Entrepreneurial ownership holds the key to private markets outperformance
Welcome to Partners Group’s Private Markets Navigator for 2019. The Private Markets Navigator shares Partners Group’s economic outlook and investment preferences for all private markets asset classes.
Private markets outlook
Strong governance is key to growth.

While our base case economic outlook projects a period of continued modest growth, we are aware that the ride may become bumpier as multiple challenges emerge. In this environment, we believe strong governance and value creation skills are the only way to generate outperformance.

As we near the end of 2018, the global economy appears to remain on a solid growth path. Looking ahead, we expect the expansion to continue, albeit at a slightly more modest pace. Following a strong year for the US economy, tighter financial conditions and the fading impact of fiscal stimulus should result in milder growth rates. Nonetheless, these should be sufficient to translate into rising inflationary pressure and wage growth across the country and keep the US Federal Reserve (Fed) on its tightening path. In fact, our base case economic outlook assumes that the Fed will raise its target rate above current market and analyst expectations. In Europe, we forecast modest growth, with relatively muted inflation and continued accommodative monetary policy. In their current form, ongoing trade conflicts should only have a minor direct impact on overall GDP growth across regions, barring a more material impact on confidence. In China, more supportive monetary and fiscal policies and the Chinese Renminbi depreciation should counteract negative effects.

However, the combination of rising interest rates in the US, the potential effects of trade conflicts, structural challenges in Europe and divergence in emerging markets should raise volatility in capital markets, as already witnessed in the October equity market sell-off. This is typical for the later stages of an expansion, especially in a market where elevated valuations are largely based on a low risk-free rate. Over a five-year horizon, we expect valuations to come down in light of higher US inflation and rising interest rates and incorporate this into our base case underwriting assumptions across asset classes.

Economic and market scenarios: main parameters

<table>
<thead>
<tr>
<th>Base case</th>
<th>Asset testing scenarios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP growth* (Next 5-year average)</td>
<td>US: 2-3% EU: 1-2%</td>
</tr>
<tr>
<td>Inflation* (Next 5-year average)</td>
<td>US: 2.5-3% EU: 1-2%</td>
</tr>
<tr>
<td>Change in Fed funds rate (in 5 years' time)</td>
<td>+150-200bps (In 2-3-4.5%)</td>
</tr>
<tr>
<td>Market valuations** (in 5 years' time)</td>
<td>10% lower</td>
</tr>
</tbody>
</table>

\*For the asset testing scenarios, real GDP and inflation reflect Partners Group projections, NAV-weighted as per Partners Group’s asset split across the US, Europe, other advanced and emerging markets.

**Market valuations refer to price-to-earnings ratios for public equities, enterprise value to earnings before interest, tax, depreciation and amortization for private equity, capitalization rates for private real estate and underwriting internal rate of return for private infrastructure.

Source: Partners Group, November 2018. For illustrative purposes only.

The importance of asset testing

The conditions set out in our base case scenario guide our investment strategy. More challenging macroeconomic conditions are emphasizing our focus on creating value and strengthening market positions across our global portfolio of companies and assets, both of which we achieve through a long-term, entrepreneurial approach to governance. However, the risk of a deviation from our – admittedly market-friendly – base case has been rising. In order to mitigate this risk, we focus on businesses and assets that are well positioned to withstand...
a variety of alternative economic scenarios. The scenarios we use to test assets include a faster-than-expected “adverse” US rate hike cycle, where rates rise faster because of a more pronounced increase in inflation (expectations) or wages and rising longer-dated government bond yields, and a recession, possibly as a result of escalating trade disputes, a Eurozone government debt crisis (Italy) or a cooling in China’s economy. It may be worth noting that the “adverse” rate hike scenario could potentially leak into the recession scenario if growth slows drastically in response to higher rates. We are also not dismissing a more positive outcome, such as a stock market rally scenario, where modest inflation and accommodative monetary policy continue to boost investor sentiment. Nonetheless, we believe this scenario is less likely to materialize given the advanced stage of the US business cycle. While these scenarios are more relevant to some private markets asset classes than others, across the platform, we seek assets and business models with strong pricing power and margin stability. These elements are vital to protecting and strengthening revenues and valuations.

Private markets assets in a rising rates scenario
Out of our three test scenarios, we assign the highest likelihood to the “adverse” rate hike cycle, warranting a deeper analysis of its impact on private markets. The US economy is already two years into the hike cycle, with the Fed funds rate at 2.0-2.25% and further rate increases ahead. Our base case projects an additional aggregate rate increase of 150-200bps over a five-year period, which is above market expectations. Depending on the cause of rising rates, different asset classes respond in different ways. We broadly distinguish between two types of rising rate environments, a “positive” rate hike environment and an “adverse” rate hike environment.

