

# The Way Forward

## 2019 Global Investment Outlook



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# The pivotal year ahead

Outlooks from our global investment managers hold a sense of anticipation on many fronts. Business innovation, shifting trade policies, and evolving economic trends across emerging markets are among the many forces driving market disruptions around the world. These changes can create equal measures of excitement and angst among investors able to see both opportunities and risk. As governments and businesses seek to adapt — to new technologies, to evolving business sentiments, to local economic and market cycles — there's a heightened sense about how rapidly our world is transforming.

This is especially acute in the United States, a recent-year performance leader among developed-world equity markets. While US economic growth remains strong, rising interest rates and protectionist policies, as well as a late equity-market cycle, contribute to a growing awareness about risk. Rising financial-market volatility both in the US and worldwide — as well as evolving and hard-to-predict forces like trade disputes and the trajectory of emerging markets — have entered into sharp focus.

In the pages that follow, global managers writing from 11 cities across four continents assemble a mosaic picture of The Way Forward — Macquarie's outward look to the year ahead. The specialist opinions of our boutique managers explore a broad opportunity set — from equities and fixed income to global alternatives and real assets.

These perspectives can often be contrarian to the consensus view, but are always thought provoking, and offer a sensibility that change does bring opportunity. We look forward to continuing your investment journey with Macquarie in 2019.



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# Perspectives

As forces ranging from rising rates to trade disputes have raised the stakes for global markets and investors, our investing leaders step back for big-picture views of what these may portend for equity, fixed income, and real assets and other alternative markets.

In this section:

- ▷ Investor roundtable
- ▷ Equity style perspectives

# 2019 could be an inflection point

## Roger Early

Global Co-Head of Fixed Income | Philadelphia

## Brett Lewthwaite

Global Co-Head of Fixed Income | Sydney

## John Leonard

Global Head of Equities | Philadelphia

## Stefan Löwenthal

CIO, Global Multi-Asset Solutions Team | Vienna

From economic growth to trade issues, from rising rates to the question of inflation, the outlook for 2019 may be shaping up to be an important inflection point. Will US growth slow and other economies pick up the baton? What impact will trade tensions, tightening monetary policy, and potential inflation have on asset classes ranging from fixed income to emerging markets? Four of Macquarie's investment leaders provide views in this roundtable discussion.

## Going into 2019, where are we and how would you characterize the investment climate?

**Brett Lewthwaite:** Overall, the current investment backdrop is one where the challenges arising from the monetary policy shift from quantitative easing (QE) to quantitative tightening (QT) continue to emerge, with certain markets faltering in response. However, at a more macro level, it's also fair to acknowledge that global growth remains relatively robust, although momentum has begun to soften.

**Roger Early:** Let's focus for a moment on the US economy, since much of what happened in 2018 and what's likely to happen in 2019 hinges on its performance. We're probably at the end — or very close to the end — of the peak benefits provided by the US tax cuts in 2018. The uptick in economic growth that we've had in the US, especially in the second and third quarters of 2018, just doesn't seem sustainable. I don't think this means that we're headed for a recession — I think it just means that we're not going to keep growing in the 3.5% to 4% range. I doubt we'll see growth that strong in the fourth quarter of 2018 or throughout 2019. I grew up in a world where 3% to

4% growth was normal. We aren't back to that world yet, in my opinion.

**Stefan Löwenthal:** It's hard to imagine anything else right now that could lead to a renewed boost in US gross domestic product (GDP) apart from massive infrastructure spending — especially if you look at it in terms of the budget deficit and the debt-to-GDP ratio. These are pretty clear signs to me that we're near the end of the cycle.

**John Leonard:** I'm marginally more optimistic about the US economy in 2019. I see strong pent-up demand among corporations for making capital expenditures that will extend into 2019. Unemployment is low and wages are growing. Overall, I expect a reasonably good year for the US in 2019, even if we do cool off a bit from some of the GDP numbers we saw in 2018.

**Roger Early:** It's true that a recent increase in corporate spending may have some legs, but I'm increasingly concerned about the American consumer in 2019. I think there's going to be a huge shock when middle- and upper-income Americans file their 2018 income taxes in April 2019. The decreased withholding on paychecks that benefited them in 2018 — and that has helped to stoke the economy — is going to have to be paid back. Some who normally get a tax refund may not get one. And those who aim to break even in taxes may end up sending a check to the government. So, while the corporate growth may carry on, I think many Americans may be in for an unpleasant surprise, one that could curb spending and US economic growth.

## What about the role of central banks around the world and interest rates — where are we now and what should we expect?

**Brett Lewthwaite:** In 2018, we finally began to see central banks around the world trying to wind down a very long period of mass liquidity and negotiate a soft landing. If you look back over the past 10 years, we have had a stream of central bank support that has translated into average growth and elevated asset prices. It's led to crazy things like negative interest rates and it's been fantastic for financial markets. In effect, the QE tide previously lifted all

No one is very positive, comfortable, or constructive about the US equity market, which leads me to think it's probably not yet time for it to come unwound.  
– John Leonard

boats, but now we're in a period of transition with QT. We think some vulnerabilities are likely to be revealed as this once great central bank tide recedes.

I'm not convinced that the US Federal Reserve and other central banks will go much further and tighten too much or that we'll see rates escalate much from here in 2019. It's important to keep in mind that much of the world would struggle with higher rates because there's a huge amount of debt globally and higher rates would be very challenging. So, while it may be easy to expect interest rates to continue to rise into 2019 and beyond, I'm not so sure that will materialize. In other words, let's not give up on "lower for longer" because it very much might still define the environment we are in.

**Roger Early:** I agree with that thinking. As we move into 2019, the federal funds rate might well be near the upper end of its range. We may be tight enough. While estimates suggest that 2019 will continue to be a year of tightening, let's not get too carried away. We don't believe it will be as big as many might think.

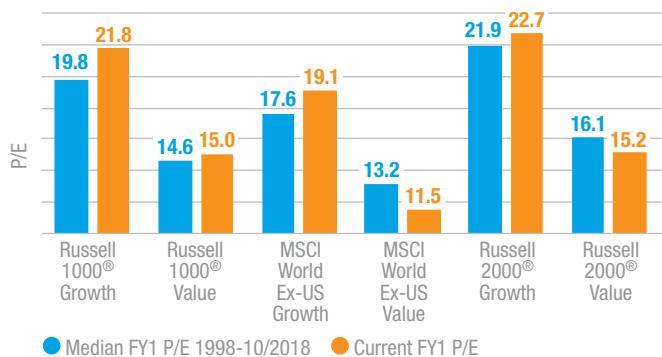
### The US economy and central banks aside, what else is shaping up to be a driving force in the investment world looking at the year ahead?

**Stefan Löwenthal:** One key theme that emerged in 2018 and remains on the table is inflation, both in the US and on a global level. If we look back on market performance in 2018, it was actually inflation — or the fear of inflation — that led to the global equity market correction in February 2018, when we saw higher-than-expected wage growth in the US. Looking ahead, we still see some signs of inflation. I do think it's manageable and is unlikely to run away as it did in previous decades — but let's not ignore this as a potential issue.

**Brett Lewthwaite:** In the fixed income group, our models haven't been indicating a great deal of meaningful inflation pickup in the near term, but we acknowledge those stronger convictions. That's why we remain alert to inflation as a potential market theme.

### Investors more willing to pay up for growth stocks

Forward price-to-earnings (P/E) multiples



● Median FY1 P/E 1998-10/2018   ● Current FY1 P/E

Sources: FTSE Russell, MSCI, FactSet. Shows weighted median of consensus fiscal year 1-year (FY1) forecasts of P/E multiples.

As for other themes, trade is a huge uncertainty in our view. It's quite difficult, if not impossible, to sense how much of the chatter on restrictive trade is just that — chatter. The concern, of course, is that if it escalates from chatter to policy, it might cause a partial walk-back of the strong benefits of globalization. As a result, that could create complexities and challenges for many multinational corporations. It's not clear where we're going with all of this — but it is clear that we've gone from an in-sync world to one marked by divergent interests.

**Roger Early:** The whole issue of trade is such a big unknown. Is this posturing for negotiations, or a harbinger of gigantic protectionist policies? It's hard to know. I wouldn't make any bets based on trade outcomes or assumptions.

**John Leonard:** We should add volatility to the list of driving forces and risks, even though volatility is a fallout from other risks. We had been in a sustained period of an extreme lack of volatility in most developed markets, and were almost lulled into thinking it's the new normal. However, market volatility has been ratcheting up in late 2018. It's a critical factor to the degree that volatility can impact the markets.

## INVESTOR ROUNDTABLE (CONTINUED) ---

**Brett Lewthwaite:** Let's not forget currency and the effects that can have. The US dollar has been strong throughout 2018. If continued strength results in headwinds for US growth, other currencies could gain on the dollar, which would help support growth in other regions, such as Europe, Japan, and emerging markets. We think it's quite possible that 2019 just might be the year that the rest of the world picks up the baton from the US and takes a leadership role.

### With that backdrop, what are the implications for investments in 2019?

**Stefan Löwenthal:** One way of looking at it is that 2018 performance was all about strong US growth, which has implications for other areas. With the US growing at 4%, for example, suddenly emerging markets growth of 4% to 5% doesn't seem so hot. There's no need to assume emerging markets risk if the growth is on par with the US. So, if the US growth story starts petering out in 2019, I suspect investors' attention will turn to other markets: China, Japan, and emerging markets. The US just overshadowed every other market — but we might see a reversal in that sentiment.

**John Leonard:** As I mentioned, I don't think we're done with the US rally. That said, I don't have wildly optimistic price targets. We're looking for about 2,800 for the S&P 500® Index next year, which is flat to slightly higher than at the close of 2018. No one is very positive, comfortable, or constructive about the US equity market, which leads me to think it's probably not yet time for it to come unwound.

**Brett Lewthwaite:** For fixed income, we believe the backdrop warrants a continuation of more defensive positioning — by that we mean accumulate duration and be wary of credit risk, especially in the higher beta sectors, acknowledging we are late in the cycle and that further abrasion is likely as global central banks, the Fed in particular, tighten policy.

### Do you see 2019 as the year that the bull market in US stocks ends?

**Brett Lewthwaite:** In short, that's unlikely in my opinion, but a lot depends on how far central banks push rates up. Overall, I suspect that they won't push too far and will keep rates fairly contained in a range that won't impact asset prices too markedly.

## EQUITY STYLE PERSPECTIVES ---

# Is value investing dead? Reports are greatly exaggerated

### Sharon Hill

Head of Equity Quantitative Research and Analytics | Philadelphia

Many models underlying quantitative investing, smart beta, and similar systems rely on the value factor. This refers to any investment process that favors cheap stocks over expensive stocks, using fundamental measures such as book, earnings, and cash flow. Research going back to the well-known 1992 paper from Eugene Fama and Kenneth French has made the case for value by its performance in many markets over long time horizons, both in and out of sample.

Over the past year or so — an eternity for professional active managers — the market has not been rewarding value factors. Cheap stocks have stayed cheap, while expensive ones

have grown ever more expensive. So naturally, investors are questioning whether the factor will ever revert to its former glory.

A number of Macquarie Investment Management teams make use of value factors, often as part of their initial screening process before conducting more detailed fundamental analysis. The teams use nuanced measures of value, which we believe to be more sophisticated than those used by some competitors, and we also rely on optimization techniques to mitigate risk. However, when the market is rewarding other attributes, reliance on value isn't helpful. When there's a storm at sea, even the yachts get rocked.

### Human emotion, rather than macro forces

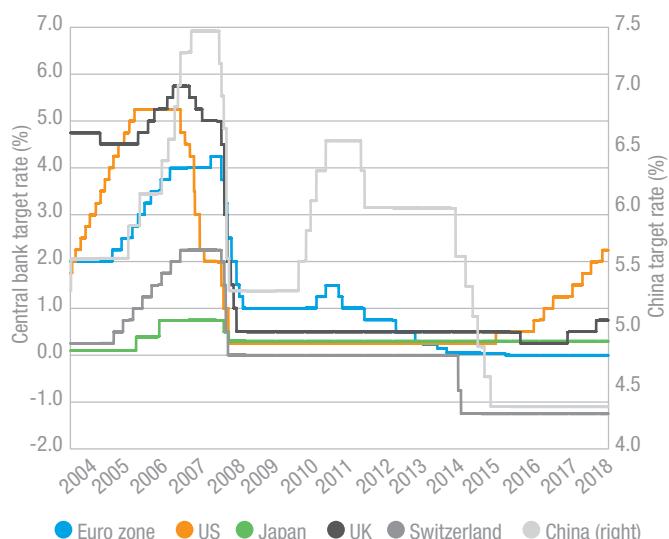
Predictions about when value will return to favor have cited indicators, such as the slope of the yield curve and rising inflation, but we do not think that the value/growth rotation is principally

**John Leonard:** When it comes to bull markets, they don't have to end with a seismic repricing of the market. They certainly can end that way, but they can also end with a sideways, grinding movement. What's important to recognize is that the returns from US equities over the past few years have stemmed from growing earnings — not because of expanding multiples. Yes, the market is high, but in our view it should be high because earnings are so robust. That means I'm not really concerned about valuations being too high here. When it comes to US equities, the gap in valuations between the US and Europe has narrowed since corporate America has done well and Europe is catching up. So, while slowing growth in the US is likely, the US still looks solid as we move into 2019.

### What specific opportunities seem appealing as we shift into 2019?

**Roger Early:** Let's look at fixed income. This asset class has historically provided three things: income, liquidity, and downside protection. Well, income is finally coming back — but it's as important as ever to do good credit work and make sure that the debt you're investing in is backed by a solid business and operating model, and, in the case of

### The Fed's policy has changed — will the rest follow?



Source: Bloomberg.

Investors have questioned whether the factor will ever return to its former glory.

driven by macro forces. Instead, we believe that it is motivated by complicated human emotion, which is what causes value to work in the first place.

Investors' expectations for future growth have been unreasonably high, especially in the US. One way to view this is through aggregate estimates for long-term earnings growth for the Russell 1000® Growth Index. As the chart to the right shows, growth rate estimates have risen precipitously over the past couple of years, from a range of 12% to 14% to a level approaching 18%.

Outsized expectations are precisely the behavioral underpinnings of the value premium. As soon as disappointment begins to surface, those of us who appreciate the value factor will likely stand to benefit.

### Growth rate estimates have risen dramatically

Russell 1000 Growth Index, long-term EPS growth estimates



Source: FactSet. EPS is earnings per share.

## INVESTOR ROUNDTABLE (CONTINUED)

corporate bonds, that companies haven't overextended themselves. High yield spreads are pretty tight with good credit, so there's no real reason to add risk, in my view. We're in an era where monetary policy doesn't follow the text books. So, it's important to choose credits carefully and not chase risk — if you do that, I find no reason to fear longer maturities. As we've said for a while now, duration is not the enemy.

**John Leonard:** We think that there is still plenty of scope for further upward movement in equity markets too. There may be corrections from time to time, which will be painful, but we don't see any good reason why equity markets would suddenly collapse. As we have discussed, the big risks to this outlook are geopolitical, in the form

of a trade war or something along those lines. But if the environment remains fairly stable, then we think there will be opportunities to be found in the US, in other developed markets, and also in emerging markets. In recent quarters, a lot of attention has been given to expensive megacaps with high projected growth rates, and there are plenty of other stocks which still look attractively priced by comparison. We think this could be a good environment for bottom-up stock pickers to find great companies at reasonable prices.

**Stefan Löwenthal:** I agree with Roger and John. Looking at the edges of traditional asset classes such as equity and fixed income assets, I see another very promising opportunity in global listed real assets. Of the subgroups

## EQUITY STYLE PERSPECTIVES (CONTINUED)

# Evolve or perish: The evolution of company valuation

**Scot Thompson**  
Portfolio Manager | Sydney

The notion that each company has an intrinsic value — a value based on the fundamentals of its business — may be an obvious concept to those in investment markets. Despite this, how best to determine a company's value is the topic of much debate. One important aspect that compounds the discussion is the continual evolution of global economies, which serve as a backdrop for changing perspectives on how to differentiate what is "cheap" from what is "expensive."

Such evolution can have a profound impact on active equity managers. Those unable to adapt as markets and industries evolve can be left using valuation metrics that are no longer relevant.

### What is value investing?

Important to an understanding of the changing nature of company valuation is an understanding of value investing — which is a style of investing that favors buying stocks at a discount from their intrinsic value.

The theory is intuitive and compelling — buying undervalued stocks may offer the potential for above-market returns. It was practiced by some investors for decades before the influential paper by Fama and French (1992) culminated in the definition of value as the book-to-market factor.<sup>1</sup> This defined stocks with high book value to market value as "cheap," and stocks with low book-to-market value as "expensive."

