

INSIGHTS

GLOBAL MACRO TRENDS

VOLUME 9.3 • APRIL 2019

The Uncomfortable Truth





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The Uncomfortable Truth

As the intensifying yearn for yield by investors increasingly bumps up against “the uncomfortable truth” of declining interest rates amidst soaring fiscal deficits and bulging debt loads, KKR’s Global Macro, Balance Sheet, and Risk Analytics team has analyzed what yield-oriented investors, especially those with large swaths of exposure to Fixed Income and Real Assets, can do to outperform without taking on undue risks in this environment. Our suggestion is to own more cash flowing assets linked to nominal GDP, build more flexibility across mandates, and shorten duration where appropriate. Importantly, despite our view that inflation will remain low in the medium-term, we respect that the ‘Authorities’ are trying shrink existing debt loads by holding nominal interest rates below nominal GDP. 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.

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A lie may fool someone else, but it tells you the truth: you’re weak.

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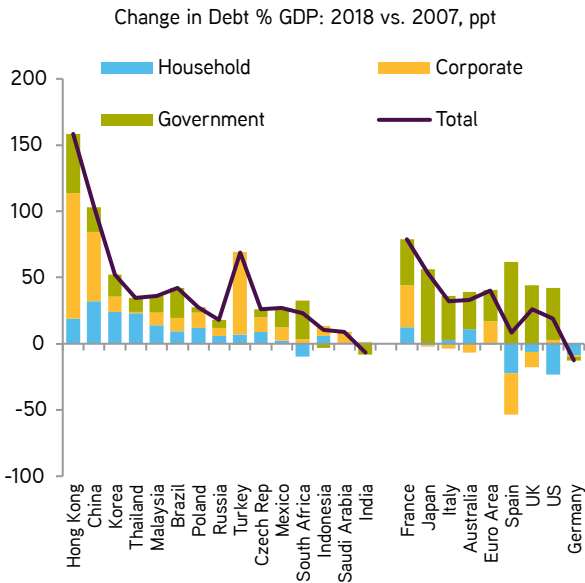
TOM WOLFE

AMERICAN AUTHOR AND JOURNALIST

With central banks once again feeling inspired to hold interest rates low around the lion's share of the developed world, many investors with whom we speak are increasingly confident that the "trifecta" of sluggish nominal GDP growth, low rates, and paltry inflation may be back upon us. However, it is not business as usual in the capital markets, as both debt issuance and deficits continue to soar across many areas of the private and public sectors (*Exhibits 1 and 2*). In fact, emboldened by the Fed's dovish commentary through 1Q19, there is now even talk in some circles on Wall Street as well as in academia of such heady topics as Modern Monetary Theory (MMT), which suggests that the global capital markets have an infinite capacity for debt – or at least that's the theory being put forth.

EXHIBIT 1

Government and Corporate Debt Has Increased Meaningfully Around the Globe



Data as at December 31, 2018. Source: Respective national statistical agencies, Haver Analytics.

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Beyond just central bank intervention creating downward pressure, we do expect aging demographics (e.g., China), excess capacity, and technological innovation to continue to put a lid on interest rates.

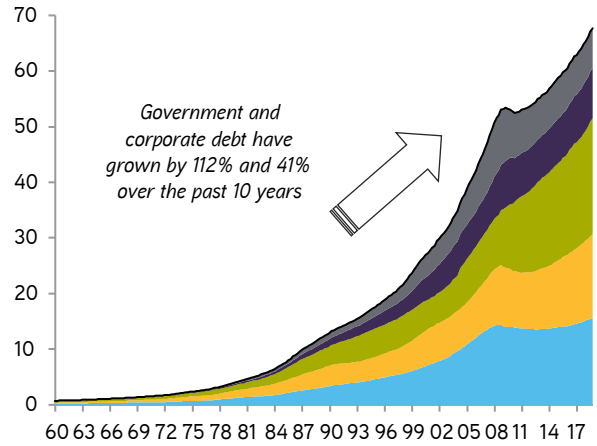
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EXHIBIT 2

U.S. Government and Corporate Debt Have Increased by 112% and 41%, Respectively, Over the Last 10 Years

US: Debt, US\$ Trillions

■ Household ■ Corporate ■ Government ■ GSE ■ Financials



Data as at December 31, 2018. Source: Federal Reserve Board, Haver Analytics.

Given this unusual macro backdrop, or what we have begun to term "the uncomfortable truth" of declining interest rates amidst rising deficits and heavy debt loads, we have been working hard as a team within KKR's Global Macro, Balance Sheet, and Risk Analytics (GBR) group to figure out what yield-oriented macro investors and asset allocators, particularly those with large swaths of exposure to Fixed Income and Real Assets, should do to outperform without taking on undue risks in this "new" environment. See below for a more fulsome deep dive into our various top-down frameworks, but our key conclusions are as follows:

1. **Beyond just central bank intervention creating downward pressure, we do expect aging demographics, excess capacity (e.g., China), and technological innovation to continue to put a lid on interest rates.** Consistent with this view, our work shows that wealthy individuals, particularly in the U.S., are saving more, and in doing so, are recycling more of their assets into yield-oriented securities. Meanwhile, real yields and inflation expectations are falling as we increasingly hear about price competition linked to Asian excess capacity in sectors such as industrials and commodities – and this is happening at a time when global nominal GDP is structurally slowing down (*Exhibit 15*). Finally, as we detail below, Moore's Law is leading to – by some estimates – a 40 basis point decline in *annual* U.S. inflation (*Exhibit 21*). Our bottom line: If we are right about all of these key drivers of current yield compression, then this backdrop should give us confidence that the overall global interest rate curve will remain low relative to historic levels.
2. **However, from a theoretical asset allocation perspective, we must all respect that governments are trying to boost nominal GDP by holding down nominal interest rates (*Exhibit 35*).** In

the past, this strategy has been an important tactic for defeasing long-term liabilities by putting more inflation in the system. Importantly, as we detail below, we do not see inflation as a near-term threat, but we think some protection in the portfolio is warranted as there will continue to be occasional spikes driven by geopolitical tensions. **As such, we do advocate shortening portfolio duration and owning more collateralized assets linked to nominal GDP.** At the moment, our favorites are U.S. two-year notes and short-term housing-related loans in the United States and Europe. We also like some of the structured product deals that we are now investing behind in Asia, especially in developed markets (e.g., Singapore and Australia).

3. **We believe strongly that holding nominal GDP above nominal interest rates also argues for investors to own some form of an overweight to longer duration Real Assets, especially those investments with upfront yield.** As we describe in more detail below, we are big fans of low to modestly leveraged Infrastructure, including “last-mile” fiber assets, mid-stream energy assets, cell tower assets, renewable energy, and power, water and utility assets. We also see potential in select public to private ideas that we are now uncovering in Asia. Details below.
4. **On the Real Estate side of Real Assets, we also maintain an overweight position.** As we detail below, our call to arms is still to own both Real Estate equity via Opportunistic Real Estate for capital gains and B-piece Real Estate Credit to generate some outsized income. Given that B-piece securities are issued at a discount, we like that the risk of capital impairment is low if the first few dividends are paid. We also like Real Estate as a compelling diversifier in our portfolio as it not only provides cash flow but also often has a distinct supply/demand cycle that is separate from the broader economic environment. Indeed, one can see the benefit of owning some Real Estate Credit in one of our sample portfolios in *Exhibit 7*.
5. **Finally, we continue to advocate flexibility across mandates in the Fixed Income arena, Liquid Credit in particular.** Given our view that the shift from monetary stimulus towards fiscal stimulus is likely to create periods of heightened uncertainty, we now heavily favor increasing flexibility across all the mandates that we oversee. However, the most practical application of our world view of heightened volatility is our sizeable allocation to Opportunistic Credit (*Exhibit 4*), which has maximum ability to invest across High Yield, Loans, and Structured Products. We also think it makes sense in the lower return, wider dispersion environment that we are envisioning.

EXHIBIT 3

There Is Currently \$9.1 Trillion of Global Negative Yielding Debt, Up From a Recent Low of \$5.7 Trillion in October 2018, Equating to the Highest Level Since 4Q17

	Select Global Bond Yields												
	6 M	1 Y	2 Y	3 Y	4 Y	5 Y	6 Y	7 Y	8 Y	9 Y	10 Y	20 Y	30 Y
Switzerland		-0.79	-0.81	-0.76	-0.73	-0.69	-0.62	-0.56	-0.49	-0.44	-0.37	0.05	0.19
Germany	-0.57	-0.58	-0.61	-0.60	-0.52	-0.43	-0.38	-0.31	-0.22	-0.13	-0.03	0.40	0.62
Japan	-0.16	-0.17	-0.18	-0.18	-0.19	-0.19	-0.19	-0.20	-0.19	-0.14	-0.08	0.35	0.52
Netherlands	-0.56		-0.60	-0.60	-0.53	-0.42	-0.32	-0.23	-0.13	-0.02	0.07	0.45	0.66
Finland		-0.56	-0.56	-0.54	-0.45	-0.33	-0.28	-0.13	-0.05	0.11	0.22		0.91
Denmark	-0.65		-0.66			-0.48	-0.33		-0.15		0.03	0.37	
Austria		-0.56	-0.55	-0.44	-0.36	-0.24	-0.15	0.00	0.07	0.17	0.28	0.73	1.08
France	-0.53	-0.53	-0.54	-0.44	-0.35	-0.23	-0.12	0.00	0.12	0.24	0.37	0.91	1.35
Belgium	-0.54	-0.52	-0.50	-0.43	-0.27	-0.14	-0.04	0.09	0.22	0.34	0.46	1.13	1.51
Sweden	-0.40		-0.52		-0.38	-0.26	-0.09		0.06	0.19	0.33	0.81	
Ireland		-0.58		-0.25	-0.24	-0.09	0.07	0.20		0.44	0.59	1.19	1.41
Bulgaria		-0.38	-0.21	-0.11	-0.05	0.08	0.19	0.26	0.51				
Slovakia		-0.45	-0.55		-0.17	0.00		0.24	0.34	0.54	0.59		1.52
Spain	-0.37	-0.33	-0.37	-0.21	-0.09	0.07	0.43	0.65	0.84	0.96	1.14	1.75	2.29
Portugal	-0.37	-0.37	-0.32	-0.16	0.05	0.17	0.56	0.77	0.94	1.15	1.27	2.01	2.34
Italy	-0.08	0.03	0.23	0.81	1.12	1.51	1.80	2.06	2.07	2.29	2.51	3.26	3.48
Norway	1.13			1.27		1.34	1.37	1.40	1.46	1.51	1.57		
U.K.		0.67	0.65	0.67	0.73	0.78	0.80	0.86	0.94	0.92	1.04	1.51	1.58
U.S.	2.43	2.41	2.32	2.28		2.30		2.39			2.48		2.88

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

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With central banks once again feeling inspired to hold interest rates low around the lion’s share of the developed world, many investors with whom we speak are increasingly confident that the ‘trifecta’ of sluggish nominal GDP growth, low rates, and paltry inflation may be back upon us.