In a “positive” scenario, rate hikes are gradual and accompanied by solid top-line growth, with higher but still modest inflation. Real rates tend to be stable or rise gradually on the back of better growth expectations. In essence, the past two years in the US can be characterized as a “positive” scenario, and our base case translates into a continuation of this environment. Under these conditions, public and private markets should perform solidly as better top-line revenues and economies of scale offset higher financing costs. Valuations tend to retract as rising rates lift discount rates. An analysis of the performance of different asset classes during US rate hike cycles since the 1990s suggests that all of these cycles were positive for investors, as strong earnings growth (or rental growth for real estate) coupled with positive sentiment and rising risk appetite offset modest price to earnings (P/E) ratios and margin compression (or cap rate expansion for real estate). In the past, this has resulted in positive total returns for equities, spread compression for senior loans and real estate cap rate declines.
In an “adverse” scenario, rates increase at a faster rate. This can be caused by higher inflation and rising wages but also by rising longer-dated government bond yields. As investors believe the Fed is falling behind the curve, inflation expectations spiral higher, “forcing” the Fed to raise short-dated rates faster and further than projected in our base case scenario in order to alleviate inflation concerns. Higher front-end and longer-dated rates weigh on top-line growth, resulting in pressure on cash flows and diminishing economies of scale. Companies would find it more challenging to transfer the impact of rising input goods prices and higher financing and labor costs to consumers. The adverse impact on margins and valuations caused by higher discount rates would be exacerbated by negative investor sentiment and increasing risk aversion.

Using private equity as an example, the table below illustrates the impact of rising rates on the asset class and the resulting investment implications. The impact on real estate and infrastructure is covered in the respective asset class sections on pages 18 and 30. Private debt investors should benefit from rising (short-end) rates in the “positive” rate hike scenario given the floating-rate nature of private debt. The “adverse” scenario would result in spread widening and higher expected loss rates. However, the overall impact of this scenario on private debt should be less significant compared to other asset classes.

In the current environment, we are placing even greater emphasis on investment opportunities that offer value creation potential. We remain highly disciplined in our asset selection and focus on sub-sectors of the market that we expect to achieve superior growth rates. In particular, we look at sectors that benefit from global megatrends, such as digital transformation, changing consumer preferences and increased energy efficiency. These megatrends result in transformative shifts within a variety of geographies, industries and sub-sectors.

Industrial automation and modern logistics are transforming the industrials sector, digital innovation is disrupting corporate business models and the demand for improved energy efficiency is generating new opportunities for infrastructure assets and businesses. In addition to identifying attractive sub-sectors, for downside protection, we prudently incorporate a multiple contraction of around 10% in our base case underwriting assumptions to provide a cushion against adverse developments.

### US: identifying pockets of growth

Growth in the US has picked up since the beginning of 2018, fueled by tax cuts and supportive fiscal and business spending. Consumer confidence is buoyed by a vibrant labor market and rising incomes. While we expect the expansion to continue, we also anticipate some weakening ahead. Tighter financial conditions, the impact of trade concerns on business and consumer confidence, more volatile equity markets and a fading fiscal stimulus should all ease growth.

Meanwhile, wage growth is starting to show and is set to rise further. Anecdotal evidence across a number of US portfolio companies suggests upward pressure on wages. This holds true not only for the lower income segments as minimum wages rise but also for the specialist sectors where labor shortages encourage companies to offer better terms to attract talent. In turn, rising wages and increased spending power should raise inflation, which has already been ticking higher. Over a mid-term horizon, we expect inflation in the US to average 2.5-3% p.a.

In the absence of more material wage growth, the Fed should continue its gradual monetary tightening comprising balance sheet reduction and rate increases. In our base case, we project a corresponding increase in longer-dated yields. However, the high fiscal deficit and government debt are a cause for concern. Coupled with Fed balance sheet reduction and rising inflation expectations, this may put a strain on longer-dated government bonds and in turn on financial markets and valuations.