Other reference points for value have since been proposed by academics and practitioners, including dividends, net income, cash flow from operations, and, in corporate finance, discounted cash flow models. While each reference point has its pros and cons, we believe multiple factors are required to holistically consider whether a stock is appropriately priced.

### Shifting composition of the world economy

As economies have evolved over the past century, so too have businesses, along with their relative attractiveness to investors. This figure shows the change in composition of the US economy since 1947. With its contribution to GDP falling from around 25% to slightly more than 11% in 2016, the manufacturing sector is a good illustration of the market's evolution and the resulting impact on defining value.

When return on capital is relatively homogeneous across companies, book value will also be more representative of a company's valuation, and we would expect book-to-market to be an effective valuation tool.

In the US economy, professional services, technology, education, and healthcare, together with finance, have grown significantly at the expense of manufacturing and agriculture. Business models favored in the new economy

1. Calculated as most recently reported book value of equity scaled by market value of equity.

that comprise real assets — listed infrastructure, natural resources, real estate investment trusts (REITs) — all have some sort of inflation protection and have distinct benefits depending on the part of the cycle we're in. For example, we're leaning toward listed infrastructure now because it's well suited for a slightly inflationary, late-cycle environment, and we're slightly less positive on REITs, where companies, especially outside the US, appear a bit overlevered.

On emerging markets, I think there are some emerging market asset classes that could be quite interesting next year. It's impossible to time a bottom, but we seem close. In 2018, we saw some significant currency devaluations — in Turkey and Argentina, for example. This could have been the first sign of fundamental stabilization in these countries

— and that could be a proxy for a turnaround in the whole group.

In general, I think we can agree that there will be many forces driving the markets in 2019. Even if only some of the topics we discussed continue to evolve, it should be an interesting year for active managers like ourselves.

tend to be more scalable with low marginal costs per incremental unit of revenue, such as ecommerce, online media, cloud computing, software, and life sciences.

In our view, this translates to an economy more heterogeneous in terms of profitability, and in which companies may justifiably trade at a more diverse range of book-to-market. In such an economic environment, we would expect book-to-market to be a less effective tool in determining value.

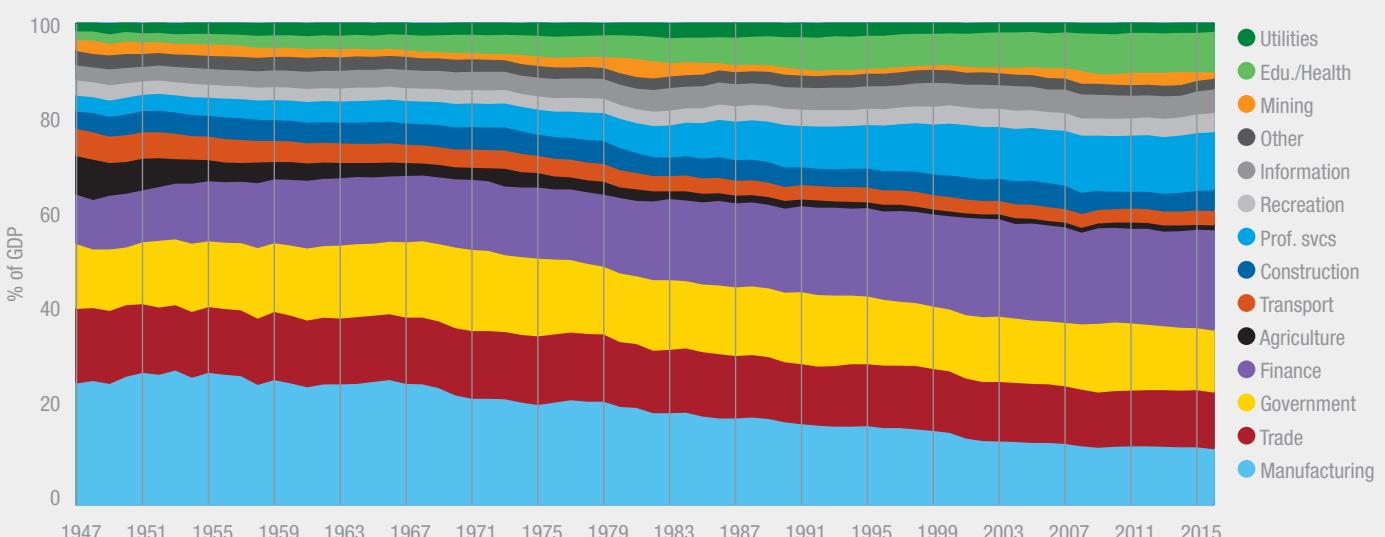
#### A holistic view on value: More than book-to-market

Technology is now playing a greater role than ever in shaping businesses to augment and enhance productivity. An example of this transformation includes airports using artificial intelligence to scan hundreds of camera feeds for security threats.

Our investment approach has also evolved, using a more holistic measure of value rather than book-to-market alone. In our experience, a contemporary value investing strategy should compare stocks on all aspects that are relevant and consistent with shareholder returns, including cash flows, earnings, dividends, and stock buybacks, and should also be aware of persistent differences between sectors, profitability, and growth prospects.

The investment community's focus on trying to differentiate "cheap" from "expensive" companies will likely see the debate of how best to define a company's value continue for many years. In our view, what best defines value will continue to evolve.

#### US sectors, in percentage contribution to GDP, have evolved over time



Source: US Bureau of Economic Analysis, December 2016. Professional services include IT services. Information includes Internet services and media.



# Global equities

It was another interesting year for equities in which the US markets continued to show robust growth for most of 2018 even as volatility picked up and other areas such as emerging markets tended to struggle. This section zeros in on equities for 2019, including a roundtable discussion about the important emerging markets area.

In this section:

- ▷ Developed markets large-caps
- ▷ Small- and mid-cap perspectives
- ▷ Asian equities
- ▷ Emerging markets equity investor roundtable

# US and China loom large in developed global markets

**Ned Gray**

Global and International Value Equity | Boston

It is often the case that the most significant countries driving returns in the developed international equity markets are the very two not included that group — the US and China. The US is the world's largest and most dynamic end market. China is a critical waypoint in global supply chains and, increasingly, an important end market unto itself.

Today, as the US presses for a reconfiguration of the global trading regime, we must add to those economic qualities a political dynamic with enormous disruptive potential and a highly uncertain outcome. The strength and mix of prospective equity returns in 2019, in our view, will be a function of these overlapping economic and political factors, all subject to the market's evolving verdict on these developments, expressed in price valuations.

- We see cyclical trends suggesting greater recovery potential in non-US markets, such as Europe and Japan, that have experienced slower and more extended recovery periods than other regions, and continue to benefit from ongoing stimulative monetary policy and low-capacity utilization. They stand in contrast to the extended position of the US market, which has enjoyed a decade of uninterrupted growth, with interest rates now rising and unemployment near all-time lows.

- The scope and aggressiveness of shifting US trade policy is a new phenomenon in the lifetimes of most market participants and must be taken seriously. Two key elements have related but distinct implications: first, domestic economic concerns behind demands for equality in enforcing a level playing field among trading nations, and second, long-range strategic geopolitical calculations aimed at defending the pre-eminent place of the US in the world, with a clear eye toward China. The first has already had a disruptive impact on global supply chains and the myriad companies tied to them, initially through price, but with volume-related supply and demand effects likely to follow. We believe the likely winners of these shifting competitive winds will be companies with adequate pricing power to pass new costs along to their customers. Beyond winners and losers, we see continued escalation in trade tensions likely to force companies across numerous industries to bear higher capital costs as they adapt to reconfigured supply chains. The second, geopolitical question carries potentially broad and very significant consequences, but ones that are highly uncertain and long-tailed in nature. Not least among them will be the place of long-standing partnerships between developed markets that have had both economic and strategic elements. Traditional US allies in Europe and Japan may be affected, for good or ill, while other newly emerging economies will likely see their significance enhanced.

# Fundamentals drive a cautious long-term view

**Ty Nutt**

Large-Cap Value Equity | Philadelphia

As patient, long-term investors, our thinking is based on a time horizon of at least three to five years. This is because, in our view, shorter-term market movements are more unpredictable, driven by human emotion and crowd psychology. To us, in the longer term, fundamentals matter

most. In that regard, looking out over the next three to five years, we are cautious about the prospects for US equities because of the potential for slower economic growth, the outsized returns investors have already experienced, and, most importantly, high stock market valuations.

The US economy appears to be benefiting from a number of key supports that include low unemployment, strong consumer sentiment, a boost in corporate earnings, and

- While underlying causes of the past several years' global equity performance, including the factors discussed above, may be difficult to parse, one pattern is clear to us: The US has dominated ever since it trounced against the non-US developed markets in September 2009 and against the emerging markets a year later. Admittedly, the non-US world's combination of slower growth and interim recession, institutional dysfunction in Europe and the United Kingdom, and perceived risk elsewhere may justify a good deal of its performance lag. This contrast is not entirely new, though, and long-term relative valuation trends suggest we have seen a dramatic overshoot in favor of US equities.

As indicated in the chart at right, the current price-to-earnings (P/E) discount of the MSCI EAFE Index to its US counterpart is more than triple its long-term median. We have not seen a valuation gap of this magnitude since the global financial crisis of a decade ago. Although gradual improvement in the underlying operating performance of non-US companies may be unlikely to trigger an inflection in this relative valuation trajectory back in their favor, some of the other factors we have cited may contain the seeds of just such a reversal.

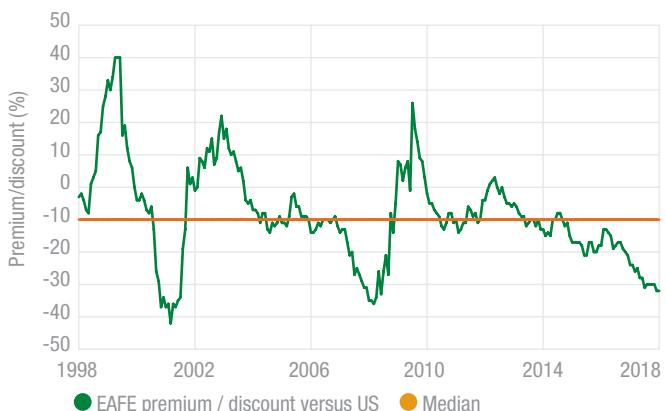
With the country's clearest concentration of competitive distinction, the US technology sector has played a critical role in driving its relative performance as well as its valuation premium. The sector is also distinguished by one of the most globally integrated supply chains in existence — one

rising business investment. We think some of these have been helped by the recent tax law changes, and we wonder to what extent their effects will be temporary. As we look out several years, it's our view that the rate of economic growth will return to below-trend levels. We see this occurring because of the high degree of indebtedness throughout the economy, a growing budget deficit, aging demographics, rising short-term interest rates, and the removal of Federal Reserve stimulus.

It's been more than nine years since the broad market S&P 500® Index experienced a bear market, defined as a decline of at least 20%. From the market bottom on March 9, 2009, through Sept. 30, 2018, the S&P 500 rose fivefold, posting a cumulative total return of 426%. This equates to an extraordinary annualized total return of 19% (source: FactSet Research Systems).

that may be subject to stress in the event of further reprisals in the ongoing trade dispute. With current US valuations implicitly discounting not only the sustainability of these businesses, but also the sustainability of their rate of growth, a slight turn in sentiment may trigger a dramatic response. These observations lead us to reconfirm our conviction that diversification into non-US equities is a prudent response to the world's uncertainties.

#### **EAFE versus US, by price-to-earnings (P/E)**



Source: MSCI via FactSet.

The price-to-earnings (P/E) ratio of the S&P 500 Index is 25 times based on trailing 12-month reported earnings, down from its post-recession high of 26 times reached in January 2018, but still 56% higher than its long-term average of approximately 16 times. Another valuation measure, price-to-sales ratio (P/S), tells a similar story. At 2.3 times, the P/S ratio for the S&P 500 Index is at the same level at which it topped out in March 2000 at the peak of the tech bubble (sources: Ned Davis Research, The Leuthold Group).

From these levels, prospective returns will likely be below average, in our view, while potential risks seem higher than usual. Given the importance of starting valuation to long-term equity returns, we can foresee annualized total returns in the mid-single-digit range. Our concerns about equity valuations and potential market risks mean that we remain defensively oriented with a focus on higher quality businesses that offer attractive relative value.

## Searching for opportunities, with an eye on the long term

Until the stock market volatility late in the year, US stateside was the place to be in 2018 for small-cap and mid-cap stocks, we observed. Worries about blowback from protectionist measures can prompt investors to focus on companies with less global reach. US tax cuts positioned smaller companies to benefit disproportionately, compared with larger companies that can pay up to 40% of taxes overseas. Also contributing was the long-running US economic expansion. While small- and mid-caps experienced volatility along with other asset classes in late 2018, the focus for managers in 2019 is on discovering opportunities in the pullback and keeping an eye on the long term.

## Unearthing the underappreciated

**Joseph Devine**  
Global Ex-US Equity | San Diego

The environment for small-caps and mid-caps in emerging markets continues to be challenging. Negative sentiment continues to surround them and there are definitely areas at higher risk than a year ago, particularly among companies that are exposed to global supply chains threatened by political influence. In the short term, that overhang means companies with strong earnings, such as those we invest in, are not being rewarded. But if you look back at how emerging markets have historically performed, you will notice many periods like this one, in which macro headwinds come and go and the group has tended to be pretty resilient.

In some cases, those headwinds can even accelerate longer-term trends. We believe that's happening in the Chinese technology sector, which was already experiencing a long-forming secular theme around economic nationalism. In recent years, the Chinese government has introduced a handful of initiatives

meant to take ownership over certain technology areas. Semiconductors is one: China has committed \$150 billion to stand up its own industry rather than continuing to rely on companies in the West (source: US Chamber of Commerce analysis, 2017). Ditto for advanced manufacturing, an area in which the government has unveiled its "Made in China 2025" plan to make hefty investments in research and innovation and has placed firm targets on sourcing local manufacturing content. Other similar initiatives involve energy technology and artificial intelligence, where China already has some of the most advanced systems in the world.

These plans were already in place, as China is well aware it needs to have leading technologies in order to be a strong economic power going forward. But the trade tensions that have dominated the headlines this year have raised fresh concerns over constrained supplies. China doesn't want exposure to a situation in which its access to these critical technologies is compromised. That's likely to push China to aggressively develop its own technology. We see this as an underappreciated opportunity that will play out over the next 5 to 10 years and should, in our view, generate many opportunities.

We also see what we call "positive change" occurring in emerging markets outside of both China and the tech area. We're looking for companies that, in our view, are entering or focusing on more advantageous or profitable markets, entering new countries or regions, introducing new products or services that cater to the growing middle class, exiting ventures that proved unprofitable, or making leadership changes needed to achieve better success.

# Cashing in

**Christopher Beck**

Small/Mid-Cap Value Equity | Philadelphia

This asset class tends to do well when the economy is growing and we expect that to continue in 2019. The leading economic indicators appear to be pointing up. Unemployment in the US is the lowest in almost 50 years with little fear among workers of losing their jobs. Consumer confidence is near all-time highs. When consumers are confident, they're spending money.

That said, once we get further into the year, we think we're going to face more difficult year-over-year earnings comparisons against the boost many US companies received from the drop in their corporate tax rates from tax reform that went into effect in 2018. As a result, we're focusing on those companies that have historically paid high cash tax rates because they're enjoying an increase in their cash flow as well as in their earnings. That means they can decide to reinvest the savings in the business or put more money back in shareholders' pockets. In 2018, they chose the latter. We saw a very large level of dividend payments and corporate buybacks. We also saw a large

number of corporate takeouts, including several in both our small-cap and mid-cap portfolios.

We expect these trends to continue in 2019 — and we're looking to take advantage. Financials were among the biggest beneficiaries of tax reform since they pay higher taxes than most, and now they're selling at a reasonable discount to the market given that most of their loans are variable rate and reset higher when the Federal Reserve hikes rates.

Consumer discretionary firms also tend to be higher taxpayers and they aren't overly expensive given how confident consumers are. We've seen a big recovery in retail stocks despite continued secular pressure from ecommerce companies, and certain restaurant stocks look particularly attractive.

Even one of the economy's current weak spots could turn into a source of strength in 2019. Housing has hit a bit of a rough patch, but that likely was necessary to correct supply-and-demand imbalances in the market. Soaring home prices have kept younger Americans from buying homes, so the big spending jolt that most have been expecting from millennials hasn't really kicked in. That could change in a hurry if housing prices continue to stall, making starter homes more affordable. If that happens, we believe that we could see a significant increase in new and existing home sales, as well as all the spending that goes along with home purchases, such as furniture and appliances.