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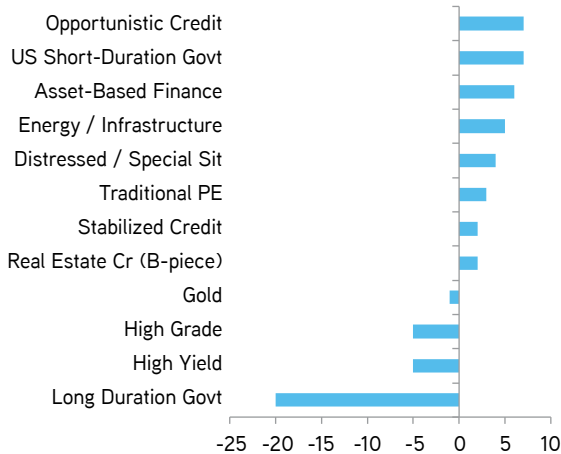
As we show in *Exhibit 4*, we are confident in our sizeable asset allocation bets that support our aforementioned macro views. In particular, we continue to run with hefty overweight positions in Asset Based Lending, Actively Managed Opportunistic Credit, and Real Assets. At the same time, though, we are underweight long duration government bonds.

However, we want to be clear: our call is not to forgo owning any government bonds. Rather, we are advocating more of a barbell approach that includes shorter duration U.S. government bonds and longer duration Real Assets. Several inputs weigh on our minds. First, as we show in *Exhibit 5*, our forward estimate between Cash and Fixed Income (i.e., U.S. Treasuries) is not that wide given the duration risk and low yield now embedded in 10-year U.S. Treasuries. Second, as we have worked with our clients, we are increasingly finding ways to use a variety of Real Assets as a diversifier to de-risk some of the volatility inherent in other parts of their portfolios, including Public and Private Equity. One can see this in *Exhibit 7*.

EXHIBIT 4

Our Asset Allocation Favors Real Assets Linked to Nominal GDP, Flexible Mandates, and Short-Term Government Bonds

Key Target Asset Allocation Over/Under Weights, %



Data as at February 28, 2019. Source: KKR Global Macro & Asset Allocation analysis.

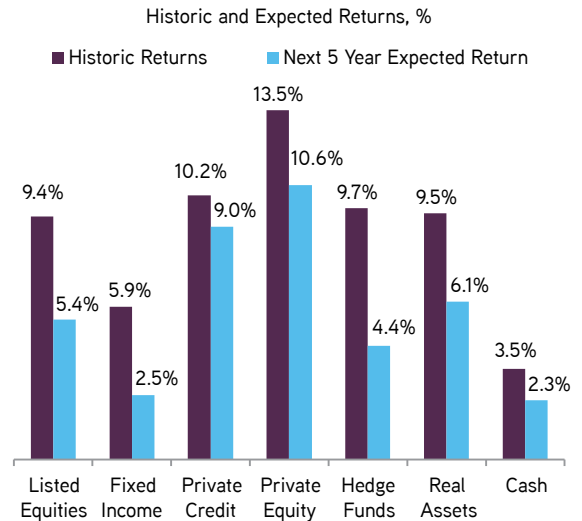
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EXHIBIT 5

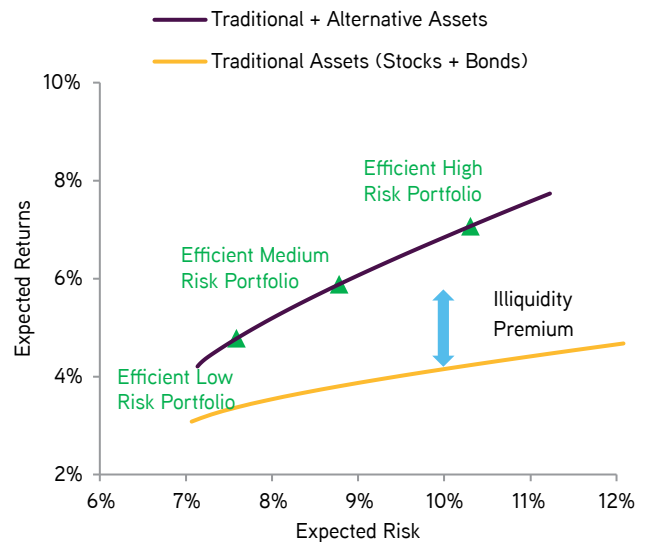
With Expected Returns for Cash and Fixed Income Only Separated by Twenty Basis Points, Long Duration U.S. Bonds Are Now Less Appealing to Us



Note: Historic data from 1Q86 to 3Q18 where available and de-emphasizing 2008 and 2009 returns at one third the weight due to the extreme volatility and range of performance. Proxies include MSCI AC World Gross USD; Barclays GlobalAgg Total Return Index Unhedged USD; Cambridge Associates Global Private Equity; HFRI Fund Weighted Composite Index; and Barclays GlobalAgg Total Return Index Unhedged USD. Expected returns as outlined in the KKR *Outlook for 2019: The Game Has Changed*.

EXHIBIT 6

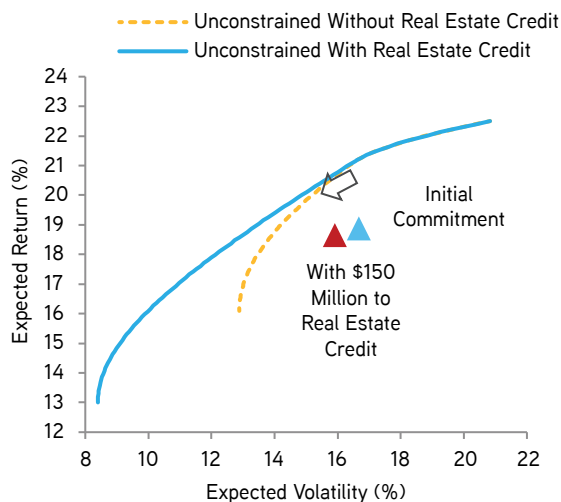
In Today's Low Rate, Low Return Environment, the Need for Alternatives to Deliver on Their Illiquidity Premium Has Become Even More Important



Note: Expected volatility and correlations from KKR proprietary estimates which take into account future macroeconomic expectations and adjustments for true risks in private asset classes. Data as at January 2019. Source: Expected returns from KKR *Outlook for 2019: The Game Has Changed*.

EXHIBIT 7

We Are Increasingly Finding Ways to Use Alternatives, Particularly Private Credit-Related Instruments, to Reduce Volatility and Enhance Yield



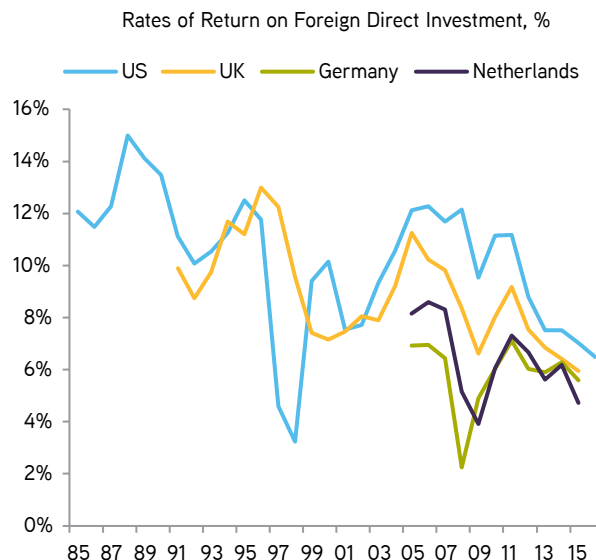
Data as at December 31, 2018. Source: Bloomberg, MSCI, Russell, BAML, KKR.

To be sure, we do acknowledge that there are risks to our allocation strategy. Most obvious is that global interest rates do not stay low at all, as central bankers stoke inflation by holding nominal interest rates below nominal GDP for too long. This outcome certainly could unfold, particularly if the dollar weakens substantially; however, given the secular forces we see at work, a high interest rate, high inflation environment is definitely not our base case. In the U.S., for example, the Federal Reserve has missed its inflation target for 95% of the time during the last 10 years – despite several huge fiscal stimulus programs along the way. Meanwhile, in Europe, the ECB recently decided to renew its long-term refinancing operation (LTRO) program, which likely extends low rates in the region through at least 2021. Finally, in Japan, the central bank continues to miss its inflation targets, despite rates at essentially zero far out on the curve.

On the other hand, we could be wrong if the U.S. were to “catch-down” with its global peers. In this case, it would not make sense to investors to pay up for the illiquidity premium that we are championing across Real Estate and Infrastructure. Rather, an investor should just buy long duration, liquid U.S. government bonds. However, we see three important offsets to this strategy. First, long-term yields in the U.S. are already at or below short-term rates in many instances, so there is also good convexity at the short end (where we already have a seven percent position). Second, we firmly believe that, given rising deficits and heavier debt loads as well as nominal rates below nominal GDP in most major economies, some collateral linked to nominal GDP is warranted at this point in the cycle. Third, from our perch, we continue to see lots of interesting opportunities in the private markets that we believe more than justify the illiquidity premium many investors are already counting.

EXHIBIT 8

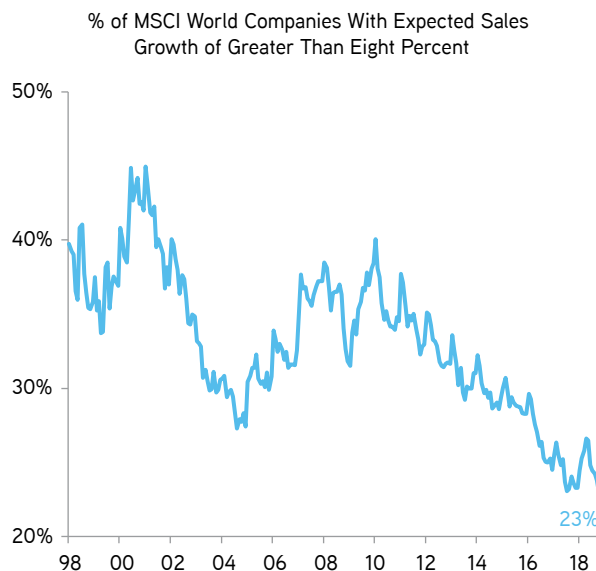
Rates of Return for Foreign Direct Investment (FDI) Are Declining in Many Areas of the Global Economy; We Think That This Trend Is Bullish for Our De-Conglomeratization Thesis



Data as at January 2017. Source: National Statistics, OECD, Haver Analytics.