### Private equity return drivers under different rate scenarios

<table>
<thead>
<tr>
<th>Return drivers</th>
<th><strong>“Positive” rate hike cycle:</strong> gradual rate increases, positive GDP growth, modestly rising inflation expectations.</th>
<th><strong>Risk scenario: “adverse” rate hike cycle:</strong> fast rate hikes and/or rising real yields, unchanged/slowing GDP growth, rising inflation expectations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>(+) revenue growth remains robust.</td>
<td>(-) decelerating revenue growth.</td>
</tr>
<tr>
<td>Cash flow</td>
<td>(+/-) rising financing costs but partially hedged and somewhat offset by higher revenues.</td>
<td>(-) lower growth and higher rates (partially hedged) weigh on cash flow growth.</td>
</tr>
<tr>
<td>Margin</td>
<td>(+) margin expansion due to economies of scale.</td>
<td>(-) higher financing costs weigh on margins but are partially hedged.</td>
</tr>
<tr>
<td></td>
<td>(-) higher financing costs weigh on margins but are partially hedged.</td>
<td>(-) slowing pace of leverage reduction.</td>
</tr>
<tr>
<td></td>
<td>(-) impact on default rates.</td>
<td>(+) rising default rates.</td>
</tr>
<tr>
<td>Multiple</td>
<td>(+) high liquidity and debt availability.</td>
<td>(-) risk aversion.</td>
</tr>
<tr>
<td></td>
<td>(-) higher discount rates.</td>
<td>(-) higher rates reduce liquidity and debt availability.</td>
</tr>
<tr>
<td></td>
<td>(+) increased competition for deals fuelled by liquidity and potentially lower multiples.</td>
<td>(-) higher discount rates.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(+) lower valuations for add-ons/new investments.</td>
</tr>
</tbody>
</table>

Source: Partners Group, for illustrative purposes only.

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1 For an overview of the sub-sectors where we see attractive investment opportunities for both corporate and real assets, please refer to pages 10, 19 and 31.
Given the rather advanced stage of the US expansion, we focus on segments of the market where growth is resilient and supported by favorable sectoral shifts and trends. One area of focus is the continued increase in digitization across all sectors. Companies specialized in software product engineering, providing services that both enhance products and enrich customer experience, are of particular interest. In real estate, we focus on locations experiencing high population growth, often driven by employment growth in the technology sector.

In infrastructure, one of the trends we look at is the reshaping of energy resource flows. Opportunities exist in natural gas or refined product transportation, gathering and processing facilities as well as in ancillary sectors.

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Europe: focusing on more defensive market segments

Despite some cooling in GDP expansion, we believe growth in Europe will remain positive but modest as a number of existing obstacles evolve (Brexit, Italian fiscal debt). While financial conditions continue to be highly accommodative across the Eurozone and government spending is supportive overall, the trade disputes with the US seem to have had a bigger impact on confidence in the Eurozone than in the US. We expect growth in the Eurozone to resume at levels below its US counterpart and unemployment to continue to decrease. Across the region, inflationary pressure is still modest, and monetary tightening should be very gradual. Regional divergence, however, has become more pronounced as Italy’s economy is sputtering while Germany’s remains buoyant, despite some slowing in its automotive sector. Furthermore, structural issues remain unaddressed. In many countries, for instance, public debt continues to be elevated, and banks have failed to reduce their exposure to it. As the European Central Bank’s asset purchases are drawing to an end, Italy’s persistently high government debt and Italian banks’ exposure to it are a cause for concern, especially in light of low growth.

The ongoing commotion around the UK’s exit from the European Union is adding an additional layer of complexity to the region’s outlook. While this has had little effect on the mainland, the UK has fallen from being the best-performing G8 country to being the laggard as Brexit uncertainty has impacted investment and spending in the country.

Our investment focus in Europe therefore revolves around structural growth in more defensive market segments. Automation remains a key theme across a range of industries, and we see relative value in the long-standing solid demand for automation components in manufacturing. Process automation solutions such as belting systems is one example of a market that is growing rapidly.

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Joel Schwartz Head Private Equity Americas | Steven Kroese Private Equity Integrated Investments Europe
Asia-Pacific/emerging markets: selectively targeting proven business models

We remain cautiously positive on emerging markets growth as a whole but are highly selective in terms of where to allocate capital. Growth has been easing, and the stronger USD and rising US rates are affecting capital flows to many emerging markets, tightening financial conditions and weighing on local currencies and equity markets. In particular, countries with high external financing needs and high foreign-denominated debt levels are more likely to be affected by risk aversion. The countries struck by recent turmoil (Turkey, Argentina) are characterized by weak fundamentals. We therefore view the risk of contagion and development into a broader emerging markets crisis to be limited at this stage.