# The expansion continues

**Alex Ely**

Small/Mid-Cap Growth Equity | New York

There is plenty of discussion about cyclical concerns as rates move up and foreign markets falter. We believe that fear is misguided, an aftereffect of the experiences of 2008. Instead, we see continued economic and fundamental strength ahead for 2019. Unfortunately, most investors aren't prepared for this strength, as they are too conservatively positioned in our view. We call it alligator-armed investing, as we see too many allocations in a rising yield environment that favor income over risk assets, such as small-cap stocks. We believe the risk ahead will be in not taking one.

As a group, we look to find strong trends in the economy in order to take advantage of the continued expansion. The trends we see are either all-new businesses such as social networking or a wholesale transformation of a business,

such as what streaming media has done for content. Trends we are currently invested in are large in scope and gaining in momentum. As a long-time growth manager, we find it hard to contain our excitement as enormous markets such as food, content, transportation, and banking are being completely transformed. In our view, this disruptive process shows no signs of slowing as it is technologically induced, providing many industries with a better, faster, cheaper way of doing things. Even when the next downturn comes, we believe these trends will continue to play out because of the value proposition they provide.

Despite our positive stance, we don't want to completely disregard cyclical concerns. There are basic risks that we monitor, such as global trade wars or an overly aggressive Federal Reserve, but what will likely finally end this run, in our view, will be inflation. We believe all the stimulus from both monetary and fiscal resources will eventually cause prices and yields to rise and bring about change in the constructive economic conditions we have today. We don't think this threat will happen soon. Rates are still historically low in the US, and many foreign countries have bond yields near zero. While corrections can happen at any time, we don't think we're nearing a recession or bear market. Within this environment, we're confident growth-oriented companies should do well.

## A “glass half-full” environment

**Francis X. Morris**

Core Equity | Philadelphia

Historically, US small-cap stocks have performed their best when real GDP growth has been in the 2% to 4% range. This relationship exists as US small-cap companies, on average, derive 81% of their revenues from within the US. This has made those companies more isolated — relative to US large-cap companies — from earnings headwinds related to the US dollar and global trade. Looking forward, some economists have projected the US GDP growth rate to be 2.9% for 2019, the highest growth forecast for any country in the G7. (Source: FactSet economic estimates.)

We see a number of reasons to be both optimistic and pessimistic next year, while on balance, the glass is more than half full, in our view. Coming into 2018, we had expected the new lower tax rate on US corporations to provide an earnings boost of sorts and this has held true. On a weighted basis, the effective tax rate on companies in the Russell 2000® Index is on pace for 24% this year, versus an effective rate of approximately 33% two years ago. We anticipate that earnings-per-share (EPS) growth rates will likely come down from their current pace, which is in the high 20% range. However, we think EPS growth rates won't fall too far, as current Wall Street estimates for 2019 earnings growth are in the mid- to upper teens, which should be sufficient, as long as margins and capital spending remain healthy.

A steepening yield curve has historically benefited small-cap companies, relative to large-cap companies, while a flattening or inverted curve can hinder small-cap performance, given that it's a strong indicator of slowing economic growth. While a flattening curve concerned investors in the summer of 2018, it had not flipped to an inverted curve near year end. Inflation is another worry, though our concerns are mixed. Expected inflation has historically led to relative outperformance of small-cap stocks versus large-cap stocks. At the sector level, higher inflation can put downward pressure on growth-oriented sectors while benefiting traditionally value-oriented sectors. Lastly, rising wages have started to apply additional pressure on an extremely tight labor market in the US.

Overall, this translates to a market that is trading, in our view, at attractive valuation levels — levels that are at a sizable discount to their large-cap brethren. Historical forward return analysis, based on relative valuations, suggests positive market returns when looking out 12 months.

One area where we're finding these inefficiencies is in capital goods makers. Such companies have benefited from lower taxes, reduced regulations, and the strength of the overall economy. However, the sector's performance during 2018 was weaker than we would have expected. Some of the weakness likely stems from the big runup we saw in these stocks ahead of the tax reform of late 2017, but the increased capital expenditures that were expected didn't immediately materialize. Recently, capital expenditures have started to appear, and valuations have corrected, making us more optimistic about the sector. We do see some risk through — in particular, tariffs pose a threat to the sector and raw materials costs are pinching margins, leading us to pay close attention to the financial impact.

Moving into 2019, we will continue to maintain our strategy of investing in companies that, in our view, have strong balance sheets and cash flow, sustainable competitive advantages, and high-quality management teams that we believe have the potential to deliver growth.

# A China health check

**John Bugg**

Asian Listed Equities | Hong Kong

In managing a concentrated, active portfolio of Asian equities, a macro factor to consider — one that has the potential to steer markets up or down — is China. In 2018, months of rhetoric and threats have turned the issue of a US-China trade dispute into a key driver affecting the entire region.

The stakes are high, with both the US and China announcing retaliatory tariffs throughout 2018. As the year ends, there are some signs that the US-China dispute has reduced consumption in the region as well as business spending, with one estimate of direct impact to China's GDP in October 2018 as a reduction of 40 basis points (source: HSBC). This level of impact may not be as strong as many investors fear, but we think that weaker-than-expected fourth-quarter GDP numbers could extend into 2019.

The indirect impact also has yet to materialize. By no means is China's economy in a depressed state as we enter 2019, but we do anticipate a slowdown in growth. A somewhat softer 2019 Chinese economy could have an impact on the region from Macau gaming stocks to Korean consumer companies.

## Economic stimulus capability

China, however, has significant firepower to stimulate its economy. China's government has a number of tools to do this and, we think, has indicated its intentions to use them. China recently has been looking into a package of tax cuts and policy initiatives to spark growth, including guidelines to promote household consumption. The government also is working to speed up implementation of major infrastructure projects, and local government bond issuance has been accelerating since June 2018. Monetary conditions remain tight but could be loosened. In fact, short-term liquidity has loosened with the reduction in the SHIBOR (Shanghai interbank offered rate). There have also been multiple rounds of reserve requirement ratio (RRR) cuts to improve financial conditions.

Still, for investing in Asian equities in 2019, a slowdown in the pivotal Chinese economy calls for a more defensive stance in portfolios, in our view. Defensive stocks could include, for example, utilities, which have been benefiting from lower commodity prices.

We've seen a large rotation — not just in Asia, but globally — away from growth companies into value stocks. That shift has created much more reasonable valuations in some sectors in Asia, such as healthcare and information technology, which we favor more at this point than an exposure to consumer stocks. Equities in China and Hong Kong typically correlate closely with China's currency — and the renminbi has fallen about 7% over the second half of 2018. If it continues to slide, both stock markets could fall in concert.

While the trade wars have had an impact, we believe that investors have devalued the region too harshly, and perhaps prematurely. Although the economy of the region's major force, China, likely will slow in 2019, China may be able to use its economic tools and leverage to stimulate and dampen any negative effect. And in our view, there are still potential opportunities especially among defensive sectors.



# Is the emerging markets story over?

**John Bugg**

Asian Listed Equities | Hong Kong

**Joseph Devine**

Global Ex-US Equity | San Diego

**Daniel Ko**

Emerging Markets Equity | Boston

**Stefan Löwenthal**

CIO, Global Multi-Asset Solutions Team | Vienna

With a lackluster showing from emerging markets (EM) equities in 2018, Macquarie portfolio managers focused on developing market investments have recently been sharing insights about what's behind the underperformance and the outlook for the investment class.

## As we head into 2019, where are we with investing in emerging markets?

**Joe Devine:** 2018 was difficult, after a strong 2017. EM was derailed by the strong US dollar and the trade war. It is probable, in my view, that we get back on track in 2019. Sentiment is very low, which is a buy signal for the contrarian investor.

**Daniel Ko:** Emerging markets were driven in 2018 by several factors: US interest rates and the US dollar, elections, international relations, and particularly trade. Joe's right, there's not much new here — trade tensions were flagged as a risk going back to the 2016 US election and worries about Federal Reserve tightening have spooked the market every 18 months or so. Investors appear to be more highly focused on these concerns as they seem to dominate the headlines more often. Usually we find these environments create an opportunity to find good businesses that are underappreciated because of how the broader market is acting.

**Stefan Löwenthal:** To me, EM continued to underperform in 2018 because of the stronger-than-expected performance of the US, where growth exceeded just about everyone's expectations. As a result, the rest of the world looks weak by comparison. An emerging market country growing 4% or 5% doesn't look so great when the US is

also in that range. So, it wasn't because EM growth was very weak, but because the US was so strong.

## What can change — and what stand out as potential drivers for the asset class in 2019?

**Stefan Löwenthal:** A big factor that we began to see starting from mid-2018 was massive devaluation of some emerging markets currencies. Those moves either have led, or will shortly lead, to reductions in current account deficits in these nations. In some cases, we will even see current account surpluses for the first time in more than a decade. That could turn things around pretty quickly in terms of those countries and sentiment for the group on the whole.

**Daniel Ko:** Short term, it's always difficult to call a bottom. Typically, we've found that periods like this tend to be good buying opportunities. We stick to focusing on finding competitively positioned companies, which, in our view, have good long-term prospects and the ability to deal with near-term economic and market volatility. When sentiment calms down and investors begin to focus on the underlying fundamentals more, these investments can end up doing very well.

## Is there something particular at the moment that you view optimistically?

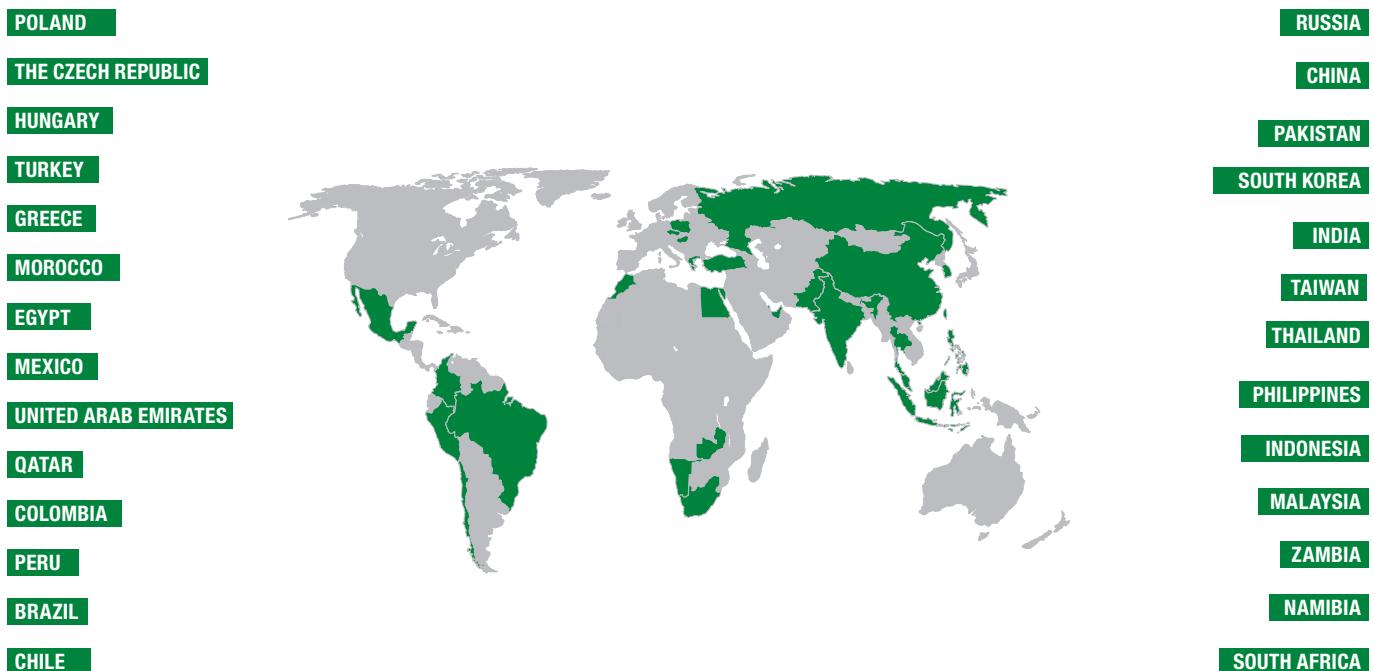
**Stefan Löwenthal:** Going forward, we think that the rest of the world will catch up to the US in terms of its growth rate. It seems inevitable that the US will slow down from its 2018 pace. We are not expecting a recession in the US, but a slowdown. If that happens, then emerging markets will grow faster than developed markets (DM). That should lead to some renewed outperformance from emerging markets equities, or on the fixed income side. And, again, the currency devaluations can make a big difference in some markets that were giving investors major concern.

**Joe Devine:** And I like to point out that they're called emerging markets because there are issues that need to be improved: corporate transparency, corporate governance, and the rule of law. These are not trivial matters. These issues are slowly improving, but investors remain bearish and look at the glass as half empty. They don't see the

## EMERGING MARKETS EQUITY INVESTOR ROUNDTABLE (CONTINUED)

### The world's emerging markets

Countries highlighted include those in the MSCI Emerging Markets Index and in Bloomberg's Top 20 Emerging Markets.



Sources: Bloomberg, MSCI.

physical energy on the ground in these countries or the massive size of the emerging millennial consumer. We believe the entrepreneurial spirit is alive and well in EM. This has the potential to translate into tremendous investment opportunities.

**Daniel Ko:** Emerging markets countries and companies have undergone a lot of adjustment over the past several years. There are important secular shifts going on in the way people in these countries live and work. Consumer culture is growing and developing in conjunction with technological change. As a result, we anticipate a lot of wealth will be created, and the businesses that do well are going to be a different set from those in past market phases. As an investor, you have to be able to look past the noise to things that you can have confidence in over the long term.

**Stefan Löwenthal:** Looking long term, there's a fairly compelling growth story that's underpinned by demographics, and it's possible to miss if you're focused only on current headlines. Take for instance the notion of a "rebalance" of global trade: US companies do have potential to capitalize in emerging markets that enjoy favorable demographic trends as well as latent demand.

#### What are causes for concern?

**Stefan Löwenthal:** Trade's certainly an issue. If tensions between the US and China escalate, that could lead to one or both of those economies slowing down. Of

course, if tensions ease, China could turn into a massive outperformer. The jury is still out on that one.

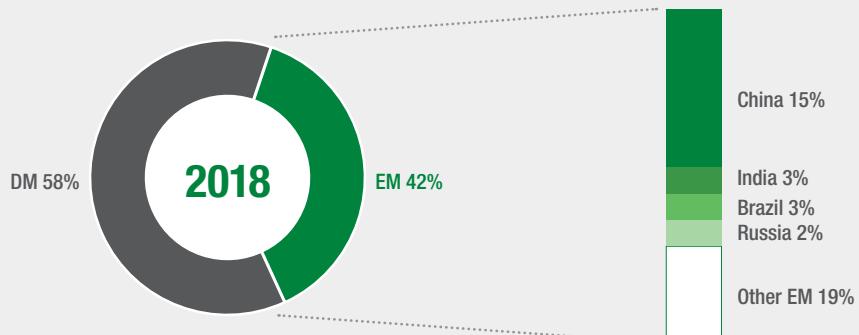
Meantime, several countries in Eastern Europe continue to grow fast — arguably too fast — and have had to cut their rates to a very low level following the lead of the European Central Bank. Poland, Hungary, and the Czech Republic in particular, and in part, Romania, are among the countries we're monitoring closely. They have reached wage growth in excess of 10%. Some are closer to 15% wage growth, while their interest rates are very low. (Source: Eurostat.) Historically, this has been a clear sign of overheating.

**John Bugg:** The major force not only in the Asian region, but for EM altogether, is China. That's why we think the trade dispute between China and the US that heated up in 2018 will likely continue to be a big driver in 2019. That also means the potential for a somewhat softer 2019 Chinese economy, which could then have a wider impact on the region. That said, China has many economic tools at its disposal and may be able to stimulate growth to head off any negative effect. All told, we think investors may have devalued the region too harshly due to the trade wars and, in our view, China continues to offer great potential for 2019.

**Daniel Ko:** I agree that China is by far the single most important country in the EM universe. It's also undergoing an economic transformation from industrial-driven to consumption-led growth. There hasn't been a hard landing, and a lot of change has already happened. However, the

## EM countries by GDP

2018 estimate: EM 42% of world economy



2035 estimate: EM 60% of world economy



Source: World Bank.

process will take years and there will be periods when people are more or less worried about the risks. Politics have always created volatility in emerging markets, and that's just something we have to be aware of when we look at the resilience of the businesses we own and what's implied in the valuations.