EXHIBIT 9

Few Companies Generate Top-Line Growth These Days; As Such, We Think That Some Secular Growth Is Required in One’s Portfolio



Data as at December 31, 2018. Source Bloomberg, S&P.

Looking at the big picture, we continue to pursue the following key-macro themes across all of our portfolios. First, we remain structurally bullish on our deconglomeratization thesis. As we show in *Exhibit 8*, overall returns for many multinationals with global footprints are structurally falling. Second, we continue to want to maintain reasonable exposure to secular growth stories. In a low nominal GDP return environment, the value of cash flows that can grow materially more than their peers becomes more important, we believe (*Exhibit 9*). Third, as we detail in this Insights piece, we are structurally bullish on the *'Yearn for Yield'* by both individual and institutional investors. Without question, we continue to see reinvestment risk as one of the greatest concerns that pensions, insurers, and individual investors now face. The key, we believe, is accessing the right investment vehicles that have the potential to outperform in today's new world order of low rates and high deficits.

Section I: Thinking Through the Trajectory of Interest Rates

After recent trips to both Japan and Europe, many of us on the KKR GBR team definitely feel like we have been to the leading global epicenters of low rates. In Europe, the ECB has made it clear through both its recent initiatives and commentary that it wants rates to stay low through at least 2021. Consistent with this view, my colleague Aidan Corcoran recently smoothed the slope of his ECB withdrawal path, which one can see in *Exhibit 10*. As the chart shows, we have moved from a "black diamond" type descent towards something more akin to a "blue" or intermediate slope. Importantly, as shown in *Exhibit 11*, U.S. rates have not traded on a sustained basis more than 250 basis points above German 10-year rates for the past three decades. We think this relationship now narrows slightly with U.S. yields moving lower, rather than German rates moving higher.

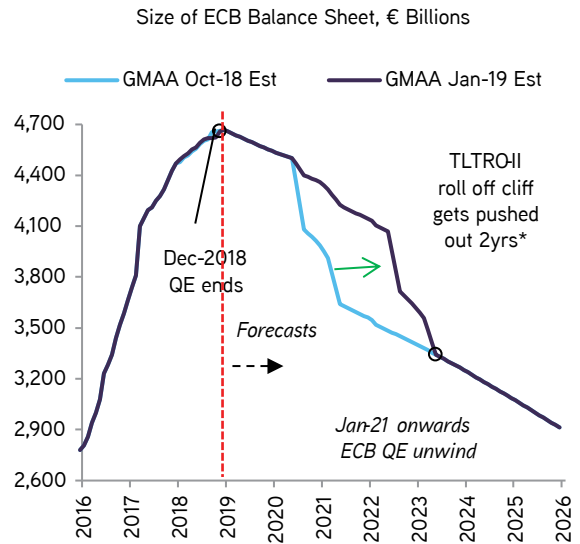
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To be sure, we do acknowledge that there are risks to our allocation strategy. Most obvious is that global interest rates do not stay low at all, as central bankers stoke inflation by holding nominal interest rates below nominal GDP for too long.

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EXHIBIT 10

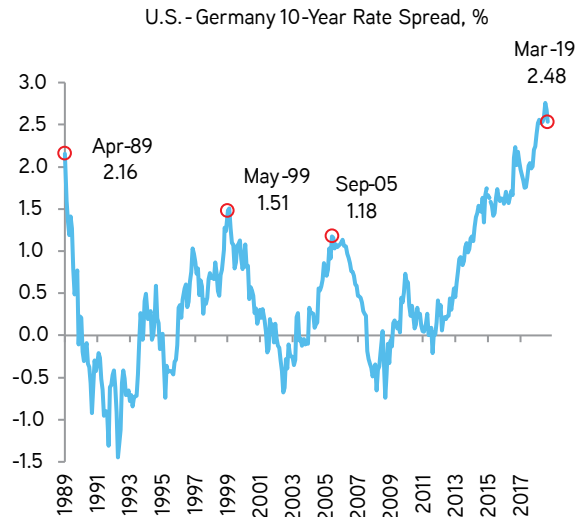
We Think the ECB's Recent Actions Will Make Quantitative Tightening (QT) Less of a Headwind to Global Financial Conditions



* Our October 2018 estimate assumes TLTRO rolls off according to scheduled repayment dates (in June 2020, September 2020, December 2020 and March 2021). Our January 2019 estimate assumes that 80% of TLTRO is extended for two years (before rolling off completely by early 2023.) Source: KKR Global Macro & Asset Allocation analysis, European Central Bank.

EXHIBIT 11

With 10-Year German Bonds Yielding Zero, We Think That U.S. Rates Can't Go But So High



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

Meanwhile, in Japan, we did not hear anything from our contacts that would suggest that there is any meaningful monetary tightening on the horizon. In fact, Governor Kuroda may yet consider further easing strategies at the long end of the interest rate curve, given the BoJ has still been unable to achieve its two percent inflation target. Moreover, the Japanese economy is soon entering an economically sensitive time, with the second consumption tax expected to go into effect on October 1 of this year. Against this backdrop, there is clearly heightened sensitivity towards any domestic policy that could cause sharp appreciation of the yen just ahead of what almost inevitably will lead to some form of a consumption “hiccup” in the not too distant future (i.e., even if implementation gets pushed to 2020).

Beyond a strong technical backdrop from the central banks, there are several factors to consider, we believe. First, we think that there are demographic and socioeconomic influences that are leading to lower rates. We note a strong “*Yearn for Yield*” evident among U.S. consumers, who continue to sock away savings at a heady rate relative to the current advanced state of the economic cycle. We can quantify this trend in several of the emerging markets where we invest, but our data in the U.S. is fairly compelling. One can see this in *Exhibit 12*.

For our nickel, we think multiple long-tailed factors are driving the high U.S. savings rate, including lingering consumer caution in the post-GFC era and the structural savings needs of an aging society (*Exhibit 13*). Indeed, our research shows that the savings rate for individuals aged 55 years and older is now a chunky 13%, which is significant given that this demographic controls much of the current wealth in the United States. There also has been a sizeable uptick in global reserves, which one can see in *Exhibit 14*. These increases are important because central banks are looking for safe homes for their assets, particularly if they feel comfortable with the local currency.

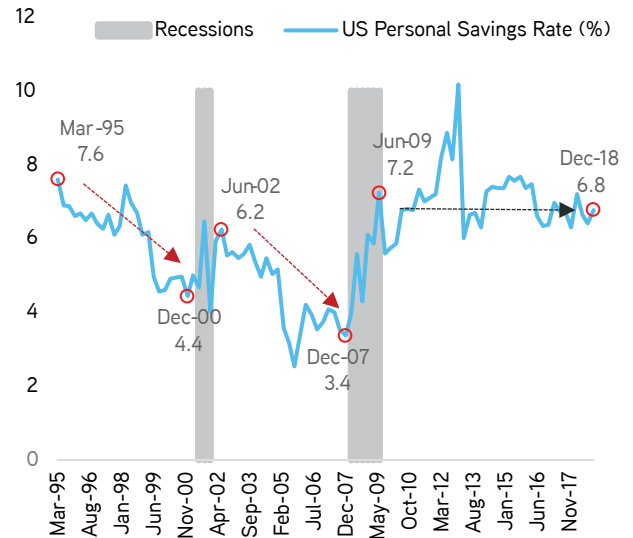
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EXHIBIT 12

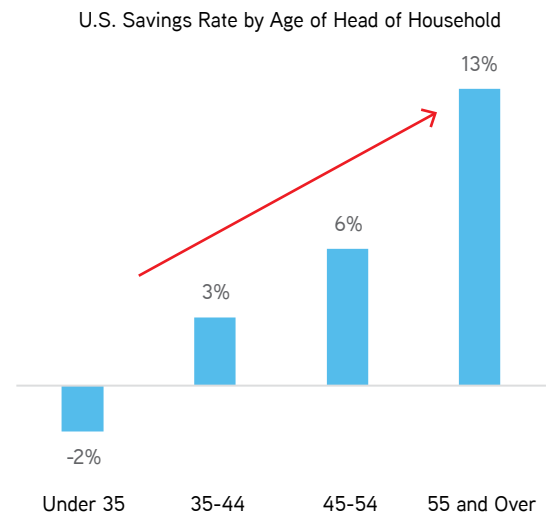
In an Unusual Break from Recent History, Savings Rates Have Not Declined This Cycle in the U.S.



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

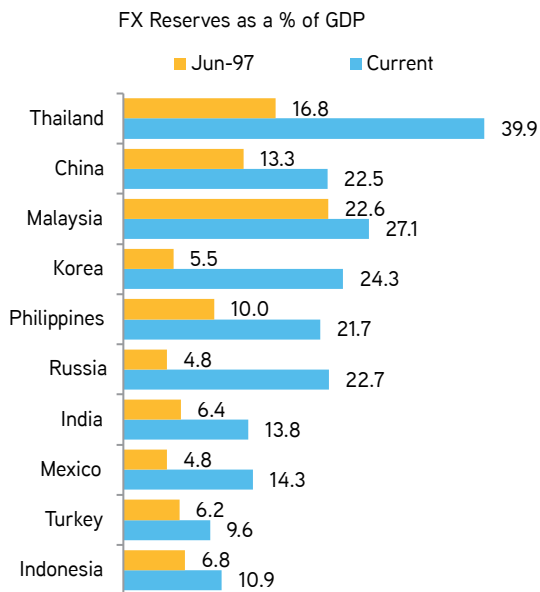
EXHIBIT 13

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.

The War Chest of Foreign Currency Reserves Is Now Quite High



Data as at January 31, 2019. Source: Respective national statistical agencies, Haver Analytics.

