returns Are More Stable, While Venture Capital Returns Have Wider Variability

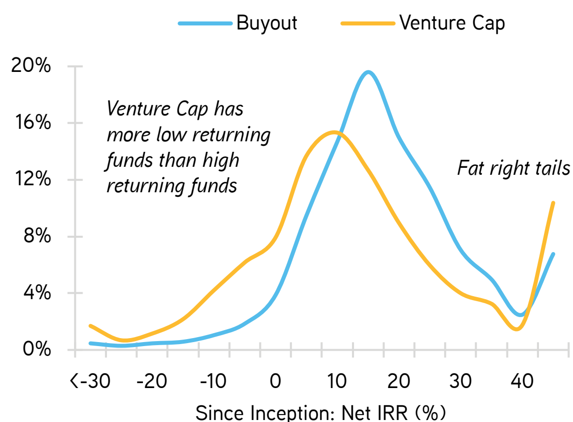


Average since inception Internal Rate of Returns (IRRs) by vintage year through 2016. Data as at May 2019. Source: Preqin, KKR Global Macro & Asset Allocation analysis.

> "So, what does this mean for allocators? It means that CIOs should focus on developing relationships with only the best players, as manager selection in VC is more important than in almost any other segment of the private markets."

EXHIBIT 59

Notably, Private Market Distributions Have Fat Right Tails



Based on since inception IRRs by Vintage for Vintages 1984-2016. Data as at May 2019. Source: Preqin, KKR Global Macro & Asset Allocation analysis.

EXHIBIT 60

Manager Selection Is Extremely Important in Private Markets, Particularly Relative to Public Market Comparisons

Data as at May 2019. Source: Cambridge Associates, eVestments, KKR Global Macro & Asset Allocation analysis.

Another area where we did work for investors was around the distribution of returns. As we show in *Exhibit 59*, the distribution of returns is not normal. Indeed, while the left tail appears normal, there is a fat right tail of funds that does extremely well. Second, when we break down performance by quartile, we note that fourth quartile performance tends to oscillate around zero and the big swings in returns is on the upside, implying that much of the volatility is upside volatility — a point we think may be lost on some investors.

Intuitively, this fact pattern makes sense to us, given the nature and duration of the funds. In particular, it's important to remember that if the left tail is capped at -100%, there are generally no forced liquidations, and funds are only partially marked-to-market due to the methodology for valuing a private asset. On the other hand, for the right tail, there is no cap on the upside and most of the exits occur when markets are doing well, thus creating an upside bias to returns. Furthermore, many funds do not mark-up investments until there is certainty of the exits, creating a significant re-rating of assets as they are sold. Said another way, not all private market volatility is bad volatility.

"Our work shows that higher risk doesn't always mean higher return in all instances, and as such, it is important to understand performance nuances of the various asset classes, especially in the higher octane private market asset classes."

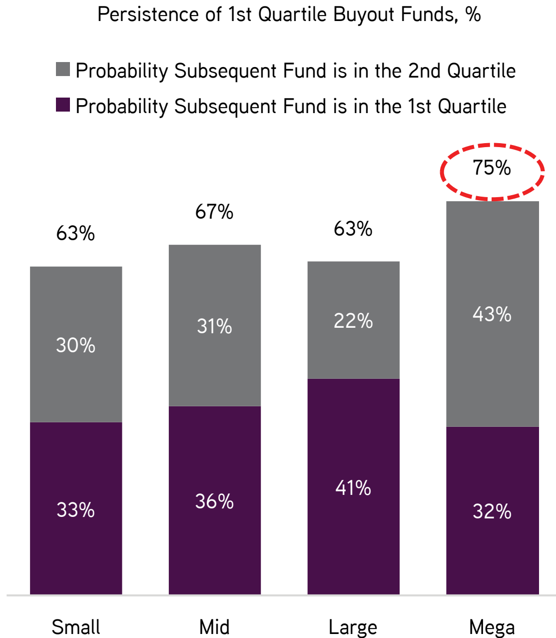
The final issue we examined relating to investing in private managers centers around persistency of performance, which we define as the potential for a successor fund to behave like the prior fund. So, if manager selection is important in the private market sphere, how reliable is past performance? What we found is that if a fund is in the first quartile, there is generally a two-thirds chance that the successor fund will be in the first or second quartile.