### How has EM equity investing changed in recent years?

**Daniel Ko:** There's been a shift in the companies that comprise the EM universe — natural resources have become a smaller part of the Index, while technology has become nearly one-third. This makes it hard to compare the market's valuation as a whole with, say, 10 years ago. It has also tended to mean there are better opportunities for minority investors to do well as the growing sectors tend to be less state dominated in how they make business decisions. Information flow is also much better than in the past.

### Any specific opportunities you'd like to highlight?

**Joe Devine:** We believe China is going to become an epicenter of technological change. When you look at the world, you have two tech powerhouses — the US and China. Recent political developments are driving China to accelerate its investment in tech. China is strong in Internet and social media, but lacks leadership in semiconductors, telecom equipment, and software. This must change. Development of the 5G network is strategic to China's

growth strategy. Artificial intelligence is strategic. China is the world's largest importer of semiconductors. It would like to shift this dynamic to its benefit and not rely on tech imports to power its next stage of growth. In our view, global tech leadership is going to change. New winners and losers will emerge.

**Daniel Ko:** I agree that there are a lot of opportunities within China, both in the Internet and consumer space. Lately we have found attractive companies in the semiconductor industry. This is particularly true in the memory industry — there has been structural change on both the supply and demand side but the stocks still trade at low valuations that we believe don't really reflect the reality. We have found more opportunities of late in Mexico, where political uncertainty has been weighing on valuations.

**Stefan Löwenthal:** Moving away from China, on the upside we see real positives for commodity prices and inflation, and we tend to like countries that are exporting commodities. Number one is Russia, which has suffered in the last five years partly because of some sanctions, partly because of lower commodity prices.

Apart from Russia, we favor other commodity exporters, like Kazakhstan. We also favor Brazil and Mexico, which both became attractively valued, also from an FX perspective. All of these countries are commodity exporters, as well as a couple in Africa like Nigeria, which is a very large commodity exporter.



# Global fixed income

Fixed income markets in 2019 could very well continue to be marked by some of the same forces from 2018 — divergence in growth between the US and the rest of the world, the effect of rising interest rates, and other vulnerabilities exposed by the receding tide of central bank policy.

In this section:

- ▷ Global fixed income perspectives
- ▷ Global credit views
- ▷ US high yield debt
- ▷ Mortgage markets
- ▷ US municipal bonds
- ▷ Emerging markets debt
- ▷ Private placement debt

# Low visibility warning

## Paul Grillo

CIO, Diversified Income | Philadelphia

## David Hanna

Portfolio Manager | Sydney

## David Hillmeyer

Head of Multisector/Global Fixed Income | Philadelphia

## Graham McDevitt

Portfolio Manager | London

When the weather report warns of low visibility, you know to expect a reduced line of sight into the distance. As we enter 2019, we think that's an apt description for global fixed income markets. Thanks to policy questions facing the US and China, things could play out along several different lines in the year ahead. The choices of these two superpowers will influence the rest of the globe via interest rate, foreign exchange (FX), and commodity price trends. When we consider this state of affairs alongside high valuations for fixed income assets, we see an environment for incremental defensiveness.

## A new divergence story: US versus China

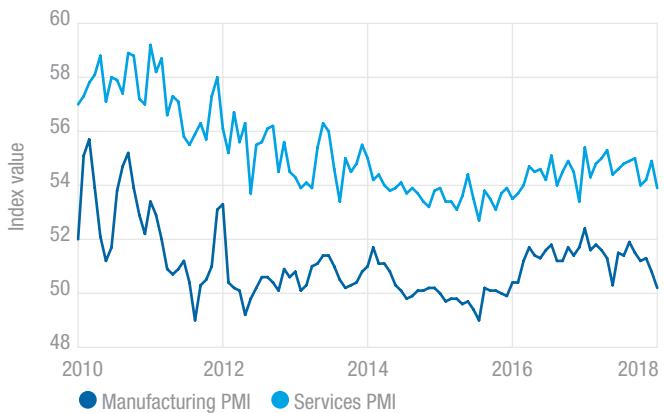
Going into last year, a key issue in global markets was the divergence in growth between the US and the rest of the developed world. Indeed, US growth surged, and the rest of the developed world and the dollar were high enough to produce fallout. Emerging markets debt and FX came under pressure — but crucially, these effects didn't cycle back to dampen real GDP growth in the US.

This year, the focus is shifting to the delta between the US and China. From the former's perspective, the course of 2018 positioned the US with an upper hand in trade negotiations. Amid peak employment, strong growth, and stable inflation, trade war worries and Federal Reserve interest rate hikes have so far only been bumps in the road for US investors.

China, on the other hand, spent 2018 in a state of managed slowdown. As the country plans strategically for its long-term position, policymakers emphasized deleveraging state-owned enterprises and other shadow-banking institutions. The country retaliated in trade tariffs against the US, but all evidence points to China being in the weaker position in negotiations.

There is no clear-cut case for what the two countries do next. The Fed is poised to tighten but faces tougher decisions as growth slows and the global impact of tighter

## China PMIs holding on above 50



Source: Bloomberg for China's Purchasing Managers' Indices (PMIs) as of Oct. 31, 2018.

## Total Social Financing has continued to fall



Source: Bloomberg for China's Total Social Financing as of Sept. 30, 2018.

policy is felt. Policymakers in China may aim to ease a bit into 2019, but their options are somewhat limited by structural-reform priorities. They're also limited in devaluing the yuan; if they go too far, they may face capital outflows and unhappy citizens.

## Convergence ahead

Beyond the US and China, we still see a story of growth muddling along. A decline in the euro may have gone far enough to spark a rebound in the euro zone's real GDP. Still, global markets face added stresses from higher US rates, a slower China pressuring demand and metals prices, and lower global trade volumes. These headwinds add to the instability that continues to emit from populist-driven protectionism around the globe — and by late 2018 it was still anybody's guess how Brexit might turn out.

All told, we see a strong case for some convergence among developed economies in 2019 — but it's not likely to come from a surge in growth. It's more likely to be a result of easing momentum in the US as the aftershocks of its 2018 strength start to filter back into economic activity.

#### Rangebound rates, or not

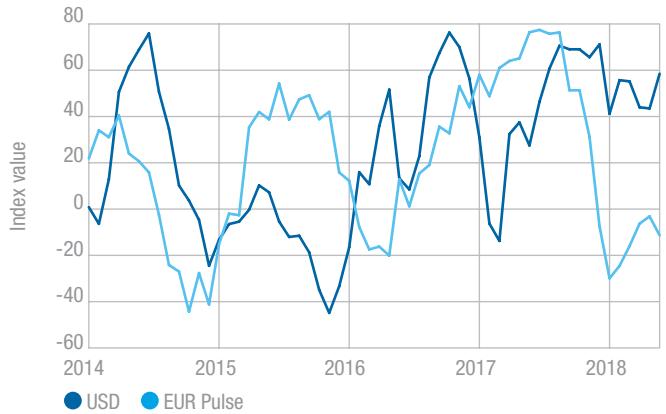
These trends, in our view, point to a rangebound year for global rates. The 10-year US Treasury is likely to head higher in the short term, unless US growth drops off, in which case we could see considerable softening. We expect yield curve flattening to continue, and we believe an inverted yield curve could be a real possibility in 2019. While we are reasonably certain that the Fed will hike rates, we don't know where its runway stops — it all depends on growth momentum and whether aftershocks materialize.

Beyond the US, we expect to see rates tick up slightly, but no sharp moves. Globally, developed economies are beginning to align a bit more than last year with regard to removing liquidity and looking ahead to rate hikes, but there's little evidence to hurry the process. Inflation remains benign, and growth is too fragile to warrant big moves, in our view. Credit spreads are near tights, so we see very limited upside across assets, with emerging markets as the possible exception.

#### Valuations as a deciding factor

With the US going strong, investors can't park on the sidelines. But the issues across global markets should keep investors on notice. High valuations across most assets imply little upside and higher downside risks. In our strategies, we are staying invested but choosing our risks carefully. We're positioning for less credit exposure and more duration, in some instances, while moving higher on the capital structure in others. Essentially, we are expecting a year with flight-to-quality episodes favoring risk-free assets as investors contend with Fed actions and the potential ripple effects.

#### MFI Pulse: Divergence turns to convergence?



Source: Macquarie Fixed Income, Bloomberg for MFI Macro Pulse Index as of Oct. 31, 2018.

#### Citigroup® Economic Surprise Indices cross over



Source: Citigroup, Bloomberg as of Oct. 31, 2018.

# Operating in safe mode

## Wayne Anglace

Portfolio Manager | Philadelphia

## Adrian David

Credit Research | Sydney

## Craig Dembek

Global Head of Credit Research | Philadelphia

## Michael Wildstein

Head of Credit and Insurance Asset Management | Philadelphia

Global credit investors are faced with some mental gymnastics in the year ahead: Company fundamentals are strong, but we may face growing signs of recession. The stresses of 2018, especially ripple effects from the trade war under way between the US and China, could carry into 2019 and contribute to the end of the credit cycle at some point off in the distance. Or, the good news at companies could continue, driving credit spreads even tighter. Against this backdrop, we anticipate a coupon-like return for 2019 in both scenarios, because rates and spreads are in a zone where they could offset. The low-visibility environment prevails, and in that context, our strategy is to pick credits carefully, avoid blowups, and pay attention to liquidity.

**The good.** Coming off a year where earnings per share (EPS) growth at US firms was north of 20% (source: Bloomberg, Macquarie), it may seem nonsensical to be thinking about safe mode. The fallout from US strength and trade wars did create distress in some emerging markets, but all told, that was contained. Consumer and business confidence are incredibly high in the US, and earnings are growing faster than absolute debt levels, driving leverage slightly downward (not typical in a late stage of the cycle). Capital expenditures are finally showing

signs of life and could support upside in 2019. What's there to worry about?

**The bad.** We can't ignore the flattening yield curve, which tells a different story: one where Federal Reserve tightening in the US and incremental withdrawal of liquidity around the world may portend the end of this cycle, one way or another. Credit investors must reckon with a number of threats. The trade-war stresses between the US and China are likely to continue, posing a greater headwind to global trade volumes and rippling further into the emerging markets world via the supply chain and commodity prices. When coupled with global monetary plans to withdraw liquidity in the year ahead, these risks might start to affect the broader price of risk in markets.

**The possibility of ugly.** Pockets of stress from tighter financing conditions are evident, including pressure on homebuilders and materials in the face of higher mortgage costs. Meanwhile, leverage at companies is still high compared to historical trends. The biggest risk, in our view, is an old-fashioned recession, courtesy of monetary policy. If US financial conditions tighten too much, either because of a Fed misstep or because of unwanted inflation, we see volatility ahead. With tight valuations, there is little upside and more downside.

Investment grade investors have to hold two conflicting realities in their minds: Things are great, and it's time to be on notice. We're resolving this quandary by staying invested but moving incrementally more defensive. In our strategies, we're being vigilant about credit decisions, positioning toward neutral on duration, and paying close attention to liquidity.

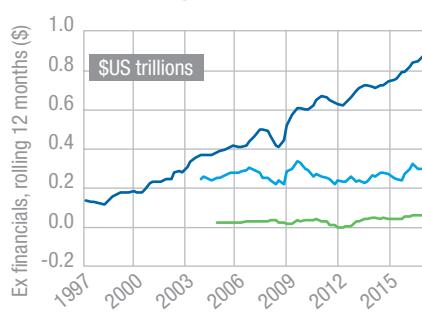
## Earnings, free cash flow growing faster than absolute debt levels

### Earnings growth

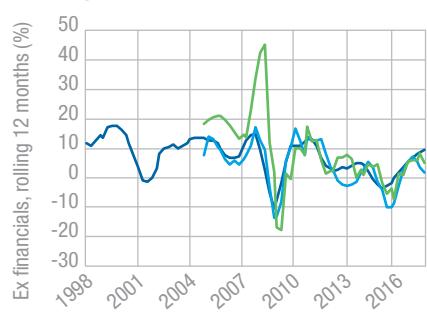


Source: Bloomberg, Macquarie.

### Free cash flow generation



### Sales growth



# Moderation in all things

## Adam Brown

Portfolio Manager | Philadelphia

## John McCarthy

Portfolio Manager | Philadelphia

High yield debt was a relative bright spot for fixed income markets in 2018. As we look at the year ahead, we're taking a stance of moderation across the board. US corporate fundamentals have been strong, and we expect that to continue. Valuations are rich, though not at all-time tight levels. Furthermore, spread differentials across credit ratings and maturities within the high yield market are tight. In this environment, we believe it's time for moderation in positioning, with balanced exposure across the risk spectrum. We also think this backdrop calls for careful selection aimed at avoiding negative credit events. In markets like this, we see little price upside, and negative events are more likely to drive performance differentiation.

## Fundamentals in good health

US companies are in a strong position, in our view. The tax cut legislation passed late in 2017 served to further boost company profits, driving double-digit earnings growth through much of 2018. Activity is also high on the consumer side. With a tight job market and unemployment the lowest it has been in decades, consumers are confident, and they are spending accordingly.

Leverage is trending lower at non-investment-grade issuers. For one thing, operating profits and cash flows have been growing faster than absolute debt levels, pushing leverage ratios down overall. Companies also benefited from tax incentives to repatriate cash held abroad, reducing their need to access funding.

Interest costs are also comfortably low. Thanks to widespread refinancing in recent years, many issuers have locked in lower rates and longer terms. Taken together, these fundamentals reflect the strong condition of high yield issuers, in our view, and point to a continued low default rate.

## High valuations, shifting technicals

Unsurprisingly, valuations are high across the market after this extended period of strong growth. Credit spreads are not at all-time tights but are rich generally by historical standards. We're also finding tight spreads between ratings categories and across maturities. In that sense, we don't see standout opportunities from an allocation perspective.

Technicals have also shifted, such that we're seeing incrementally less demand from abroad as the dollar has moved higher, while lower new issuance restricted supply in 2018. We believe those trends are likely to continue. However, it is noteworthy that we are seeing higher leverage in issuance connected to leveraged buyout (LBO) transactions, a typical trend late in the cycle. We are watching those metrics carefully, given that we do not feel there is adequate compensation for taking on incremental risk.

## Differentiated outlooks to continue

We're in a market that reacts to credit events and in which companies are punished for earnings misses. This scenario is markedly different from earlier in the cycle, when extreme liquidity around the globe was a rising tide that lifted all boats.

In 2019, we see a strong case for moderation in positioning. Our stance is duration neutral, and we are mindful of rate-sensitive sectors and the early signs of tighter credit conditions that accompany this stage of the monetary cycle. But otherwise, success in this market is a credit-by-credit process with emphasis on avoiding negative credit events. By all measures, we are late in the cycle, and we believe there is little to be gained from extreme positions on the risk spectrum.

# Rising rates slow the supply in mortgage markets

## **Ion Dan**

Portfolio Manager | Philadelphia

## **Brian McDonnell**

Head of US Fixed Income | Philadelphia

## **Stephen Juszczyszyn**

Portfolio Manager | Philadelphia

## **Nael Wahaidi**

Analyst, Trader | Philadelphia

With bond yields rising in 2018, issuance in mortgage markets has moderated. A lower supply and solid fundamentals, however, support mortgage-backed securities (MBS) into 2019.

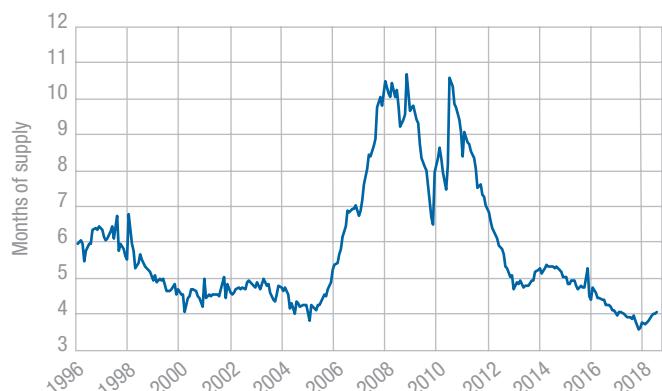
In US residential markets, potential home buyers are faced with a combination of challenges, including the highest mortgage rates in seven years, lower affordability, conservative lending standards, and tax changes that limit mortgage interest deductions.

In commercial markets, with cap rates steady at a low level, trends in specific property types play a key role. Industrial properties benefit from the growth in online commerce and demand for distribution centers. Multifamily properties and retail present specific opportunities and challenges that we expect to extend into 2019.

## **US housing market: Limited supply of homes for sale continues to support prices**

According to S&P CoreLogic, US home prices rose 5.5% year over year as of August 2018, the slowest growth rate in nearly two years. With a limited supply of homes

## **Single-family housing supply low**



Source: S&P CoreLogic.