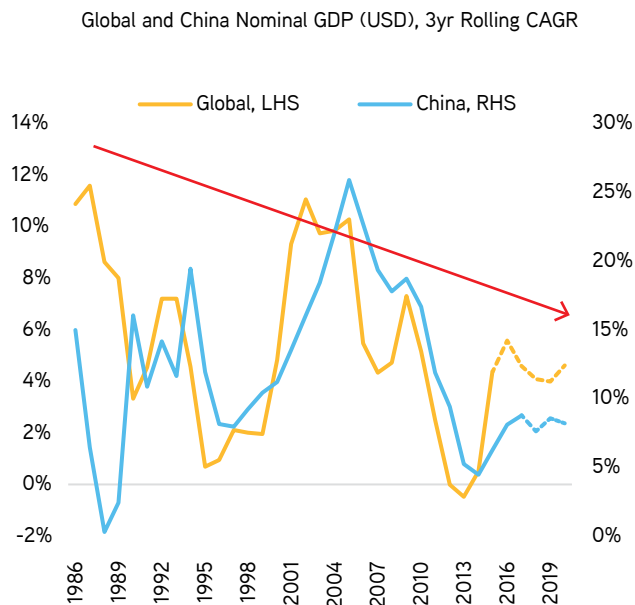
Second, we think that we have entered a period of structurally slower growth in the global nominal GDP, which theoretically means lower nominal interest rates. Key to our thesis is that, as we show in *Exhibit 15*, China – which accounts for over one-third of global GDP growth – has endured a 50-75% decline in its nominal GDP growth rate since the government shifted its business model towards more domestic consumption amidst structurally slower money supply growth. One can see these trends in both *Exhibits 16* and *17*, respectively.

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Key to our thesis is that China – which accounts for over one third of global GDP growth – has endured a 50-75% decline in its nominal GDP growth rate since the government shifted its business model more towards domestic consumption amidst structurally slower money supply growth.

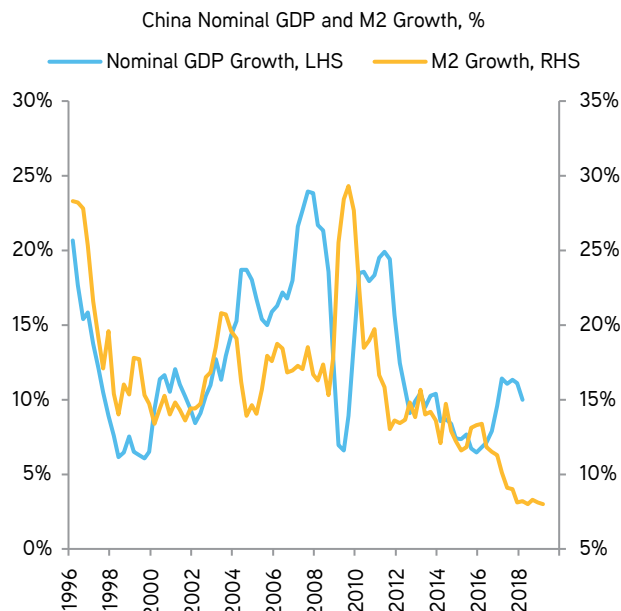
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Slower Nominal Growth in China Is Now Weighing Heavily On Global Growth



Data as at February 28, 2019. Source: China National Bureau of Statistics, IMFWEO, Haver Analytics.

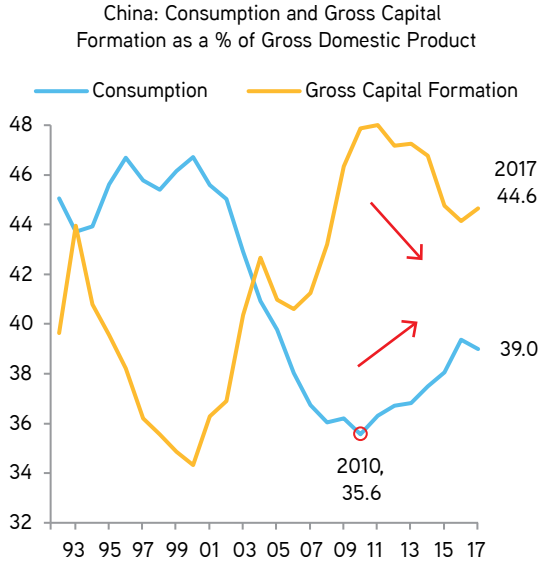
Tightening Liquidity Is Placing Downward Pressure on Nominal GDP in China



Data as at March 31, 2019. Source: China National Bureau of Statistics, Haver Analytics.

EXHIBIT 17

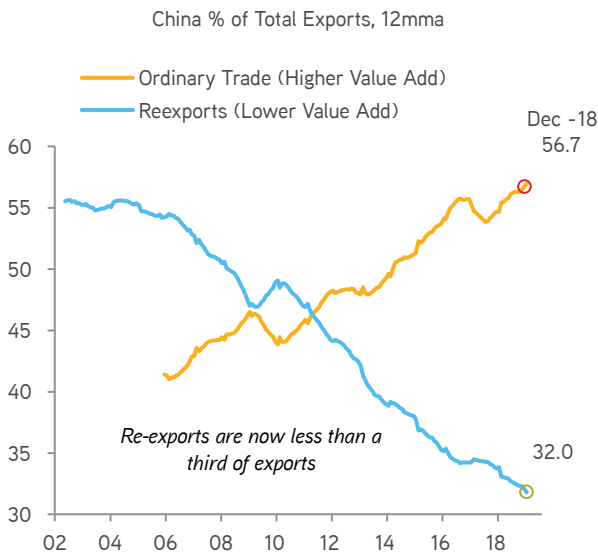
China's Consumption Economy Is Getting Bigger, While Its Fixed Asset Investment Is Poised to Slow



Data as at December 31, 2017. Source: China National Bureau of Statistics, Haver Analytics.

EXHIBIT 18

Within Trade, the Focus Is Clearly Towards the Higher Value-Added Parts of the Global Food Chain

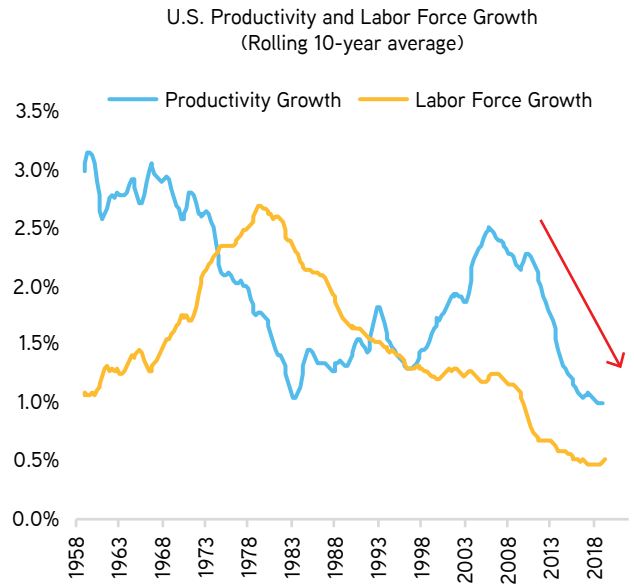


Data as at December 31, 2018. Source: China National Bureau of Statistics, Haver Analytics.

The U.S. has not been immune to the global growth slowdown. Indeed, as we show in *Exhibit 19*, both slower labor force growth and productivity have led to declines in both the United States GDP growth rate and the level of its interest rates. This downshift in inputs has been significant for the overall level of interest rates, as one can see in *Exhibit 20*.

EXHIBIT 19

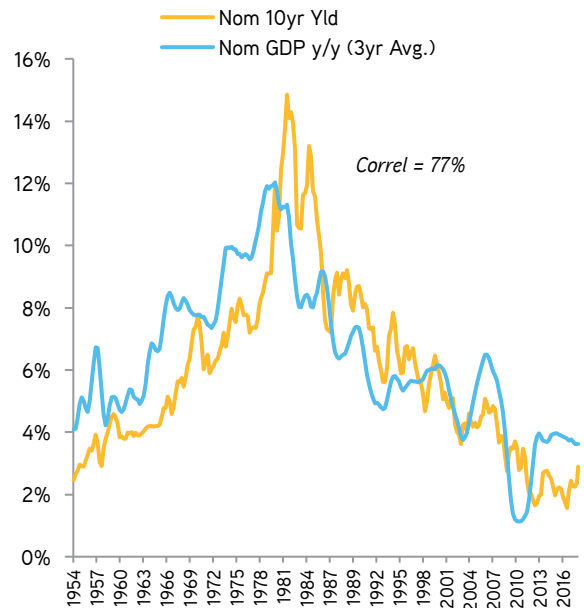
The Downshift in Labor Force Growth and Productivity Has Been Significant for the Overall Level of Interest Rates



Data as at December 31, 2018. Source: Bloomberg.

EXHIBIT 20

Rates Are Highly Correlated With Nominal GDP Growth



Data as at December 31, 2018. Source: Bloomberg.

Finally, technological improvements have put downward pressures on many key parts of the global economy. As a result, we have seen both greater pricing transparency and lower input costs in many instances. Without question, we think that Moore's Law has allowed for the diffusion of ever more powerful and cheaper technologies. As technology continues to improve (faster and more powerful computers, lighter and bigger televisions, more productive smart-phone apps, and so on), the relative price of technology continues to decline. Building off of a report by Joseph Davies, Chief Economist at Vanguard, we note that the lower prices for business and consumer technology products have produced an average estimated drag of forty basis points per year in the official Consumer Price Index (CPI)¹.

Moore's Law is certainly about more than mobile apps, video games, and hand-held devices. However, as technology is used more prominently to produce more goods and services, many of the companies in which our clients invest are now enjoying lower production costs. This observation is significant, as the prices charged by our portfolio companies are just markups over marginal production costs, and as such, the continued adoption of new technologies generally translates into reduced unit costs of production.

Over time, these benefits make their way to consumers in the form of lower, or less rapidly increasing, final prices, even in sectors not directly related to technology. As we show in *Exhibit 22*, Moore's Law in technology has had a profound effect on the prices that U.S. businesses need to charge and still make a decent profit. All told, since 2005, for example, the declining prices of computer and electronic products, computer design and services, and other technology inputs have trimmed 83 basis points from overall production costs and ultimately from final prices in some instances. Interestingly, as *Exhibit 21* shows, the impact of technology on inflation is typically more pronounced in early years; thereafter, the impact becomes more moderate as the technology costs decrease.

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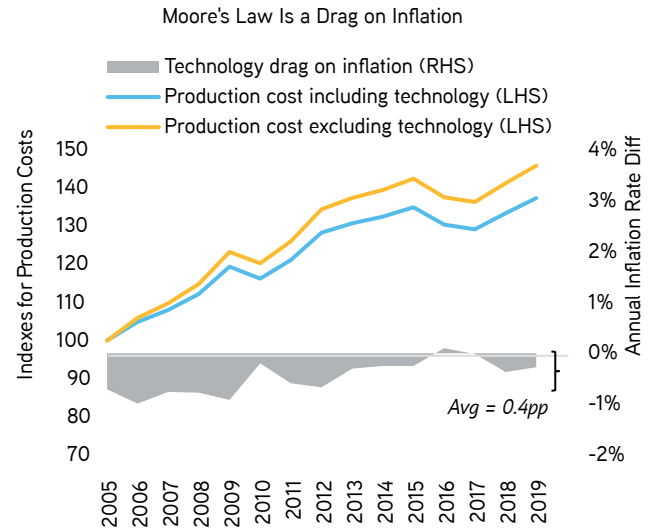
But Moore's Law is certainly about more than mobile apps, video games, and hand-held devices. As technology is used more prominently to produce more goods and services, many of the companies in which our clients invest are now enjoying lower production costs.