As we indicate in *Exhibit 61,* our work shows that persistence is strongest for Mega Cap Buyout funds, with a 75% chance that the successor fund will be in the first or second quartile. On the other end of the spectrum is Venture Capital, where persistence is close to 50%. Interestingly, persistency trends have been improving. Indeed, we note that the probability that a first quartile Buyout fund will remain in the first quartile for the successor fund has increased to 43% during the 2011-2016 from 29% for the 2001-2005 period. By comparison, persistence has fallen to 26% in the 2011-2016 period for Venture Capital from 33% in the 2001-2005 period.

Somewhat surprisingly, we also found that negative persistence is just as strong, if not stronger, than positive persistence in some instances. Specifically, the probability a successor fund of a fourth quartile fund will remain in the third or fourth quartile is also about two-thirds. Notably, Mega Caps rank slightly better on this metric (64%) while Large Cap PE (70%) and Midcap PE actually rank worse (69%).

EXHIBIT 61

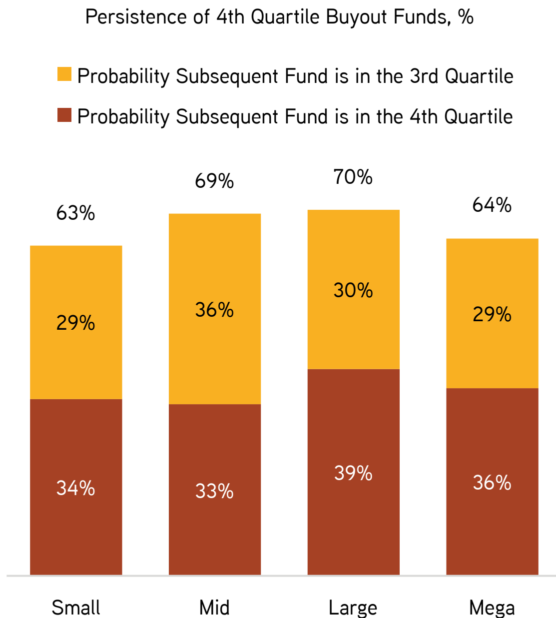
Persistence Is Strong, Particularly Across Mega Cap Funds...



Based on since inception IRRs by vintage for vintages 1984-2016. Note: The sample size of succesor funds for Emerging Markets and Asia is extremely small which skews the data set. Data as at May 2019. Source: Preqin, KKR Global Macro & Asset Allocation analysis.

EXHIBIT 62

...Notably, Negative Persistence Is Also Strong



Based on since inception IRRs by vintage for vintages 1984-2016. Note: The sample size of succesor funds for Emerging Markets and Asia is extremely small which skews the data set. Data as at May 2019. Source: Preqin, KKR Global Macro & Asset Allocation analysis.

Our bottom line: Investing in private asset classes is complicated. Maybe even more than the public markets, it requires a lot of analytical rigor at both the product and manager level. At KKR, we certainly are proponents of the reality that the value of the illiquidity premium is more desirable in today's lower rate and lower return world, but we also acknowledge that it is not the panacea to overcoming structurally lower returns across many asset classes. As we detailed above, each private asset class has both strengths and weaknesses, and ultimately, within each asset class, manager selection is of paramount importance, particularly in the more niche markets like Venture Capital. Also, as we are increasingly seeing, portfolio construction is becoming an even more valuable tool, as the industry further matures.

Despite these potential risks, there are inherent benefits that come from the private markets, particularly in today's increasingly volatile world. First, a private investor is typically not a forced seller, and as such, an allocator is not as subject to the wide bid-ask spreads during times of heightened uncertainty. As such, there is flexibility around the pacing of deployment and timing of exits. Put another way, equity risk premium of long tailed investments is often different from short term investments, creating embedded value in the illiquidity premium. Second, as Frances' work shows, this flexibility of timing creates a right tailed distribution of investment outcomes. Finally, while underlying volatility is higher than index or benchmark volatility, data suggests that there is more upside than downside volatility, we believe.