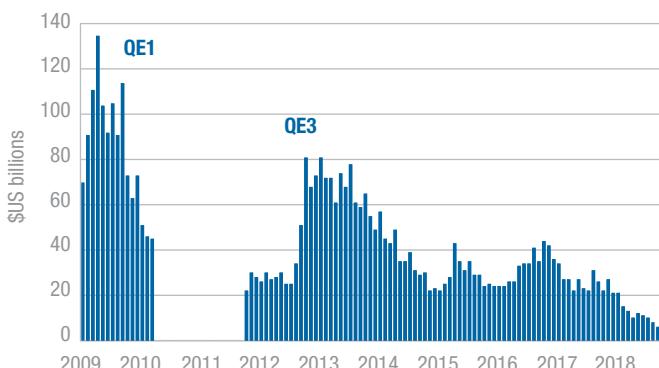
available for sale and strong labor markets, we expect further moderation in prices to a 3% to 4% pace over the next year.

Residential mortgage credit availability has improved, but lending standards remain conservative. As a result, purchase activity has increased sensitivity to interest rates. We expect slower housing turnover and mortgage origination to become a headwind to economic activity.

## **Limited effects from Fed's balance sheet normalization**

One important implication for agency MBS is the Federal Reserve — which amassed \$1.8 trillion of MBS on its balance sheet during its quantitative easing (QE) programs. The Fed began the process of balance sheet normalization in late 2017, which initially led to questions of the potential impact. So far, the MBS runoff from the balance sheet appears to have limited impact on mortgage spreads. The flow effect of reinvestment purchases had been marginal

## **The Fed's net MBS purchases during QE**



Source: Federal Reserve Bank of New York.

relative to the average monthly issuance of \$114 billion. We expect that the Fed's outstanding balance of MBS will only gradually be paid down with refinancing activity at low levels.

The general outlook for agency MBS is favorable in our view, supported by balanced supply/demand and low prepayment risk. Duration extension is limited, with the asset class at 5.5 years, but the longer duration profile suggests that MBS return sensitivity to any further upward rate shocks has been magnified. We continue to use a barbell approach (a strategy that generally invests in short-term and longer-term securities, steering clear of intermediate-term, which can be useful in a rising rate environment), focusing on seasoned higher-coupon MBS coupled with lower coupons.

### **Challenges in the nonagency residential markets**

Nonagency residential mortgage-backed securities (RMBS) markets remain challenged by regulation and by competition from agency securitization. Pre-2008 legacy RMBS supply is shrinking. The good news is that private capital is gradually playing a larger role. For 2018, as much as \$16 billion of credit risk transfer (CRT) securities were expected to be issued, representing the emergence of a new secondary market (source: Bank of America Merrill Lynch, Bloomberg). These trends are expected to slowly expand alongside issuance in prime jumbo mortgages, expected to reach \$24 billion in 2018 (source: Bank of America Merrill Lynch, Bloomberg), and thereby broaden the investment universe.

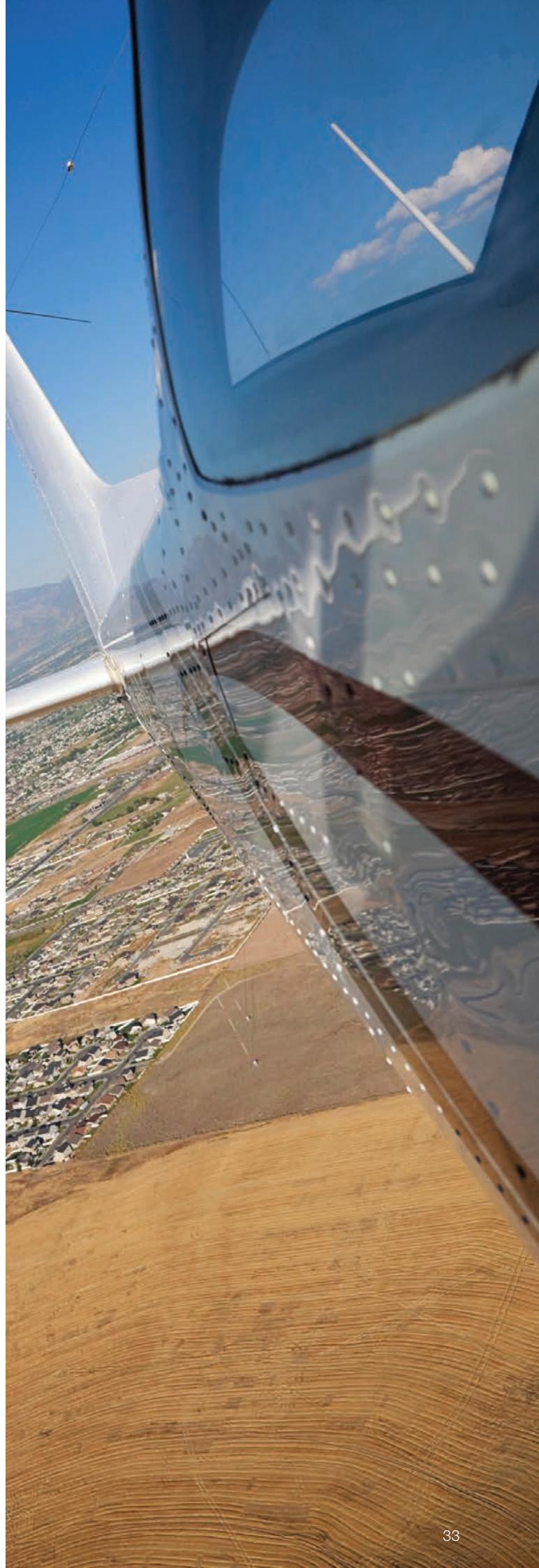
The outlook for nonagency RMBS is favorable in our view, given the strong credit quality of underlying loans and attractive risk-adjusted spread levels. We continue to maintain exposure in the asset class and look to add opportunistically.

### **Opportunities in commercial real estate**

Commercial real estate fundamentals benefited from low interest rates and accommodative financing. Net operating income across most property types has moderated as rent growth has slowed, reflective of the later stages of the real estate cycle.

Valuations in commercial mortgage-backed securities (CMBS) are currently mixed across the quality rating spectrum. The CMBS credit curve remains historically flat across AA through BBB ratings. Investors have been driven to lower-rated CMBS for the incremental spread advantage versus AAA-rated CMBS given the low yield environment. CMBS credit spreads appear fair in our view, given the underlying loan quality and structural credit enhancements, but leave little room for additional spread tightening. CMBS AAA securities may offer incremental spread tightening opportunities while affording investors an opportunity to migrate up in credit quality.

We continue to favor high-quality CMBS opportunities comprising seasoned underlying loans with conservative underwriting characteristics. We believe the current commercial real estate credit cycle will remain stable through 2019 and may benefit from the 2018 US tax cut.



# Could the municipal market see a silver lining in 2019?

**Joe Baxter**

Head of Municipal Bonds | Philadelphia

The municipal bond market is coming off a transition year in 2018, in which the new US tax law had the effect of reducing both supply and demand in the market, the lack of any infrastructure legislation was a disappointment, and rising interest rates continued to have an impact. While some of these challenges will likely continue — we anticipate supply and demand to stay lower, and short rates to continue to rise — we believe some mitigating factors could improve the environment for municipal bonds in 2019.

## Effects of the new tax law

The Tax Cuts and Jobs Act of 2017 had several implications for the municipal market in 2018. While the tax law dropped the corporate tax rate significantly to 21%, the top rate for individuals declined only modestly from 39.6% to 37%. But because tax preference is the value proposition for municipal bonds versus taxable bonds, lower tax rates tend to diminish this value. As a result, the tax law had a negative effect both on municipal bond demand and on returns.

Nonetheless, we think that after individual taxpayers assess the net effect of some tax law provisions on their tax returns — notably the elimination of state and local tax (SALT) deductions and capping of property tax deductions — there may be a reckoning leading some investors to return to municipal bonds. If there is any effect on demand, we would expect to see it after the first quarter of 2019.

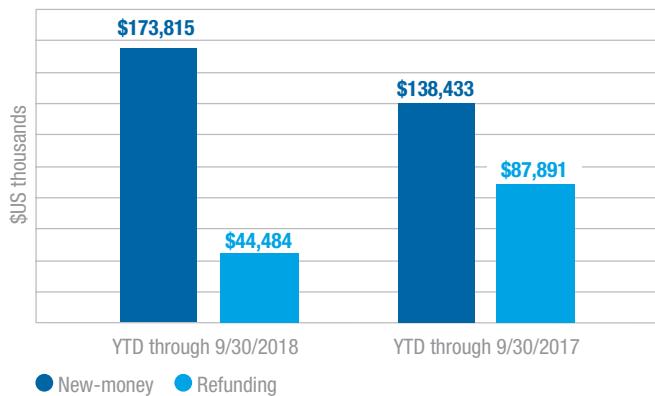
## Advance refunding aspect revisited?

Another aspect of the tax law that lowered new-issue supply in 2018 was the law's prohibiting the practice of issuing advance refunding bonds to refinance older, more costly debt. The advance refunding method had allowed municipalities to pre-refund old debt with new debt — but in doing so, permitted two issues for the same project to remain outstanding until the first call date of the original issue. Viewed as a tax loophole, this resulted in the advance refunding prohibition.

However, this effect has been disproportionate on municipal bond issuance in the past year. As of Sept. 30, 2018, data from The Bond Buyer show overall municipal bond supply was down -15% versus the year before. But of that amount, new-dollar issuance was up 26%, while refundings were down -49%. The chart below shows the impact on advance refunding bond issuance in 2018.

Despite the advance refunding elimination, an influential public interest group, the Government Finance Officers Association, has indicated its resolve to get the provision reinstated. We think the group, which in the past has represented state and local interests to Congress, may find a sympathetic ear in the incoming 116th Congress.

## Advance refundings have dropped since the tax law



Source: The Bond Buyer.

## Infrastructure financing

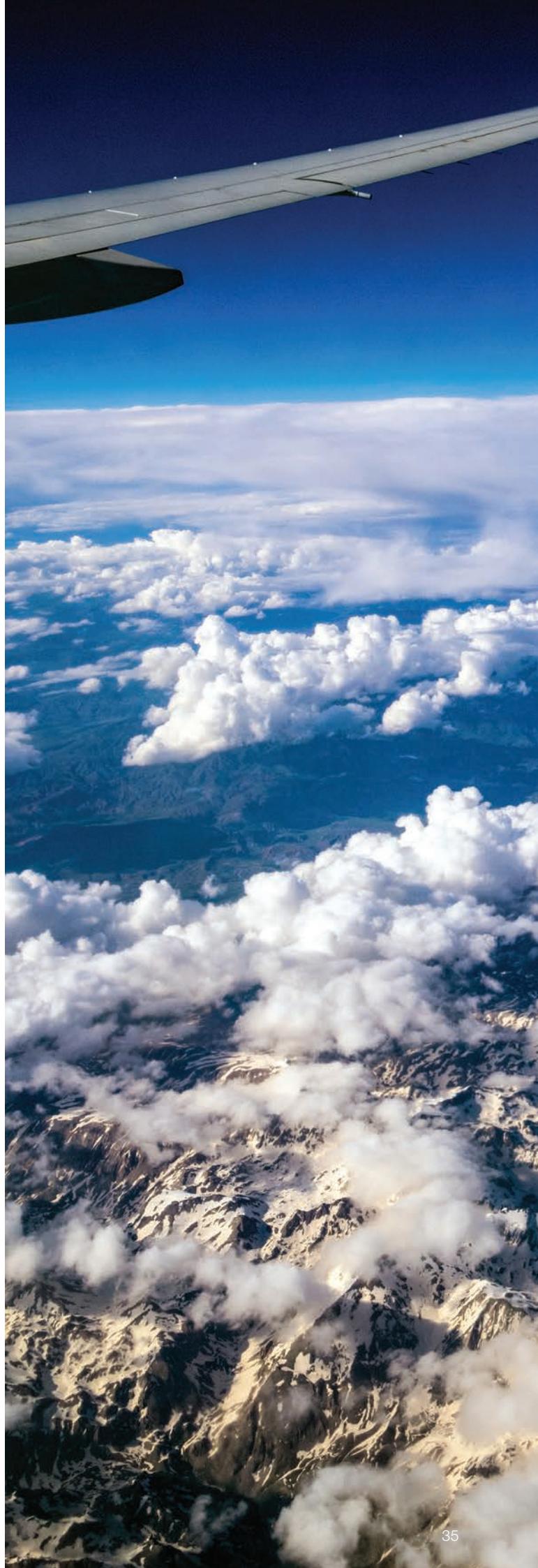
Another area important to municipal bond market watchers is the need for infrastructure investments in the US. However, hopes were dashed when legislation on federal funding of infrastructure projects failed to materialize in 2018. We think there is a possibility that the new 116th Congress could be open to such legislation, at least to help fund the types of projects undertaken by municipalities, such as roads, bridges, and airports. Because these types of projects are so essential and currently needed, we believe that supply of this type of municipal bond issue will not be adversely affected, regardless of whether federal legislation comes about.

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### Rising rates remain the big story

Ultimately, 2018 was about rising interest rates more than supply and demand. The municipal bond market performed poorly as a result, on both an absolute and relative basis. Through Sept. 30, 2018, the municipal bond market, as measured by the Bloomberg Barclays Municipal Bond Index, returned -0.40%. However, this compared favorably to most other taxable bond indices except for high yield corporate bond indices. In our view, short rates are likely to continue to rise, but in light of the Federal Reserve's projections of at least four more hikes by the end of 2019, we are cognizant that the Fed remains dependent on data such as unemployment figures and longer-term trends in its decisions on normalizing monetary policy. We are also aware that, historically, long interest rates began their decline prior to the Fed's discontinuing rate hikes.

We anticipate that the municipal market should face some of these same technical issues in 2019 as the Fed continues to normalize rates, but perhaps the biggest surprises will emerge from the 2017 tax legislation and the new 116th Congress.



# After the tipping point

**Mansur Z. Rasul**

Emerging Markets Credit Trading | Philadelphia

The year 2018 proved to be a tipping point for emerging markets (EM) debt as global headwinds converged on the asset class. We expect those dynamics to continue into early 2019, with the short-term fates of the US and China, and their relationship, driving EM asset prices in the near term. But the news isn't all bad. Valuations are starting to look attractive to us, while underlying positive fundamental trends appear intact across many EM countries. Some political risks have eased incrementally. All told, this could prove a good entry point for long-term investors.

## The big three: Rates, the US dollar, and China

As US growth momentum outpaced global peers in 2018, US rates and dollar strength followed suit. When we consider the key macro pressures on EM assets, higher interest rates and a higher US dollar are two out of three.

China's growth, meanwhile, has eased incrementally as the country undertakes structural deleveraging, dampening demand for commodities and other value-chain inputs. Trade wars with the US pushed conditions to the tipping point, lowering potential global trade volumes and heightening uncertainty. Add in a slower China and we're at three out of three.

We see the possibility of these three factors moderating in the year ahead. In the US, we anticipate further rate hikes (and a higher US dollar), but conflicting signals, including trade-related volatility and a potentially inverted yield curve, could complicate matters. China is balancing conflicting aims of its own. It will likely continue to pursue structural reforms but also has incentives to stimulate in the face of a trade war.

## Aftershocks and improved fundamentals

The damage of 2018 lay partly in the suddenness of these forces. But we do see some positive outcomes: Some of the most structurally imbalanced countries — Argentina, Turkey, and South Africa — confronted and improved a number of their fundamental issues. As always, politics play a sizable role in EM dynamics, and we also saw marginal improvement in some of the political uncertainties of 2018. Trade deals between the US and South Korea, Mexico, and Canada appear close to resolution. A busy election cycle has closed largely as expected, although presidential elections of a far-right populist in Brazil and a far-left populist in Mexico raise divergent concerns.

Broad EM valuations may have retreated too far. Fundamentals are in better shape than they were 10 years ago, and the market has grown significantly in breadth and depth since the last global downturn. We believe the asset class is still attractive on a long-term basis — although currency risks and other risks associated with emerging markets must always be taken into account — and these developments may just turn out to be a good entry point.

## Macro drivers converge on EM

### FX is driving broad EM sentiment

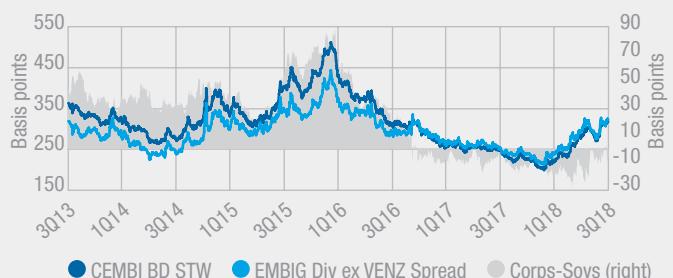
J.P. Morgan Emerging Markets Currency Index (Spot)



Source: J.P. Morgan, as of September 2018. CEMBI BD is the J.P. Morgan Corporate Emerging Markets Bond Index Broad Diversified. EMBIG is the J.P. Morgan Emerging Markets Bond Index Global.