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¹ Data as at 2017. Source: Vanguard *Why Is Inflation So Low?*

EXHIBIT 21

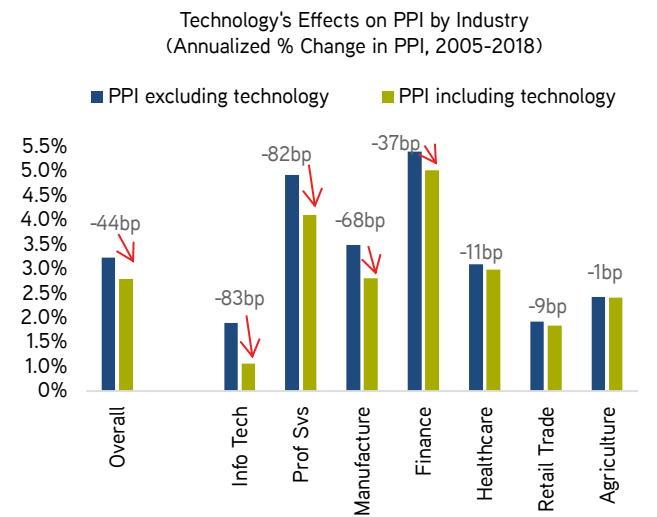
Moore's Law Is a Drag on Inflation, Particularly in the Early Years of Innovation



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 22

Technology's Downward Impact on Input Prices Has Been Pervasive Across Almost All Industries in Recent Years



Note: Healthcare is proxied by hospitals, retail trade by general merchandise trade, finance by securities/investment. Data as at 2005 through 2018. Source: Haver Analytics, BEA input-output tables, Vanguard, KKR Global Macro & Asset Allocation analysis.

Importantly, though, this phenomenon of lower consumer prices is not linked only to technology. Just consider Walgreen's recent announcement of lower earnings, which were driven primarily by cheaper generic drug prices. Or Amazon's recent decision to cut prices at Whole Foods, the grocery store distributor it acquired in June 2017, in some major food categories by 20-50%. Without question, these types of pricing pressures will force the hand of its competitors as well as set the stage for similar top behavior patterns in other verticals of the global economy.

So, our bottom line is that, when we consider all the various forces at work, including strong technical flows, slowing nominal GDP growth, and technological innovation, we have a hard time forecasting significantly higher long-term interest rates. To be sure, with real rates having already compressed significantly in recent weeks, we are not arguing for rates to go much lower. However, our basic message is the 'Yearn for Yield' will continue, as almost all savers, including insurance companies, individuals, and pensions, will be hard pressed to find the levels of income that they need to cover their liabilities through the ownership of long-term, traditional sovereign debt instruments.

Section II: Investment Considerations in a Low Rate World with Increasing Volatility and Bigger Deficits

Given our strong view that 1) interest rates will stay low across the United States, Europe, and Japan during the next few years; and 2) more volatility across the global capital markets is likely, we believe strongly that macro investors and asset allocators should incorporate the following strategies into their asset allocation. They are as follows:

#1: Buy Shorter Duration U.S. Treasuries and Private Assets With Yield and Collateral. Despite the additional convexity an investor can enjoy by extending duration, we still think that now is the time to be shortening duration in many areas of one's portfolio. Core to our view is that the United States government is running record deficits at a time of record low unemployment. As *Exhibit 23* shows, this policy is highly unusual as it breaks with any historical pattern that we can find in our macro data sets going back to the 1900s.

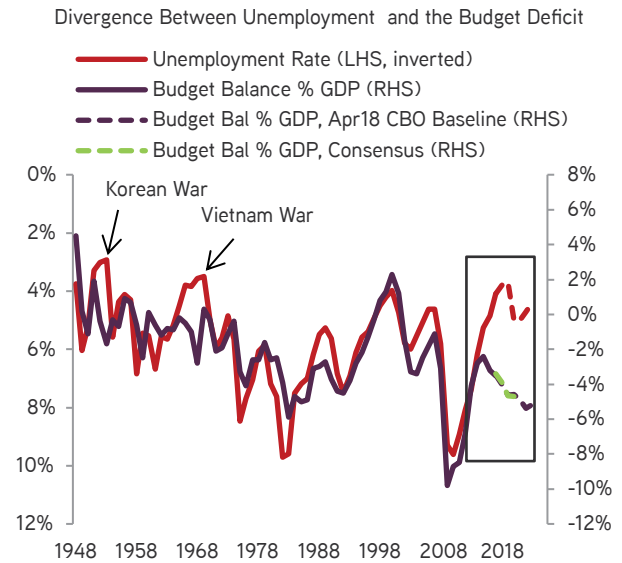
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Without question, we think that Moore's Law has allowed for the diffusion of ever more powerful and cheaper technologies.

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EXHIBIT 23

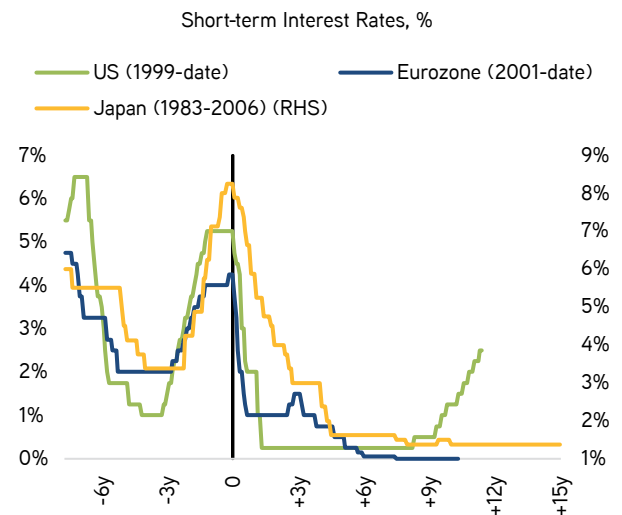
The Combination of Tax Cuts and Budget Deal Is Now Driving a Record Divergence Between the U.S. Budget Balance and the U.S. Unemployment Rate



Data as at December 31, 2018. Source: Department of Labor, Department of Commerce, CBO, Goldman Sachs.

EXHIBIT 24

We Think That Short-Term U.S. Rates Represent Good Value, Particularly Relative to the Other Parts of the Developed Markets



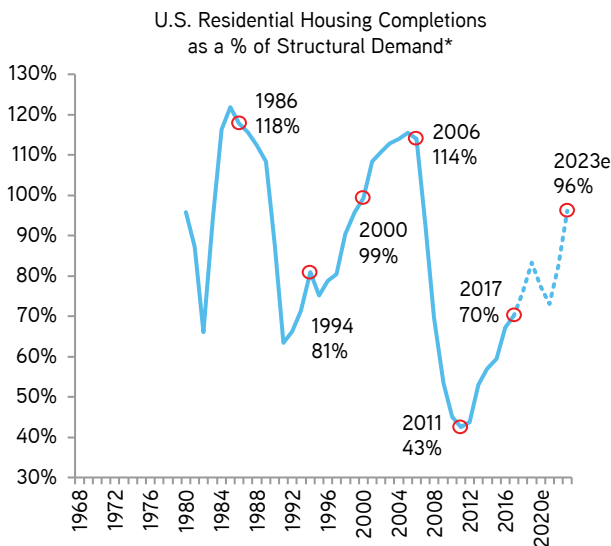
Note: 0 on x-axis = peak in short-term rates; Short Term Prime Lending Rates used as proxy for Japan; ECB Main Refinancing Rate for Eurozone; Fed Funds Rate for U.S. Data as at February 11, 2019. Source: Bloomberg.

At the moment, we really like short-duration U.S. sovereign securities like two-year Treasuries. Besides yielding more than most longer-duration sovereign debt, we like the added convexity if the Federal Reserve is forced to ease as President Trump's stimulus package loses its punch.

On the private side, we think that there are several interesting areas from which to choose in the shorter duration segment of the Private Credit markets. For example, given our bullish view on household formation and housing (*Exhibits 25 and 26*), we favor short-term residential lending in both Europe and the United States. We also like owning cash flows linked to hard assets such as locomotives, storage assets, and short-term housing loans. Finally, we are also still finding good value in structured products, including orphaned closed-end funds. While the duration of closed-end funds can be slightly longer than some of our aforementioned suggestions in this section, their daily liquidity function provides us with a high additional degree of comfort as part of a diversified, shorter duration strategy in Fixed Income.

EXHIBIT 25

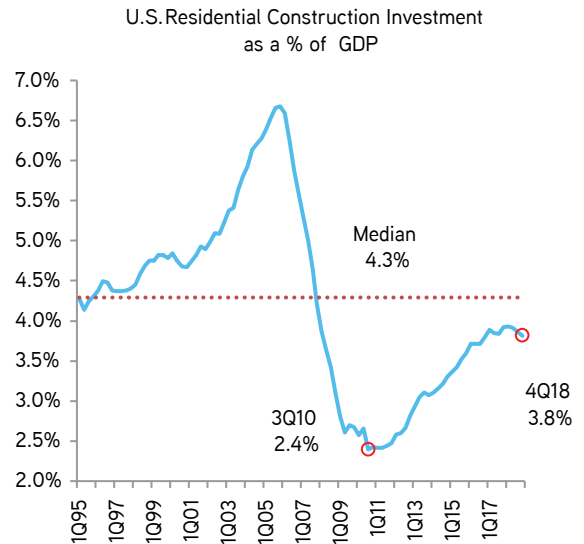
Household Formations Has Been Lagging Structural Demand Since 2006; We Now See More Gains Ahead



e = KKR GMAA estimates. Data as at November 30, 2018. Source: U.S. Census Bureau, Haver, KKR Global Macro & Asset Allocation analysis.

EXHIBIT 26

Residential Investment as a Percentage of GDP Is Well Below Long-Term Norms, and as Such, We Think That the Cycle Can Continue for Some Time



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

#2: Embrace Credit Mandates With More Flexibility. As we discussed in our Outlook for 2019, as well as earlier in this piece, we believe that the liquidity cycle has turned. It may not get highly restrictive relative to past cycles, but real rates are higher amidst central bank balance sheet retrenchment. As a result, we generally expect financial conditions to continue to tighten. If they don't, then it is likely because growth is slower than expected – which is not great either. Said differently, it feels like the capital markets might be “stuck” in the medium-term. If growth is too strong, financial conditions will continue to tighten. If growth is too weak, it means that margins and trade negotiations are under pressure.