Section II: CONCLUSION

One of the many benefits of working at a firm like KKR is the power of the 'network effect.' Specifically, we are able to leverage insights from our deal teams, our portfolio companies, and our valued external resources, including our clients, to try to help us all *collectively* navigate what has become an increasingly difficult macroeconomic and geopolitical landscape. We see this *Insights* piece as a reflection of our partnership with these key constituents, and now with Frances' return to the United States to help further bolster our asset allocation efforts, this report has given us increased conviction around several key topics that are directly impacting the performance of all global allocators of capital. They are as follows:

1. First, we are increasingly of the mindset that negative rates are approaching a level that is no longer productive for financial intermediaries or valuations in the global capital markets, Europe in particular. If there is good news, it is that – given what we have seen unfold in Europe – the potential for central bankers to adopt negative rates in the United States, or the United Kingdom, is now quite low, despite what we believe is a secular shift downward in the global rates curve. Indeed, from what we can tell, central bankers in these countries (i.e., the U.S. and U.K.) likely believe that negative rates would be perceived as overstepping their mandate, and there is a growing realization that the benefit of negative rates is increasingly being outweighed by the negative impact on both 1) credit creation; and 2) the financial intermediaries that support savers (e.g., banks and insurance companies). Where we do agree with the consensus is that much more fiscal impulses are needed. Unfortunately, the unsettled nature of politics in many developed countries reduces the likelihood that

stimulus is implemented not only thoughtfully but with a robust multiplier effect. Against this backdrop, we think that owning collateral-based cash flows with limited reinvestment risks becomes imperative for global CIOs.

2. Second, in terms of the macroeconomic outlook for the next 12 months, we stick to our call that more bumps lie ahead, particularly outside of the U.S. Even within the U.S., however, our work shows that we are already in a technical 'manufacturing recession.' Consistent with this view, we expect employment to soften and earnings to slow, but we do not think that the U.S. consumer economy will 'catch down' fully to the goods economy. This premise is central to our interest rate call for the Federal Reserve (three cuts in 2019 and two in 2020), and it dovetails with our forecast for some economic 'green shoots' in late 2020. Our confidence in this macroeconomic backdrop, which we think could be quite bumpy during the next 12 months, drives our overweight positions in our target asset allocation, including large positions in Opportunistic Credit, Infrastructure, Asset Based Lending, and Real Estate Credit. If we are wrong in our outlook, it will be because either credit spreads widen more than anticipated or housing is weaker than our forecasts.

3. In terms of asset allocation, Frances has done some interesting work to help investors think through not only volatility but also risk adjusted returns across Private Markets and Public Equities. As we mentioned earlier, we certainly value the illiquidity premium and the upside optionality that private markets offer relative to traditional liquid markets. However, as more capital spills into the industry, uncovering the nuances of what the aggregate private market benchmark actually reveals about individual manager performance, including persistency, will become of paramount importance, we believe. Finally, while we believe that there is real value in the illiquidity premium, private market volatility has probably been understated in the QE-driven backdrop that defined the 2012-2018 period.

Overall, we remain confident in our view that this market is not one to be tactically traded. Rather, we continue to focus on the key investment themes that we laid out in the introduction of this paper, many of which are long-tailed in nature. They provide diversification across countries and products, and maybe more importantly, they are manifestations of the intellectual 'curiosity' that we think is required to outperform in this market.

To review, we have migrated more of the portfolio towards cash flowing assets with collateral as a backstop, and we continue to lean into complexity and dislocation. In addition, we have increased our allocation to secular growth stories, particularly those with high free cash flow conversion capabilities. To date, our top-down approach has served us well, and as such, we continue to 'stick to the plan' we laid out in our mid-year report.

"As we mentioned earlier, we certainly value the illiquidity premium and the upside optionality that private markets offer relative to traditional liquid markets. However, as more capital spills into the industry, uncovering the nuances of what the aggregate private market benchmark actually reveals about individual manager performance, including persistency, will become of paramount importance, we believe."

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