### Hard currency part of EM relative value

EM hard currency sovereigns (ex Venezuela) versus EM corporate spreads (as of September 6, 2018)



# Demand for US private debt continues to grow

**Alex Alston**

Co-Head of Private Placements | Philadelphia

**Frank LaTorraca**

Co-Head of Private Placements | Philadelphia

Private placements currently average 30% of US life insurers' bond allocations (source: Barclays Research), while non-US and other types of insurers have increasingly been considering privately placed debt (classified as all nonpublic debt) to complement traditional investment grade holdings in their fixed income allocations. Issuance has generally been elevated, but demand in the market has been strong enough in recent years to create a technical imbalance, with deals coming to market often oversubscribed by as much as three or four times.

Large life insurers have a long history of accessing the US private placement market, in large part because these securities generally have characteristics well suited to insurers' investment programs — including incremental yield, diversification benefits, capital efficiency, and structural protections that enhance recoveries. With the low yield environment of recent years and increased regulatory demands, a broader set of insurance firms has been seeking private placements for these characteristics and to meet the future funding requirements of liabilities.

This is among the reasons we find strong agent relationships matter more than ever in procuring private placements allocations sufficient to build a portfolio. Agents don't need to show many deals to the entire market in order to garner sufficient bids and fill out their books. And for broadly syndicated deals, the differences between favorable and unfavorable allocations can be meaningful.

Issuance in the market has remained diverse. There has been a healthy supply of infrastructure transactions for some time, and an even healthier demand for those deals. We have also seen a rise in nontraditional credit tenant

leases, many of which are land-only deals and may at times also have a real estate aspect that complicates the ability to simply underwrite the lessee as a "look-through" corporate credit. Utilities and education also continued to be well represented; both sectors offer significant duration that is attractive to investors with long investment horizons and the need to match long-dated liabilities.

Ultimately, we expect the US private placement market to continue its controlled growth on the supply side, moderated by the structural discipline of industry incumbents. Spreads should continue to ebb and flow with the credit cycle, similar to the experience of public credit markets. While spreads currently remain somewhat compressed relative to prior years, the covenants and structural benefits, hallmarks of the private placement market, remain intact. Interest from nontraditional investors that have not yet accessed the market may wane in some environments, but we expect strong demand to continue from the incumbent investor base, as well as from new investors that have gotten a taste of the benefits afforded by the US private placement market.



# Real assets and alternatives

As 2019 dawns, some of the more traditional asset classes such as equities and fixed income may be late in the cycle, leading some investors to focus more on investments in physical assets like real estate, infrastructure, commodities, and natural resources. Here, we examine a wide range of real assets and alternatives, and what they might bring for 2019.

In this section:

- ▶ Real assets perspectives
- ▶ Inflation perspectives
- ▶ Global listed infrastructure
- ▶ Global infrastructure debt
- ▶ Energy and natural resources
- ▶ Global listed real estate
- ▶ Direct real estate
- ▶ Direct infrastructure

# Now more than ever?

As we enter 2019, inflation has been starting to pick up around the world, with prices rising in the US, across the European continent, and in many emerging markets. Meanwhile, the US bull stock market has entered a second decade, a record length, and the economic cycle in several markets looks fairly extended. Amid that backdrop, 2019 might be a time when many institutional investors take a fresh look at the role of real assets in a diversified portfolio.

There are several reasons investors often consider exposure to “real asset” classes, which include tangible or long-lasting physical assets, as well as inflation-linked bonds in many definitions.

First, investments in physical assets like real estate, infrastructure, commodities, and natural resources may provide absolute and risk-adjusted returns that exceed those of many equity and fixed income investments. That is, they’re often attractive in their own right, on an absolute basis. Second are the often-touted diversification benefits, as many of these asset types are known to provide returns with a tendency toward low correlation to traditional investments.

Many real asset classes also generally share inflation protection as a common trait. The nature and degree of that inflation protection differs considerably by asset type — a full review of which requires longer discussion than fits in this space.

Investors who deploy alternative and real assets often face a wide range of considerations that are unique to each strategy, as they seek to construct ideal portfolios that match institutional need with specific investment outcomes. With this in mind, we offer a brief overview on global inflation, followed by our experts’ reviews and outlooks for a number of these unique asset categories.

## INFLATION PERSPECTIVES

### Inflation: Reading the tea leaves on asset prices

There has been much debate about why inflation has not been more pronounced since the 2008 global financial crisis. One perspective about this phenomenon, shared within our multi-asset team, is that wage growth has merely been delayed by the massive dislocations that resulted from the crisis and recession, as well as by more structural factors such as demographics, productivity, and technology. The case can easily be made that financial stimulus, strong economic growth, and the introduction of tariffs are relatively new in this recovery, in turn making a stronger case for inflation yet ahead.

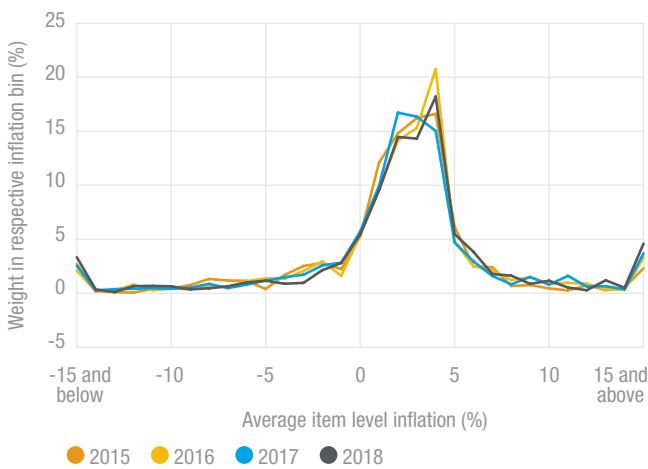
Some recent economic studies claim to show evidence that technology innovation might have been effective in dampening inflation in recent years — something our own in-house research also generally bears out. However, there are also signs that this technology effect could peter out, while the overheating effect might take over and lead to a more pronounced rise in inflation. With this in mind, we offer a look at three charts that help examine what US

inflation data could be showing or hiding. We chose to focus on US inflation because, with the US leading the recovery cycle, it’s also leading, in our view, the inflation cycle.

The advent of ever-increasing price transparency driven by the Internet and mobile technology might have depressed inflation rates globally since 2008. As long as these technologies are applied to new markets (from retail to movies, taxis, apartment rentals, and so on) there is a case that inflation could remain low or even negative in some items of the consumer basket.

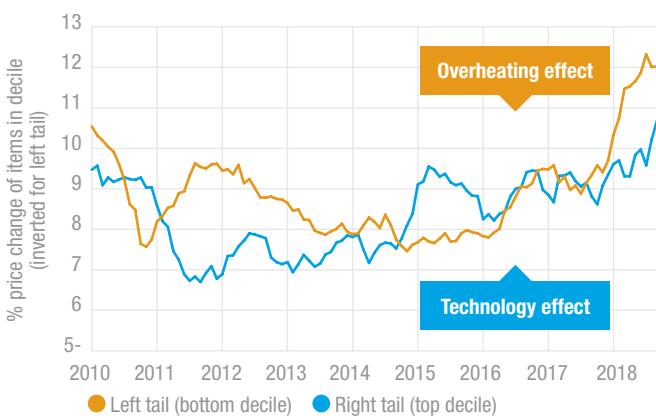
However, we caution from looking at inflation in the rear-view mirror, as many of the underlying forces that led to subdued inflation in recent years might now come to an end, while others that lead to higher inflation, like tariffs or increasing wages, might eventually begin. Only time will tell if the inflation theme will play out in 2019, but absent a recession, our research indicates that now might be a good time to prepare for higher inflation rates than we have seen in the past decade.

## Personal consumption rates show an overall subdued effect



Source: Macquarie, US Bureau of Economic Analysis.

## Does a closer look show overheating?



Source: Macquarie, US Bureau of Economic Analysis.

## Federal Reserve underlying gauge points to inflation pressures



Source: Federal Reserve Bank of New York, Macquarie. Data from 1996 to 2018.

A view of the average item-level inflation distribution in the Personal Consumption Expenditures Price Index (PCE) basket shows both left and right tails (price increases or cuts of >15%) have been rising. For example, in 2016, 3.3% of the goods in the PCE have experienced price increases of 15% or more, while in 2017, there were already 3.7% rising 15% or more. Since both tails were rising, they partly offset each other, leading to only a subdued increase in overall inflation thus far.

While the tails in the first chart show both have been rising, more recently there is a significant pickup of the right tail, which could be interpreted as first signs of overheating. For example, as of September 2018, the 10% items with the biggest price increases rise by 12% year over year or more, whereas three years ago, the price increase was only 8%, and thus even less than the 9% price decrease of the items with the largest price cuts. Our reading of this chart is that since late 2017, overheating effects, maybe driven through the combination of a tight labor market, strong economic growth, and the threat of new tariffs, have gained much more momentum, outpacing the steady increase of the technology effect.

Survey-based indicators, which typically are leading inflation indicators, also point to a bigger rise in prices than we have seen in recent years.

For example, the New York Federal Reserve's underlying inflation gauge (which captures sustained movements in inflation from information contained in a broad set of price, real activity, and financial data), recorded an all-time-high in 2018 (source: Bloomberg). Our research indicates that this might be a leading indicator for US core inflation, which, if historical correlations hold, would suggest a rise closer to 3%, while it has hovered around 2% for the last seven years.

**Juergen Wurzer**

Portfolio Manager, Global Multi-Asset Solutions Team

# Even with inflation, infrastructure asset demand can persist

**Brad Frishberg**

Macquarie Global Listed Infrastructure | New York

Global equities historically have benefited from rising inflation, although most companies face limits on how high they can increase prices. Infrastructure companies provide essential products or services (such as electricity, gas, water, transportation) that are necessary to support economic and social activity. Because services provided by infrastructure assets satisfy basic human needs, demand for them persists even when a recession or significant downturn hits, offering the potential for stable, inflation-linked income, portfolio diversification, and capital growth. These traits may make listed infrastructure a relatively defensive asset class for investors worried about an overheating economy and stretched valuations. We believe concerns about economic conditions and other factors could trigger a shift in sentiment that may broadly favor listed infrastructure in 2019.

## Potential appeal in an inflationary environment

While inflation in most countries is currently relatively subdued, the potential for higher inflation arising from central bank monetary policies to help stimulate economic growth over the past few years is a longer-term risk for all asset owners. Infrastructure appears relatively well positioned in a rising inflation environment as many assets can charge prices that are wholly or partly linked to

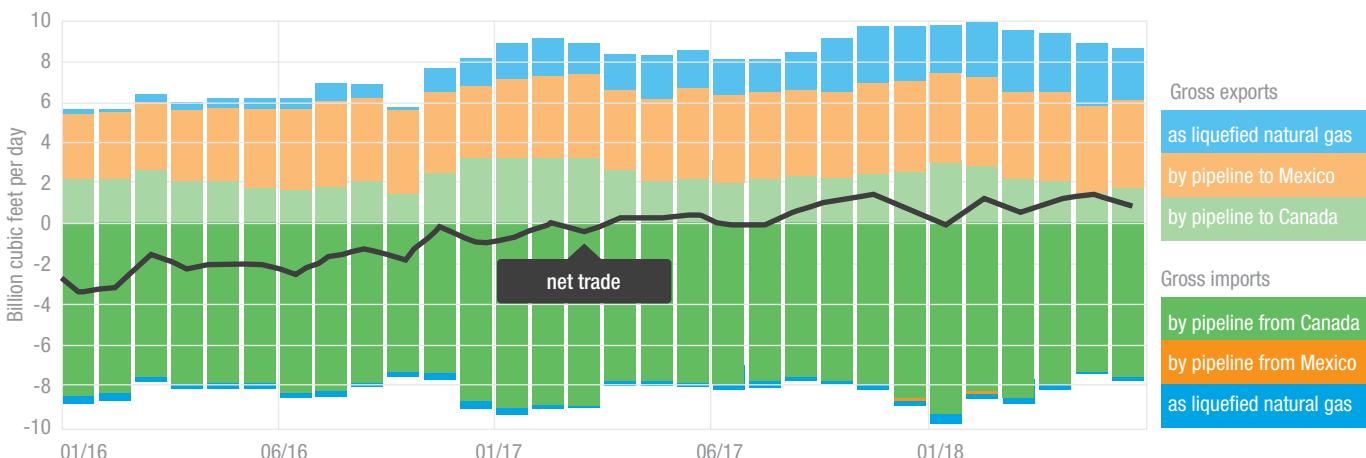
inflation. For example, one of the publicly traded Australian toll-road operators is contractually obligated through a government concession to increase tolls at one of its toll roads by the greater of 4.5% or the annual growth in the Consumer Price Index (CPI). (Source: Macquarie.)

Higher inflation may make infrastructure assets more appealing relative to many other listed equities as some companies in good regulatory regimes are often able to generate a revenue stream that grows at least in line with inflation. This defined and automatic ability to pass through inflation to customers is in contrast to the situation faced by companies in competitive markets, which may find that as their costs rise with inflation, competitive pressures prevent them from raising prices and hence their profit margins and earnings may be squeezed.

An example of inflation-linked assets are water utilities. Water networks tend to be monopolistic in nature, often earning a regulated return or long-term contracted revenue stream that is linked to inflation. This could provide long-term protection as the real capital value is protected. In addition, revenue is linked to inflation, supporting cash flows and dividends. We believe UK water companies may be among those primed to benefit the most as investors have deflated their stock prices amid expressed desires by the Labour Party to nationalize their assets.

## The US shifts to natural gas exporter

Monthly natural gas imports and exports



Source: US Energy Information Administration, Natural Gas Monthly.

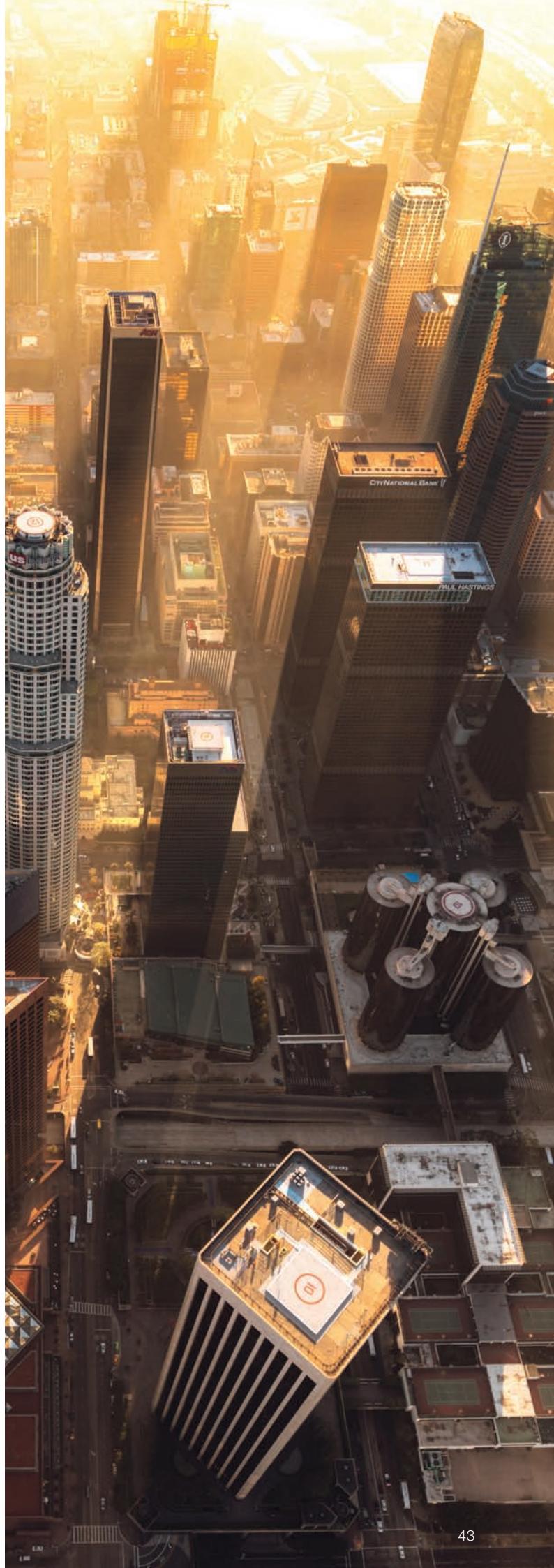
Infrastructure appears relatively well positioned amid rising inflation, as many assets can charge prices wholly or partly linked to inflation.