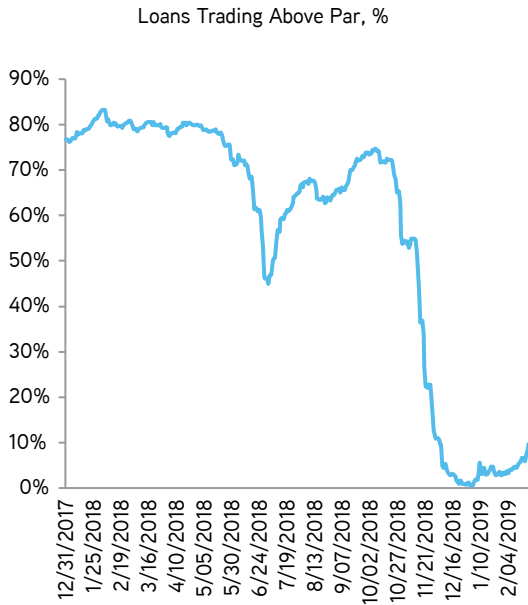
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So, our bottom line is that, when we consider all the various forces at work, including strong technical flows, slowing nominal GDP growth, and technological innovation, we have a hard time forecasting significantly higher long-term interest rates.

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EXHIBIT 27

Periodic Dislocations Like 4Q18 Mean That Investors Need to be More Nimble Than in the Past

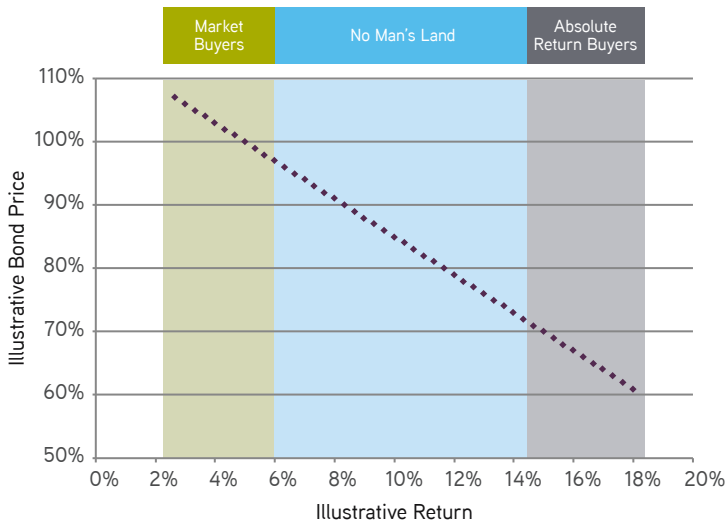


Data as at February 28, 2019. Source: LSTA.

EXHIBIT 28

When Markets Dislocate, We Think There Are a Lot of Securities Available for Sale in What We Call 'No Man's Land'

Value in 'No Man's Land' by Providing Liquidity Where Others May Not Go

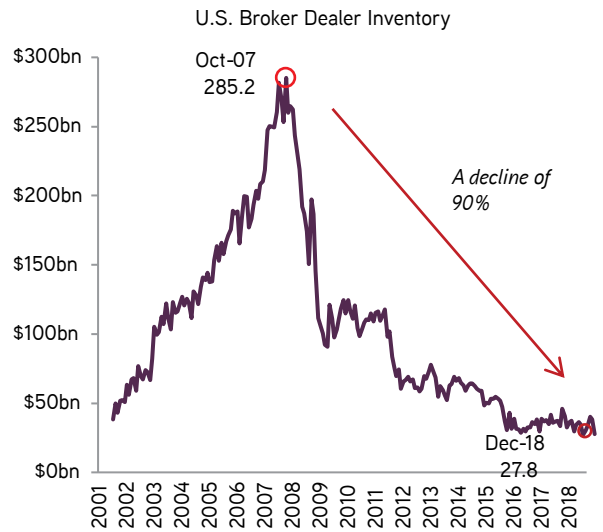


Data as at December 31, 2018. Source: KKR Credit.

Equally as important, the structure of the global capital markets has changed. For example, on the debt side of the house, the stock outstanding has exploded at the same time that the dealer inventory required in the United States to support this vast amount of growth has shrunk. Without question, these technical mismatches are creating periodic distortions that accrue mightily to investors with patient capital, solid underwriting skills, and – perhaps most importantly – the ability to toggle across asset classes and securities.

EXHIBIT 29

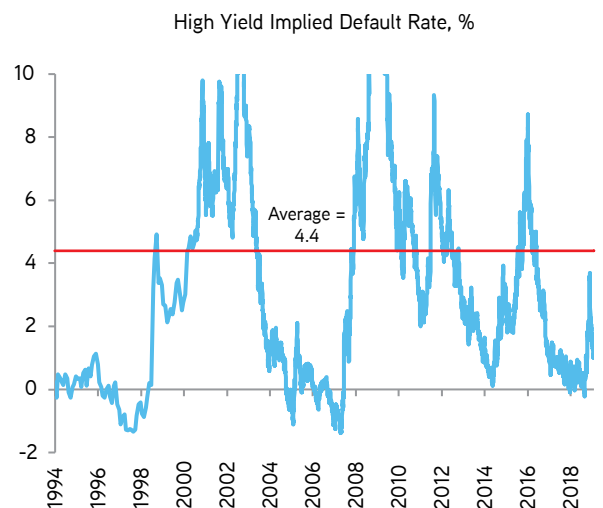
Credit Trading Strategies Are No Longer Well Supported by Wall Street. As Such, the Potential for Periodic Dislocations Is Now Structurally Higher, We Believe



Data as at December 31, 2018. Source: Federal Reserve Bank of NY, Haver Analytics.

EXHIBIT 30

Implied Default Rates Have Spiked Periodically in Recent Years, Even When There Has Not Been an Actual Recession



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

Given this uneven technical backdrop amidst rising geopolitical tensions, we are increasingly bullish on our theme of capital market arbitrages across both Liquid and Private Credit. Indeed, if there is one thing that became apparent during the fourth quarter of 2018, it was the inconsistencies in value that appeared across capital structures and asset classes. For example, Liquid Credit sold off much more than some of the opportunities we saw in Private Credit, and as such, a significant capital structure arbitrage/opportunity emerged that favored flexible capital that could step in and buy into potentially “hung” new issue paper as well as unloved trading positions in certain structured products. While many of these dislocated opportunities have been corrected in 2019, we do not think that the last quarter of 2018 was a “one off” situation, particularly if we are right about slowing growth amidst peaking corporate margins. Moreover, despite the recent rally, we are still seeing some “good company, bad capital structure” opportunities emerge, especially outside of the U.S. So, consistent with this overall macro backdrop, we now hold a large overweight to Actively Managed Opportunistic Credit, and we have again increased our position in Special Situations/Distressed this year.

#3: Buy Longer Duration Real Assets Linked to Nominal GDP With Collateral, Including Infrastructure. As we mentioned above, we remain bullish on our *‘Yearn for Yield’* thesis, which we originally laid out for investors at Morgan Stanley and then again when we joined KKR in 2011 (See December 2011; *Brave New World: The Yearning for Yield Across Asset Classes*). However, there is a new twist to the plot, we believe. Specifically, given our high conviction view that governments are committed to driving higher nominal GDP at a time of low nominal interest rates (which has traditionally been the cure for deflation/disinflation), we want to continue to increase our allocation to yielding assets backed by nominal GDP. This call is a big one, we believe; we think it has legs in terms of duration, and we believe it warrants a notable overweight position from an asset allocation perspective.

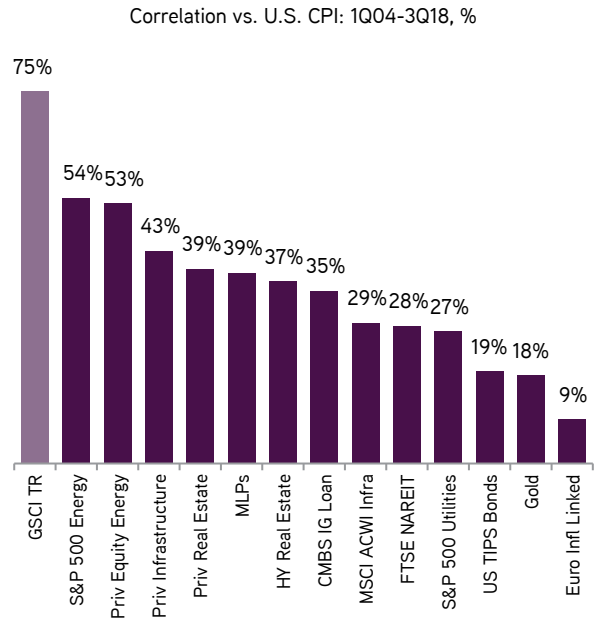
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This baton hand-off from central bankers to politicians represents a major change, as today’s politicians look for innovative ways to provide economic relief to a growing number of discontented voters, many of whom have not seen their wages increase until quite recently.

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EXHIBIT 31

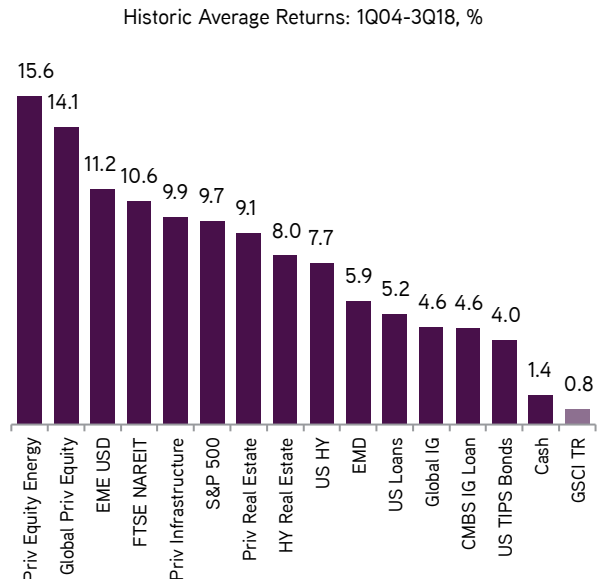
While the S&P GSCI Total Return Index Has the Highest Correlation With U.S. CPI...



Data as at 1Q04-3Q18 as Cambridge Associates Infrastructure returns start in 1Q04 and latest available is 3Q18. Source: Cambridge Associates, Bloomberg, MSCI.

EXHIBIT 32

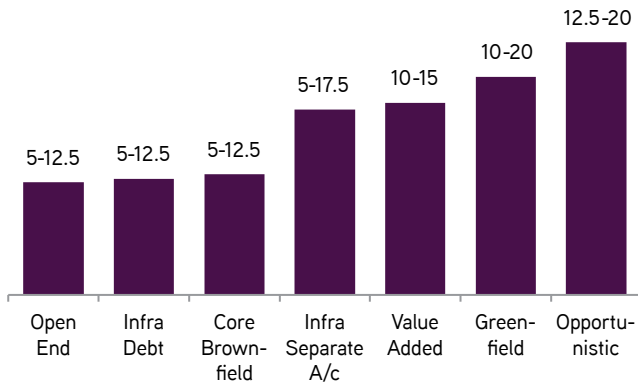
...It Has One of the Lowest Return Track Records. As Such, We Heavily Favor More Non-Traditional Real Assets



Data as at 1Q04-3Q18 as Cambridge Associates Infrastructure returns start in 1Q04 and latest available is 3Q18. Source: Cambridge Associates, Bloomberg, MSCI.

We Think That There Are Multiple Ways to Own Infrastructure in One's Portfolio

Infrastructure Investments by Type: Weighted Average Net IRR, %



Data as at 2017. Source: Probitas Partners' Infrastructure Institutional Investor Trends for 2017 Survey.

This baton hand-off from central bankers to politicians represents a major change, as today's politicians look for innovative ways to provide economic relief to a growing number of discontented voters, many of whom have not seen their wages increase until quite recently. It also reflects a decision by governments to control more of their own economic destiny via a more nationalistic approach versus being too reliant on global connectivity to succeed. In our view, this new reality is likely to periodically unsettle the global capital markets for some time. So, in this environment, our bottom line is that the investment "playbook" feels all but certain: capture upfront yield, own more hard assets, shorten duration, lock in low cost liabilities, and avoid countries with large current account deficits.

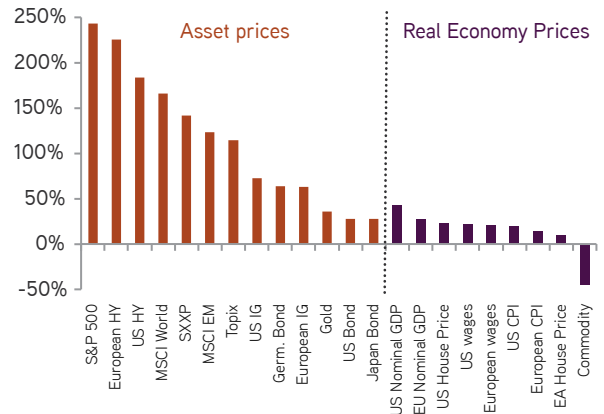
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Though not as well known as traditional illiquid investments like Direct Lending or Distressed Credit, we think the B-piece segment of the CMBS market warrants investor attention.

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We Think That Governments Are Now Focused on Driving Better Returns in the Real Economy Relative to the Financial Economy

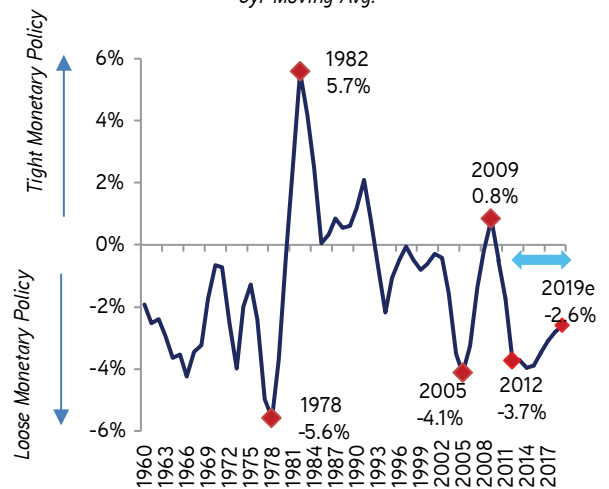
Financial and Real Economy Prices Total Return Performance in Local Currency Since January 2009, %



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

By Holding Nominal Interest Rates Below GDP, the U.S. Is Trying to Stoke Both Growth and Inflation

U.S. Fed Funds Rate, % Points Above/(Below) U.S. Nominal GDP Growth 3yr Moving Avg.

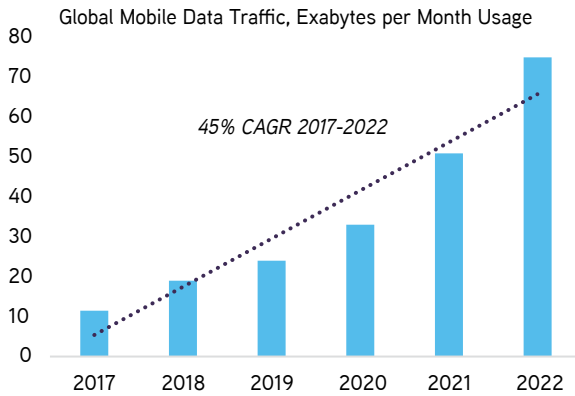


Data as at December 31, 2018. Source: Bloomberg, KKR Global Macro & Asset Allocation analysis.

In terms of specific ideas, we favor the following areas of opportunity with Real Assets. First, we have been impressed with the opportunities we have seen in “last-mile” optical fiber financing as well as in pipeline build-outs. In many instances investors can enjoy some significant cost of capital compression by taking final stage construction risk, or helping to spin assets out that are considered non-core. Similarly, within the energy arena, there are what appear to be “broken” MLP stories where the underlying mid-stream and processing assets appear to be trading cheaply relative to the overall enterprise. Finally, in regions like Asia, we are seeing several emerging public to private opportunities where infrastructure assets shuttled within large conglomerates are now finally being divested.

EXHIBIT 36

The Surge in Global Mobile Traffic Has Created an Almost Insatiable Demand for Fiber-Related Infrastructure



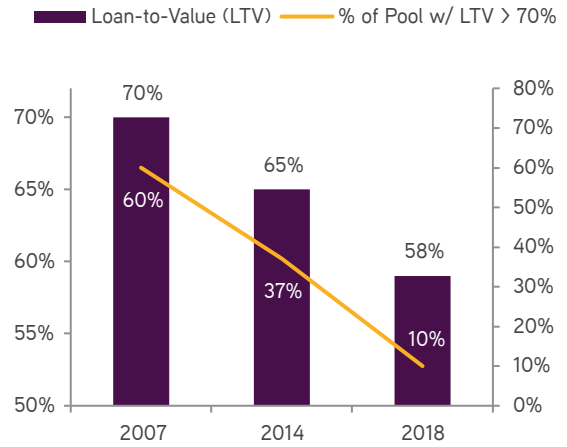
Note: 2019-2022 are estimates. Data as at March 1, 2019. Source: Cisco, Credit Suisse.

#4: *Own B-Piece Commercial Real Estate Credit as well as Cash Flowing Opportunistic Real Estate Equity.* Though not as well known as traditional illiquid investments like Direct Lending or Distressed Credit, we think the B-piece segment of the CMBS market warrants investor attention. Consistent with this view, we originally added CMBS B-piece to our asset allocation mix back in June 2018 based on a variety of factors that we uncovered. For starters, given our long-held view on structurally lower interest rates this cycle, we have admired the outsized yield that this asset class provides. All told, even with the latest dip in interest rates, we still expect an approximate 10% current return with the possibility of a total return of 11-13%.

Second, we like that CMBS is secured by senior, first mortgage loans on stabilized commercial properties. These properties have significant existing cash flow and cover their mortgage payments by over two times, on average, which provides a strong base for any downturn in the economic environment.

EXHIBIT 37

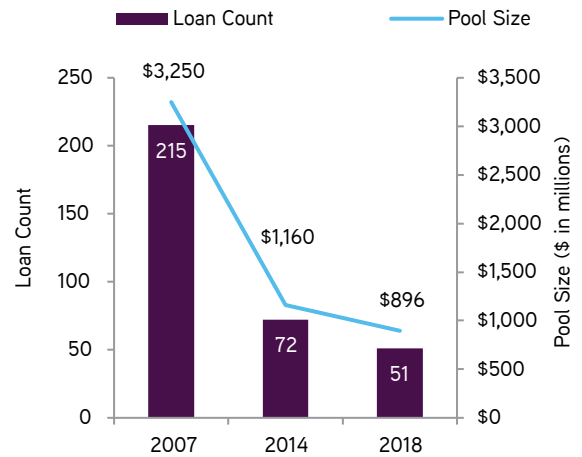
We Now See Lower Leverage in the B-Piece Market



Data as at January 31, 2019. Source: Commercial Real Estate Direct, Morgan Stanley.

EXHIBIT 38

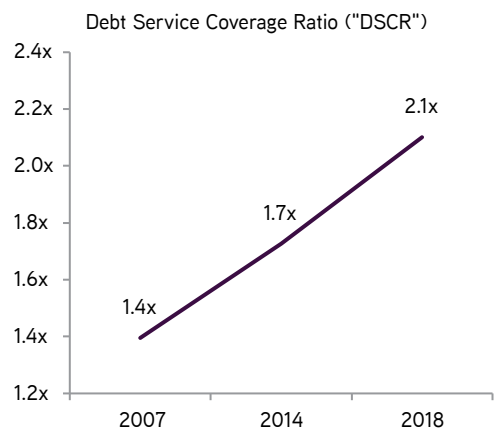
The Pool Size in the B-Piece Market Has Shrunk Meaningfully as Well



Data as at January 31, 2019. Source: Commercial Real Estate Direct, Morgan Stanley.

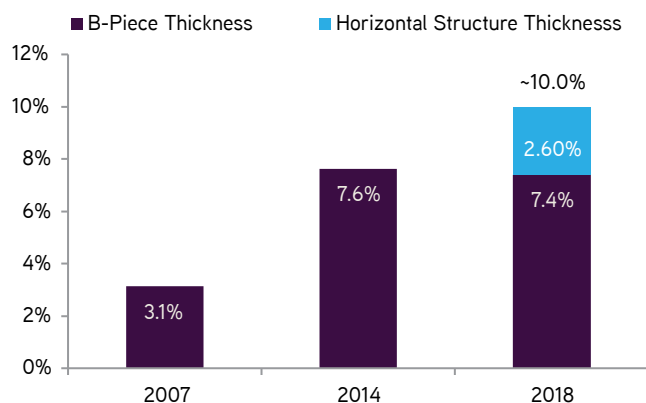
Third, unlike the CLO and Leverage Loan market where regulations are becoming more accommodative, *the risk retention laws that were enacted after the Global Financial Crisis remain fully intact.* This “skin in the game” requirement has positively impacted the investing environment. Without question, it has created a moat around the B-piece opportunity and limited participation to more fundamental, longer dated capital, which helps explain part of the outsized yield premium embedded in these securities. Moreover, as prescribed, it has created a more conservative lending environment leading to lower leverage and higher coverage mortgage loans. One can see the level of improvement in *Exhibits 39 and 40.* Fourth, given our thesis about owning collateral that is linked to nominal GDP, B-piece securities certainly check the box in this area given the exposure to a broad segment of the U.S. commercial property market.