### Opportunity in renewable energy

We also see select pockets of opportunity tied to specific regional developments. We remain positive on a number of renewable energy companies in emerging markets and elsewhere. Countries continue to push forward with plans to clean up their power production, most notably in China, which is in its fifth year of its “war on pollution.” In the summer of 2018, for example, the government released a long-awaited pollution action plan for 2018 to 2020, which requires a handful of populated regions to cut their coal consumption by 10%.

In the US, the country’s evolution from a substantial importer to exporter of natural gas is driven in part by this secular global shift toward cleaner energy. For the first half of 2018, net natural gas exports from the US more than doubled the average daily net exports during all of 2017. As illustrated in the chart on the previous page, the US, which became a net natural gas exporter on an annual basis in 2017 for the first time in almost 60 years, has continued to export more natural gas than it imports for five of the first six months in 2018 (source: US Energy Information Administration).

The airports, seaports, roadways, and energy and water suppliers that comprise the infrastructure asset class are essential to facilitating international trade, growing the global economy, and creating prosperity for people around the world. Maintaining those essential infrastructure assets and building new facilities to meet the ever-expanding needs of the global economy will require tens of trillions of dollars of new investment in the coming decades. That need for capital creates, in our view, a compelling long-term growth opportunity for infrastructure investors.



# Infrastructure debt: Growth and maturation

**Kit Hamilton**

Macquarie Infrastructure Debt Investment Solutions | London

**Tim Humphrey**

Macquarie Infrastructure Debt Investment Solutions | London

For as long as there have been privately owned infrastructure assets, there has been infrastructure debt. With distinctive characteristics such as high tangible asset value and stable and noncyclical cash flows, infrastructure assets can support significant amounts of debt, often more than 75% of the project capital. However, it has only been in the past few years that infrastructure debt has become a distinct asset class accessible for investment by institutional investors.

While economic conditions and governments vary, there continues to be a consistent need to invest in infrastructure projects to support the economies of countries around the world. McKinsey estimates that \$US49 trillion of infrastructure spending would be needed between 2016 and 2030 to keep up with projected GDP growth.<sup>1</sup>

## Infrastructure debt demand

Annual unlisted debt fundraising (2008–2017)



Source: 2018 Preqin Global Infrastructure Report.

## The importance of local knowledge

*UK and Europe remain attractive despite Brexit uncertainty*

The UK government has committed to invest more than £100 billion by 2020–2021 alongside private capital as part of a £483 billion project pipeline.<sup>2</sup> Combined with the required capital expenditure in utilities and expected activity across transport, the renewable energy market, and

## ENERGY AND NATURAL RESOURCES

# Trends in natural resources could shape the investing landscape

**Samuel Halpert**

Global Natural Resources Equity | Philadelphia

**Geoffrey King**

Global Natural Resources Equity | San Antonio

If it can be mined, cut, collected, or processed, natural resource investors can invest in it. Our investment universe is broad, but across industries a common thread is the overarching supply and demand outlook. Either demographic trends point to increasing demand for certain resources (growing populations and rising incomes, for example), or the inherent scarcity creates a high perceived value for the resource, such as copper.

As we enter 2019, we see both cyclical and secular trends in natural resources that will shape the investment landscape. Nowhere is this more apparent than in energy, which represents approximately 60% of our exposure. Beyond the longer-term tug of war between traditional fossil fuels and renewables lie both shorter- and medium-term supply dynamics that we believe should support the sector across the value chain for several years. Our energy holdings can also be delineated into sizable investments in natural gas extraction, wind, liquefied natural gas (LNG), traditional shipping, LNG shipping, refining, and exploration and production. In each case, companies either show the ability to reinvest cash flows at higher rates of return,

public-private partnerships (PPPs), there is no shortage of investment opportunities.

While investment activity in Europe varies across the continent, a common theme is the stable pipeline. This is driven by government policy on public versus private financing, renewable energy, and asset divestments. Like the UK, there will be activity across the renewable energy market, PPPs, and, in addition, the transport sector.

**Americas:** Activity in the US will continue to be focused toward energy infrastructure. While there has not been as much activity in the non-energy infrastructure sectors, we see momentum for new and innovative roles that private infrastructure debt can play to help meet the investment needed in transport and social infrastructure sectors.

Many US and global infrastructure debt investors have also started to shift their gaze toward Latin America, particularly countries such as Mexico, Chile, Colombia, Peru, and Uruguay. Long-term political instability, pricing for sovereign risk, and the need to develop local knowledge to make informed investment decisions remain some of the barriers to broader market acceptance.

**Australia:** Greenfield projects, particularly in roads and renewables, will likely continue to drive activity as the country looks to manage its growing population's increasing need for infrastructure. In our view, rebalancing of the energy landscape and refinancing bank loans into longer-dated institutional debt will continue to shape the market as borrowers and governments look to remove refinancing risk.

1. Source: McKinsey Global Institute June 2016, "Bridging global infrastructure gaps."

2. UK National Infrastructure Delivery Plan 2016–2021.

have favorable asset positions, or offer a significant value proposition.

For example, in crude oil, we see significant issues from major producers such as Venezuela and concern about Iran due to sanctions. And trends are positive on demand — some from expected sources such as China and others from underappreciated areas such as India. These trends could support higher oil prices into 2020. We're also bullish on certain North American shale plays. We note some big producers are focusing their investment there — and generally speaking we think that investment is well placed.

We also have significant exposure to copper and agriculture. One base metal that appears appealing as we enter 2019 is copper, which struggled in the latter part of 2018 due to increased trade tension between China and the US.

China accounts for about 50% of worldwide demand for copper, according to Reuters (as of October 2018), and the Chinese economy appears strong for the near to middle term, firming up foundational demand for the metal. In our

## Sector focus: Renewable energy

The global opportunity for renewable energy continues to be a major theme in the market as it becomes an increasingly competitive and attractive source of generation with falling technology costs and efficiency improvements. Countries are at varying stages of adoption and have taken different approaches to their rollout and use of renewable energy.

We expect to see innovative financings and consolidation of portfolio ownership in established technologies including wind and solar, knowledge sharing leading to new transactions across regions such as offshore wind into the US, and increasing comfort with newer technologies like battery storage.

## Increasing product choices for investors

As infrastructure debt has become more widely accepted as a distinct asset class, it has brought with it a rapidly growing menu of investment products for investors to choose from. It has given investors the ability to select a product and manager that aligns with their investment objectives, including risk and return appetite, for the asset class. With this, however, come challenges as investors try to navigate among products.

Infrastructure debt managers can play an important role in enabling investors to access and analyze investments, and investors will need to find a manager with broad subsector/geographic expertise who can find the best opportunities to deploy capital and achieve a private debt premium. In the year ahead, we expect to see more managers and more choice of products, with a pipeline of infrastructure debt opportunities to satisfy the demand of a growing market.

view, those conditions merit increased scrutiny as there might be potential to find copper-based securities that are undervalued because of the short-term reaction to trade rhetoric.

We take both top-down and bottom-up views as investors, with a strong value orientation — and remain relatively agnostic about the short-term direction of the price of the underlying commodity.

Currently, our emphasis is on companies domiciled predominately in North America, although many current holdings that are US-based generate the bulk of their EBITDA (earnings before interest, taxes, depreciation, and amortization) internationally. There is a wide array of global, publicly listed companies across our investment universe — spread across a diverse mix of natural resources. As we look to 2019, we continue to take a value-oriented, benchmark-agnostic approach, with a focus on identifying the most compelling investment opportunities globally.

# Listed real estate markets show resilience, maturity

**Bob Zenouzi**

Real Estate Securities and Income Solutions | Philadelphia

Real estate investment trusts (REITs) came under pressure in recent quarters, as rising US interest rates led to underperformance relative to other equity assets during a stretch of 2018. However, continued US economic strength generally led to stabilized yields and positive earnings surprises in sectors such as retail, which more recently appeared to buoy REIT markets.

For some time, it could be said that REIT investors are being “paid for buying growth” — that is, more likely to post gains when critical pockets of earnings strength in specific sectors can be successfully identified. Strong-performing sectors such as residential REITs in Germany and Sweden, and manufactured homes in the US, are examples of areas recently driving growth within REIT markets. Asia, where housing continues to be expensive, is a region where we see notable weakness, and our strategy is well underexposed there.

## Late-cycle security selection holds key

It has been our team’s experience across various market cycles that real estate securities often can perform soundly in a steadily rising rate environment when there’s also economic growth. So a key barometer of the year ahead is clearly the economy, in our view. As global REIT investors, we continue to monitor late-cycle economic phenomena such as US wage growth that could signal higher inflation or the potential for widening credit spreads, and sharper interest rate spikes that could have negative effects on REITs in general. At this writing, however, we see US economic strength continuing. As investors, we recognize the lateness of the cycle, and how it underscores the need for a conservative approach, with emphasis on stock selection. For stock pickers, it’s become a matter of using the precision of a rifle rather than a shotgun approach at this stage of the business cycle.

## Global opportunities

Globally, our strategy is underweight in Asia, as noted. We see Hong Kong as the world’s most expensive real estate market by many measures, but especially due to its housing market. Sydney housing, also expensive, has taken a turn to the downside. We have zero exposure in China, which has an obvious debt problem in our view. Despite deleveraging and re-leveraging economic cycles, the government is not always able to slow its real estate

markets, and the risks inherent to oversupply and the debt as seen in China is a phenomenon that is broadly true for us across emerging markets.

Europe still has the benefit of low interest rates, compared with the US, and while European REITs have trailed US REITs, we continue to find parts of its residential markets attractive in particular.

The US by contrast has the highest economic growth currently, and we are monitoring our US investment mix, remaining opportunistic and discriminating. Sectors like self-storage in the US are negatively affected by oversupply, while US retail continues to grapple with headwinds from the ongoing shift to ecommerce. We do, however, carefully seek opportunities that may emerge via the transformation of retail. Nascent trends such as cashier-less stores are clearly worth monitoring, in our view, and speak to the validity of the “bricks and clicks” models that blend online and physical business presence. New mixed-use concepts also could present potential opportunity, as REITs turn to such businesses as hotels and call centers to transform former retail or industrial properties.

## Private capital impact

A notable story for REITs in recent years has been the strengthening capital flows from private equity investments. Private capital flows have often helped keep cap rates stable, even in the face of rising interest rates. (Cap rates, or capitalization rates, reflect a property’s return on investment based on its generated income, calculated as net operating income to market value.) The effect can be twofold: A strong flow of private real estate investments in a market could inhibit publicly traded REIT performance at times. However, it also could alter the overall dynamics of a market in other ways that may benefit the larger real estate market to the upside.

Less-liquid private equity investments require a long view, and with enough private capital in a given market, we believe that longer time horizon has the potential to reduce volatility. One example can be seen in London, where Brexit has already caused uncertainty. However, significant privately sourced inflows from, for example, Singapore and the Middle East, have helped create investment in office and residential, improving supply and demand in the market. Similar effects could play out elsewhere in Europe and can help buoy our confidence in those sectors that we may still view as secular growth stories.

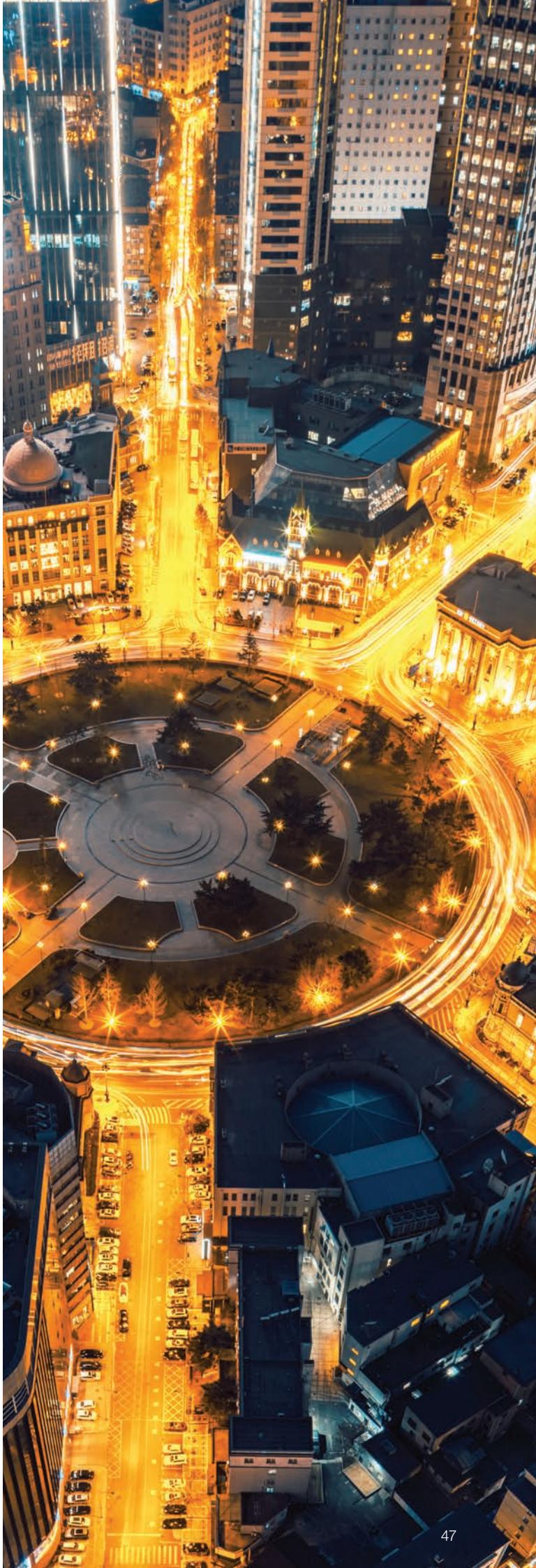
We believe fewer broad trends can be easily exploited in the REIT market, although secular growth stories exist.

Residential is one of these sectors. In the UK, institutionalization of the rental market is only a fraction of other big real estate markets. We continue to find apartment markets in Germany and Spain (still coming off a bottom) attractive. Cell towers and data centers both generally continue to grow apace, and are examples of more thematic, longer-term growth sectors.

Private capital also has helped encourage growing specialization in real estate markets. University endowments and private equity funds have helped spur investment in the urban core, or innovations such as mixed-use operating models for shopping centers and struggling malls. Today, specialty REITs are growing, and while innovation can be net positive, not every development team or REIT company has the expertise to oversee or guide each business model to success, which calls for careful analysis and appropriate selection.

#### **What to monitor**

We believe fewer broad trends can be easily exploited currently in the REIT markets, in terms of seeking performance. Secular growth stories exist, but we think it's also important for investors to recognize the late cycle. We remain upbeat about REITs' ability to perform up to par in a gradually rising rate environment, but we are also cautious and selective, as global REIT markets become increasingly dynamic.



# Tech-driven change creating value amid late cycle symptoms

**Frank Schickram**

GLL Real Estate Partners

A member of Macquarie Group | Munich

With multiple economists expecting global economic growth to reach its peak this year and real estate markets navigating a prolonged cycle 10 years after the global financial crisis,<sup>1</sup> GLL follows a two-pronged investment approach to build balanced, defensive portfolios capable of attractive income generation that combines:

- resilient and defensive strategies that prioritize value and cash flow protection; with
- offensive strategies that focus on innovation-driven macro- and micro-locations, assets, and tenants for revenue growth.

Therefore, the key approach for us in the year ahead will be to prepare defensively for late cycle turbulence, while seeking to capitalize confidently on sustainable trends related to new technologies and innovation.

## High liquidity continues to benefit global real estate investment

Global allocations to real estate continue to rise: According to Hodes Weill & Associates, the average target allocation of institutional investors increased 150 basis points since 2013 to 10.4% in 2018 and further increases are anticipated for the next 12 months. This trend reflects that real estate has become a more mature asset class compared to the past and has been able to deliver attractive relative returns in the current low interest rate environment.

## Cap rates at or near record lows

According to recent broker reports, cap rates across different sectors and most markets are at or near record lows (source: JLL Research, Knight Frank). However, high spreads over government bonds still provide, in our view, still a comfortable cushion against future interest rate hikes. This is especially true in major European markets where spreads, as reported by Real Capital Analytics, are currently above their historical averages in the high 400-600 basis point range.

Sudden late-cycle turbulences cannot be discounted in the near term. We are therefore monitoring market risks carefully and continue to defensively capitalize on what we identify as the most resilient metros and assets. Longer-term, however, our economic view remains anchored to a relatively stable, low growth, and low interest rate scenario.

## Cap rates are just one side of the coin

In order to find attractive risk-adjusted returns in this current investment environment, our aim is to leave the well-trodden pathways and search for new opportunities. To detect markets with the best investment credentials, we utilize proprietary research tools that we call the GLL Real Estate Kite™ and 6T-analysis.