Higher Coverage Ratios Are Helping Performance in the B-Segment of the CMBS Market



Data as at January 31, 2019. Source: Commercial Real Estate Direct, Morgan Stanley.

Thicker B-Piece Tranches Are Beneficial as Well



Data as at January 31, 2019. Source: Commercial Real Estate Direct, Morgan Stanley.

Finally, we like that this asset class initially starts at a substantial discount (approximately 40-50% of face value) which creates a more stable return profile and downside protection² in stress scenarios. The high current return combined with the discount decreases the chance of capital impairments as coupons are received.

Meanwhile, within Real Estate equity, we are bullish on several areas of the opportunistic and value-added parts of the market. First, we are structurally bullish on *opportunities in second tier innovation cities* regarding U.S. multifamily and logistics and distribution centers. In addition, with supply tightening up in the United States, we are constructive on senior living and healthcare facilities. Finally, we like the rising demand that we are seeing for affordable housing and for student housing in both developed and developing markets.

² Note that downside protection is no guarantee against future losses.

Section III: Conclusion

As we have detailed in this report, we think that rates are likely to remain lower for longer across many developed markets of the world. This viewpoint is significant because it likely means that macro investors and asset allocators may need to reposition their portfolio to minimize the mounting reinvestment risks we now see unfolding. Indeed, given the recent policy changes in Europe around its new LTRO program as well as the Fed's more modest balance sheet withdrawal program, we have high conviction that rates are likely to remain extremely low through the end of at least 2021 – and most likely well beyond this timeframe.

However, it is not business as usual when it comes to boosting yield in one's portfolio. Specifically, given the surge in government and corporate leverage that we are seeing, our message is certainly not for investors to just go out and massively extend their duration by buying a large swath of government bonds. Rather, we think some combination of yielding short-duration and long-duration assets, especially those tied to nominal GDP and collateralized with attractive cash flowing properties, is likely to be the winning formula in the macroeconomic environment we are envisioning. Rates are low for a reason: Global nominal GDP growth is not what it used to be.

”

Meanwhile, within Real Estate equity, we are bullish on several areas of the opportunistic and value-added parts of the market. First, we are structurally bullish on opportunities in second tier innovation cities regarding U.S. multifamily, logistics and distribution centers. In addition, with supply tightening up in the United States, we are constructive on senior living and healthcare facilities. Finally, we like the rising demand that we are seeing for affordable housing and student housing in both developed and developing markets.

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In terms of specific areas where to lean in with one's portfolio, our advice is as follows:

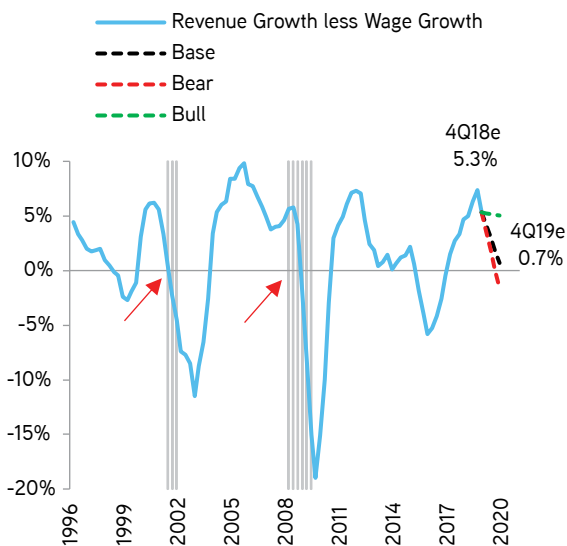
1. We still like the short-end of the U.S. Treasury curve. In fact, we think its current yield is mispriced relative to other sovereign debt we see in developed market economies.
2. We also favor shorter duration collateralized private investments, particularly in areas such as housing in Europe and the United States.
3. We also want to lean into Actively Managed Opportunistic Credit, given our view that we are entering a period of increasing periodic dislocations (e.g., 1Q16, 4Q18, etc.).
4. On the long-end of the curve, we are in favor of more illiquid investments relative to sovereign debt, particularly for those investors who are constrained by near-term obligations. Without question, the value of the illiquidity premium is worth more in a low interest environment. Infrastructure is most appealing to us, but we also like the B-piece segment of the CMBS market in the United States.

As we mentioned earlier, we do not see inflation as an immediate threat, but — to be prudent — we have altered our portfolio to create some inflation hedges. We have done so because we respect that the 'Authorities' are clearly holding nominal interest rates below nominal GDP for a reason. Specifically, this loose monetary policy is aimed at stoking a little inflation to boost both wages and defease heavy debt loads, though the impact of demographics, excess capacity, and technology are likely to make it less effective than in the past, we believe.

EXHIBIT 41

We Believe That Slowing Growth Amidst Higher Wages Will Become a Headwind to Margins in 2019

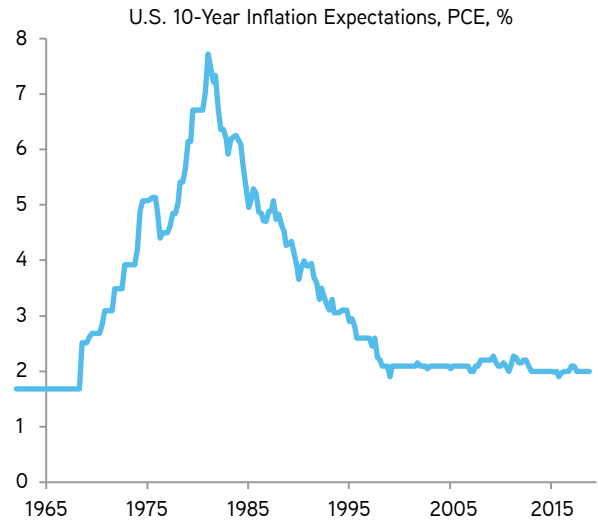
S&P 500 Revenue Less Wage Growth Scenario Analysis, %



Data as at December 31, 2018. Source: Bloomberg, Haver Analytics, KKR Global Macro & Asset Allocation analysis.

EXHIBIT 42

Inflation Remains Well Anchored as China, Demographics, and Technology Continue to Keep Downward Pressure on Input Costs



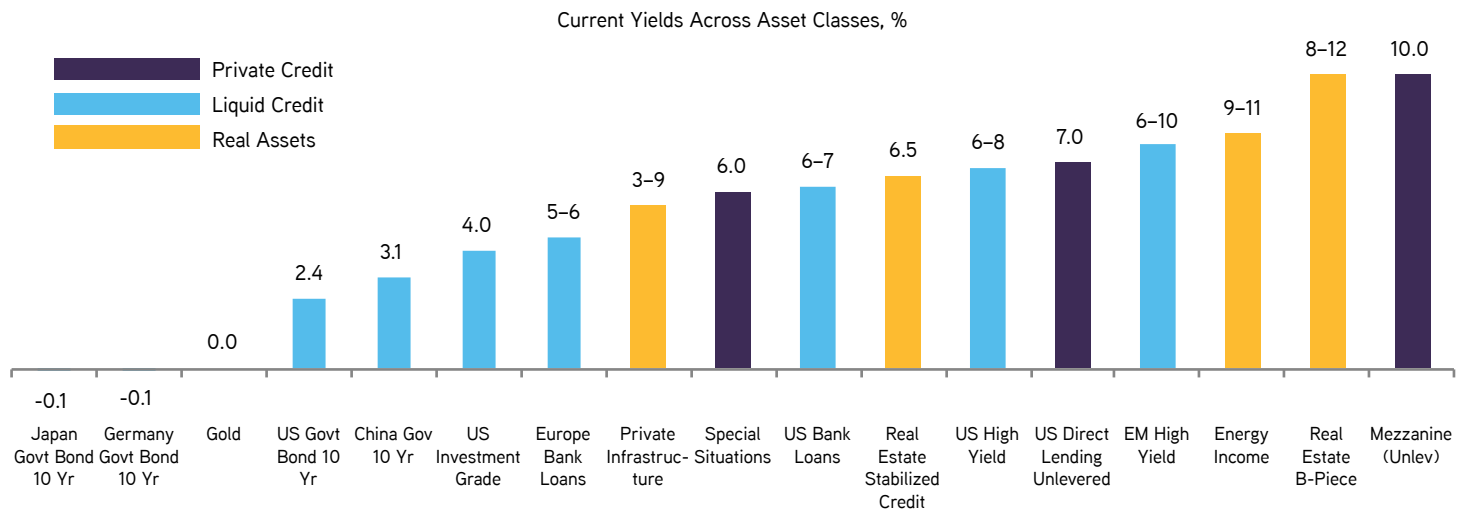
Data as at December 31, 2018. Source: Consensus Economics, Goldman Sachs Global Investment Research

"

However, it is not business as usual when it comes to boosting yield in one's portfolio. Specifically, given the surge in government and corporate leverage that we are seeing, our message is certainly not for investors to just go out and massively extend their duration by buying a large swath of government bonds.

"

The Cash Flow Component of the Asset Is the Key Driver of Total Return



Data as at March 31, 2019. Source: Bloomberg, KKR Global Macro & Asset Allocation analysis.

If we are wrong in our approach, it will likely be because rates are poised to move higher after global central banks have been too lax for too long. This outcome could occur, particularly if the dollar fell out of bed. However, given our aforementioned views around excess capacity, technological change, and demographics, we think a squeeze in corporate margins – more than a surge in inflation – is a more likely outcome (*Exhibit 42*) than a higher inflation, robust nominal GDP environment. Also, if inflation and rates do increase materially, we think that our overweight to Real Assets with yield should add some ballast to the portfolio.

So, our bottom line is that reinvestment risks are rising, and now is the time to reposition one's portfolio for the ongoing *'Yearn for Yield'* that we see unfolding across many different parts of the global capital markets. Importantly, though, given where we are in the cycle and where monetary and fiscal policies are directed, we think that owning more assets backed by nominal GDP and hard assets, versus just traditional fixed income products, makes sense in the macroeconomic environment we envision for the coming five to seven years.



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