The GLL Real Estate Kite™ is a cyclical market-rating tool for identifying markets with the best prerequisites for increasing cash flows and capital value. Our 6T-analysis looks at sustainable/secular trends and ranks markets based particularly on their access to talented human capital, high quality transport, and ability to innovate through technology.

## Highlighting key global views by region

**Europe:** Based on reform-based bounce-back potential (in France, Spain, and Portugal) and pent-up demand (in central and eastern Europe), Europe as a whole remains an attractive, highly liquid, and well-diversified investment universe, in our view. Behind in the cycle compared to the US, our GLL Real Estate Kite™ analysis of the European markets reveals more room to run, especially for income growth in the office sector. As demonstrated by data from Property Market Analysis (PMA), low construction activity is encountering healthy demand and decreasing vacancy rates. We think this should continue to produce strong rental growth for multiple cities and submarkets (>2.5% per year).

**US:** In the US, in our view, fiscal policies should continue to boost growth into 2019. Costar, our analytical consultant for the US markets, forecasts overall rental growth to be modest, as rents in the US have mostly surpassed their last peaks and construction activity is gaining momentum. However, we aim to identify pockets of growth that are able to outperform and provide stable income by using a proprietary US ZIP code analysis, which locates attractive geographical areas based on their ability to (1) take advantage of the ongoing tech driven transformation, or (2) be more resilient during a potential downturn.

1. Including Oxford Economics, Consensus Economics, The Organisation for Economic Co-operation and Development.

**Australia:** Australia remains attractive. As forecast by Oxford Economics, Australian economic growth is set to stay in the 2% to 3% range during the next couple of years. We believe Sydney and Melbourne are profitable office markets where strengthening demand and restricted availability should translate into rental growth potential.

**Latin America:** In Latin America, where structural economic reforms, advantageous demographics and the region's natural resources wealth have potential to translate into more investment and value-add based industries, we continue to focus on economies of the Pacific Alliance.

#### Sector strategy highlights

**Office:** We believe that defensive Core Plus strategies are attractive in Europe and the US in 2019. We aim to generate returns by taking either short-term leasing risk on what we view as best-in-class assets in high rental growth markets, or by following value-oriented tenants priced out of AAA into new "smart" locations.

**Logistics:** The sector is generally attractive in light of the growing global ecommerce presence. For example, Prologis Research has projected that online sales create a need for three times more logistics space over time, contributing to strong leasing demand. To drive returns, our intent is to complement Core strategies — that is, strategies focused on sought-after, prime assets in urban centers that enjoy long leases — with additional strategies that focus on smaller multitenant, in-fill logistics.

**Retail:** Ecommerce continues to disrupt the sector: store closures, tenant bankruptcies, and falling sales volumes are still dominating the headlines. We have identified upcoming secondary high street locations, especially in popular tourist cities, as smarter alternatives to the very expensive prime shops. Both extremes of the value chain, luxury and convenience, appear attractive in our view as well as properties with high exposure to "fun, food and fitness" and omnichannel strategies like click and collect.

In our view, tenants are nowadays often commanding a higher degree of flexibility, velocity and convenience that mirrors the way society works, consumes, and lives in an increasingly digitalized world. We have adapted to these changing requirements by focusing on amenity-rich, serviced office buildings with flexible layouts that allow for collaboration within and between organizations, omnichannel retail stores that can combine showrooming with sales, and hybrid logistic platforms that cater for multiple uses.



## Our 6T secular trends

In our view, real estate markets are underpinned by three key criteria – access to talented human capital, high quality transport, and an ability to innovate through technology. In addition, we score high on what we believe to be the best prerequisite for anchoring these trends to a location/city: The combination of highest quality of life with attractive job opportunities in a thriving, future oriented economy. Smart cities that offer tax breaks and incentives to companies have a clear competitive edge in securing key industries for their economic basis.

### Talent

Companies are focused on the ability to hire talented employees — hence the need for a sufficiently large talent pool.

### Transport

Companies need to be well connected to be able to conduct business smoothly.

### Technology

Tech markets, that is, those with high concentrations of tech companies, have seen rising rents and declining vacancies.

### Thriving economy

Better growth prospects for companies in a strong local economy that is based on a vibrant research-and-development culture and with a high degree of digitalization.

### Top quality of life

With the generational shift in values and the way people will work in the future, “quality of life” becomes increasingly important in attracting the best employees.

### Taxes

Tax breaks, incentives, and regulatory facilitations are key to attracting new companies and anchor key industries to the local economy.



# Electric vehicles have broad implications for infrastructure

**Daniel McCormack**

Macquarie Infrastructure and Real Assets | London

Investing in infrastructure is not just about understanding the asset-specific factors affecting value. Industry or even global mega trends can also play a role, and when they do they are often significant for value. One of the key trends we expect in the global transport sector in 2019 will be a further increase in the penetration of electric vehicles (EVs) in the light duty vehicle (LDV) fleet.

At present only around 0.26% of LDVs globally are electric, but sales have been growing rapidly. Globally, EV sales have increased at a compound annual growth rate (CAGR) of 61.5% over the last five years, with China, Europe, and the US accounting for the bulk of new sales. By 2030, sales of EVs are expected to be 29.9 million per year, according to Bloomberg New Energy Finance (BNEF).<sup>1</sup>

In recent years, analyst forecasts of EV sales and penetration have consistently underestimated actual outcomes. One of the key reasons for this, in our view, is that there are several positive, self-reinforcing trends acting on EV sales, something that makes forecasting very difficult. For example, falling battery costs lower the cost of EVs, which in turn increases demand. The increased demand for EVs increases the demand for batteries and therefore provides an incentive for further battery cost improvements. At the same time, the public's growing awareness of pollution issues in large urban centers is spurring government policy action — such as emission controls and proposed bans by a certain date on sales of internal combustion engine LDVs<sup>2</sup> — that are supporting the rapid development of EVs. In short, although analyst forecasts have been steadily revised upward over recent years, they may still be underestimating the outlook for EVs.

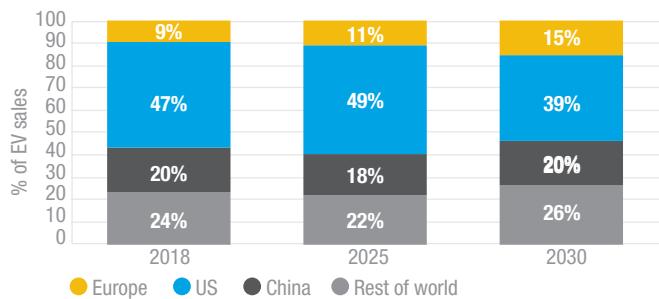
## What EVs may mean for infrastructure

The potential implications for infrastructure of this long-term trend are many and varied. EVs require a charging network, something that has clear infrastructure traits such as network effects, barriers to entry, and high capital expenditure (capex) requirements. A new asset class may be emerging as a result. At the same time, greater

use of EVs is likely to see electricity demand grow more rapidly than it has in the past and the pattern of electricity consumption over the course of any given 24-hour period is likely to become more uniform as people charge their cars during cheaper, low load periods. This may have important implications for electric distribution system operators in terms of the demand placed on their networks and their capex requirements.

Demand for EVs has also fueled battery cost improvements to the point where grid-scale batteries are now economically viable in some markets. The speed of batteries' response to outages makes them ideal for fast-frequency response services. Average vehicle miles traveled on roads are also likely to rise due to the low marginal cost of a car mile in an EV (an electric motor is much more efficient than an internal combustion engine). Toll roads could be, therefore, another potential beneficiary of this trend.

## EV sales – regional split



Source: Analysis of Bloomberg New Energy Finance, "Long-Term EV Outlook" (May 2018).

## Effect on oil

Working in the other direction is the potential impact on oil demand. As the transport sector steadily electrifies, growth in oil demand may be weaker than otherwise, and possibly weaker than it has been in recent years. For infrastructure assets that have revenues linked to oil demand, this is a potential threat that needs to be priced correctly to avoid return disappointment.

In summary, mega trends such as the rise of EVs represent both opportunities and threats for infrastructure investors. Like other trends in the technology space — such as drones, artificial intelligence, and virtual and augmented reality, just to name a few — it is something we will continue to monitor closely over the course of 2019 to ensure we take advantage of the opportunities they create, as well as correctly pricing the risks they entail.

1. BNEF Long-term Electric Vehicle Outlook 2018.

2. For example, the UK, France, and Taiwan have bans on the sales of diesel and gasoline vehicles by 2040, while Germany, India, Ireland, Israel, and the Netherlands have bans from 2030.

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Macquarie Asset Management (MAM), a business group of Macquarie Group, offers a diverse range of products including securities investment management, infrastructure and real asset management, and fund and equity-based structured products. MAM is comprised of Macquarie Investment Management (MIM), and Macquarie Infrastructure & Real Assets (MIRA). GLL Real Estate Partners (GLL) is part of MIRA. At original publication, MAM included Macquarie Specialised Investment Solutions (MSIS) which as of December 2018, has since transitioned from MAM to Corporate and Asset Finance (CAF).

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Diversification may not protect against market risk.

International investments entail risks not ordinarily associated with US investments including fluctuation in currency values, differences in accounting principles, or economic or political instability in other nations. Investing in emerging markets can be riskier than investing in established foreign markets due to increased volatility and lower trading volume.

Investments in small and/or medium-sized companies typically exhibit greater risk and higher volatility than larger, more established companies.

Fixed income securities and bond funds can lose value, and investors can lose principal, as interest rates rise. They also may be affected by economic conditions that hinder an issuer's ability to make interest and principal payments on its debt. The Portfolio may also be subject to prepayment risk, the risk that the principal of a bond that is held by a portfolio will be prepaid prior to maturity, at the time when interest rates are lower than what the bond was paying. A portfolio may then have to reinvest that money at a lower interest rate.

High yielding, non-investment-grade bonds (junk bonds) involve higher risk than investment grade bonds.

Narrowly focused investments may exhibit higher volatility than investments in multiple industry sectors.

REIT investments are subject to many of the risks associated with direct real estate ownership, including changes in economic conditions, credit risk, and interest rate fluctuations. A REIT fund's tax status as a regulated investment company could be jeopardized if it holds real estate directly, as a result of defaults, or receives rental income from real estate holdings.

Direct real estate investments are subject to many risks, including changes in economic conditions, credit risk, and interest rate fluctuations.

"Non-diversified" Portfolios may allocate more of their net assets to investments in single securities than "diversified" Portfolios. Resulting adverse effects may subject these Portfolios to greater risks and volatility.

Investment strategies that hold securities issued by companies principally engaged in the infrastructure industry have greater exposure to the potential adverse economic, regulatory, political, and other changes affecting such entities.

Value investing focuses on buying stocks that are trading at bargain prices based on fundamental analysis, then holding them until they become fully valued. Typically, value investors select securities with lower-than-average price-to-book or price-to-earnings ratios and/or high dividend yields.

Private placements may be available only to qualified institutional buyers, may have liquidity constraints, and may not be suitable for all investors. There is the possibility that securities cannot be readily sold within

seven days at approximately the price at which a portfolio has valued them, which may prevent a strategy from disposing of securities at a time or price during periods of infrequent trading of such securities.

Currency risk is the risk that fluctuations in exchange rates between the US dollar and foreign currencies and between various foreign currencies may cause the value of the Fund's investments to decline. The market for some (or all) currencies may from time to time have low trading volume and become illiquid, which may prevent the Fund from effecting positions or from promptly liquidating unfavourable positions in such markets, thus subjecting the Fund to substantial losses.

Credit risk is the risk of loss of principal or loss of a financial reward stemming from a borrower's failure to repay a loan or otherwise meet a contractual obligation. Credit risk arises whenever a borrower expects to use future cash flows to pay a current debt. Investors are compensated for assuming credit risk by way of interest payments from the borrower or issuer of a debt obligation. Credit risk is closely tied to the potential return of an investment, the most notable being that the yields on bonds correlate strongly to their perceived credit risk.

Inflation is the rate at which the general level of prices for goods and services is rising, and, subsequently, purchasing power is falling. Central banks attempt to stop severe inflation, along with severe deflation, in an attempt to keep the excessive growth of prices to a minimum.

Government/regulatory risk is the risk that government or regulatory authorities have, from time to time, taken or considered actions that could affect various sectors of these securities market.

The price-to-earnings ratio (P/E ratio) is a valuation ratio of a company's current share price compared to its earnings per share. Generally, a high P/E ratio means that investors are anticipating higher growth in the future.

The required rate of return is the minimum return an investor expects to achieve by investing in a project.

Duration measures a bond's sensitivity to interest rates, by indicating the approximate percentage of change in a bond or bond fund's price given a 1% change in interest rates.

Gross domestic product is a measure of all goods and services produced by a nation in a year.

The S&P 500 Index measures the performance of 500 mostly large-cap stocks weighted by market value, and is often used to represent performance of the US stock market.

The Russell 1000 Growth Index measures the performance of the large-cap growth segment of the US equity universe. It includes those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

The Russell 2000 Index measures the performance of the small-cap segment of the US equity universe.

The Russell 1000 Value Index measures the performance of the large-cap value segment of the US equity universe. It includes those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

The Russell 2000 Growth Index measures the performance of the small-cap growth segment of the US equity universe. It includes those Russell 2000 companies with higher price-to-book ratios and higher forecasted growth values.

The Russell 2000 Value Index measures the performance of the small-cap value segment of the US equity universe. It includes those Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values.

The MSCI EAFE (Europe, Australasia, Far East) Index is a free float-adjusted market capitalization weighted index designed to measure equity market performance of developed markets, excluding the United States and Canada.

The MSCI Emerging Markets Index is a free float-adjusted market capitalization index designed to measure equity

market performance across emerging market countries worldwide.

The MSCI ACWI ex USA Growth Index captures large- and mid-cap securities exhibiting overall growth style characteristics across 22 developed markets countries and 24 emerging markets countries. The growth investment style characteristics for index construction are defined using five variables: long-term forward earnings-per-share (EPS) growth rate, short-term forward EPS growth rate, current internal growth rate, and long-term historical EPS growth trend and long-term historical sales per share growth trend.

The MSCI ACWI ex USA Value Index captures large- and mid-cap securities exhibiting overall value style characteristics across 22 developed markets countries and 24 emerging markets countries. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price, and dividend yield.

The Purchasing Managers' Index (PMI) is an indicator of the economic health of the manufacturing sector of a country or an economy.

A PMI reading above 50% indicates that the manufacturing economy is generally expanding; below 50% indicates that it is generally declining.

The Citigroup Economic Surprise Indices are 3-month rolling measures of actual economic surprises relative to market expectations. A positive reading means that data have been stronger than expected, while a negative reading means that economic data have been weaker than expected.

The Bloomberg Barclays Municipal Bond Index measures the total return performance of the long-term, investment grade tax-exempt bond market.

The Personal Consumption Expenditures Price Index (PCE) is a measure of inflation that is calculated by the Bureau of Economic Analysis, representing changes in consumer spending on goods and services. It accounts for about two-thirds of domestic final spending.

The Core US Consumer Price Index (CPI) is a measure of inflation that is calculated by the US Department of Labor, representing changes in prices of all goods and services, excluding those with high price volatility, such as food and energy, purchased for consumption by urban households.

The J.P. Morgan Emerging Markets Bond Index (EMBI) Global Diversified ex-Venezuela Index tracks total returns for US dollar-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities, excluding Venezuela, that include Brady bonds, loans, and Eurobonds, and limits the weights of the index countries by only including a specified portion of those countries' eligible current face amounts of debt outstanding.

The J.P. Morgan Corporate Emerging Markets Bond Index (CEMBI) Broad Diversified Index tracks US dollar-denominated emerging market corporate bonds, limiting the weights of countries with larger corporate debt stocks by including only a specified portion of those countries' eligible current face amounts of debt outstanding.

The J.P. Morgan Emerging Market Currency Index (EMCI) is a tradable benchmark that tracks short-term interest rates for emerging markets currencies versus the US dollar.

SHIBOR, or the Shanghai interbank offered rate, is a daily referent rate based on interest rates at which banks offer to lend unsecured funds to other banks in the Shanghai wholesale money market.

China's Total Social Financing (TSF) is a measure of the aggregate volume of funds provided by China's domestic financial system to the real economy (domestic non-financial enterprises and households) within a given timeframe.

Bloomberg's Top 20 Emerging Markets include the following countries, based on criteria analyzed by Bloomberg Markets: China, South Korea, Thailand, Peru, the Czech Republic, Malaysia, Turkey, Chile, Russia,

Indonesia, Colombia, Poland, Namibia, Zambia, South Africa, Mexico, Brazil, Hungary, Morocco, and the Philippines.

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