Given the disparities in fundamental conditions, exchange rate policies and political risks, our emerging markets investment approach relies on a case-by-case analysis. While recent market corrections have lowered valuations, the moves may not yet fully capture inherent weaknesses. We are especially cautious on countries with elevated external funding needs. At the asset level, capital structure, currency exposures and supply chain structures are all important considerations. Underwriting returns need to compensate for political, macro and currency risk (or the respective hedging costs).

Although China has experienced a moderate slowdown in GDP growth, we believe there are still interesting investment opportunities in the country. These tend to be centered on transformative trends, such as the changing spending patterns of a younger, more modern generation. Global supply chain shifts and policy incentives for certain strategic sectors (Made in China 2025) need to be considered and require a more in-depth, sector-based analysis. Nonetheless, we expect the devaluation of the Renminbi to mitigate the impact of US trade tariffs on the country’s economy, with monetary and fiscal easing providing further support.

Turkey has highest foreign-denominated debt and one of the lowest reserve adequacies among major EMs

One theme that still guides our investment thesis for emerging markets, especially in Asia, is the ongoing growth of the middle class and rapid increase in purchasing power. As a result, two trends stand out: the rise of e-commerce for non-perishable goods, particularly in China, and the emergence of discount retailers, primarily in more remote areas where organized retail is in its infancy. We see strong potential in countries like India, where retail is still largely unorganized and where store rollout in underserved areas can attract very high demand.

In real estate, we focus on advanced regions or attractive locations in Tier 1 and Tier 2 cities in emerging markets. Given the high valuation environment and emerging market currency volatility, our approach is situational: we look for sufficient return expectations to compensate for increased macro and valuation risks. In the more advanced regions, we like office space in areas outside of central business districts with good accessibility and strong infrastructure. As younger generations increasingly adopt a “live-work-play” lifestyle, mixed-use assets in close proximity to leisure and retail destinations as well as modern residential properties are compelling opportunities.

In infrastructure, we believe renewable energy is the key theme, particularly solar photovoltaic and wind (both onshore and offshore). For instance, Taiwan and Australia are planning to retire a large fleet of old coal and nuclear power plants and replace them with solar and wind energy. Renewable energy platforms complemented by battery storage facilities are attractive given their more consistent power supply capabilities.

Outlook

Our base case scenario projects a period of continued modest growth. However, we acknowledge that the ride may become bumpier, and various obstacles may impact growth, affecting different regions in different ways. In this environment, testing the resilience of the assets we plan to invest in is of vital importance. In addition, deep sector insights are required to identify the most compelling investment opportunities in high-growth sub-sectors benefiting from transformative trends. Once we have invested in an asset, we believe strong governance and value creation skills are the only way to generate outperformance.
Market overview
The past year has seen private equity valuations rise yet again from an already high base. We attribute this to ever-increasing competition from private equity managers, strategic buyers and new market entrants, encouraged by the search for yield while interest rates remain low and by strong debt markets for leveraged buyouts. Quality assets typically trade at EBITDA multiples in the mid-teens range. In contrast, assets still trading at low multiples tend to be underperforming or operating in highly cyclical sub-sectors.

As we do not operate in isolation, elevated valuations are a reality in our underwriting as well, especially given our focus on high-quality assets in high-growth segments. In order to mitigate the risk associated with paying competitive prices, our strategy is twofold. On the one hand, we remain selective, investing in only around 1% of the opportunities we screen. Increasingly, when it comes to due diligence, we are using the visibility afforded by a large database of private markets assets to preempt sales processes, aiming to identify target companies and conduct thorough research on them before they come up for sale. This enables us to source opportunities in a systematic manner according to high-confidence investment themes and develop substantiated value creation and governance plans for our target assets early on.

On the other hand, we maintain our belief that to achieve attractive returns in this environment, private markets investment managers have no option but to excel in their value creation capabilities. For this reason, the focus on highly entrepreneurial ownership and active value creation is a fundamental trait of our investment strategy. That same focus offsets the multiple contraction assumption we use in our underwriting, which has increased from around 0.5x for investments made in 2016 to around 1.4x for investments made today.

Average purchase price multiple of pro forma trailing EBITDA for LBOs

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Wrapping around target assets before the sales process has started

Note: formal vs. pre-process due diligence timelines for Partners Group direct private equity investments (2015-2018).
Source: Partners Group, October 2018.

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Our current investment themes

In light of the competitive market and high valuations, we continue to place a strong emphasis on “thematic sourcing,” searching for opportunities according to well developed investment themes. We conduct regular analyses in order to identify those sectors that we believe offer higher value relative to others in today’s market. Based on this initial assessment, we systematically map out the sub-sectors within these sectors that particularly benefit from structural growth or transformative trends. We then develop tangible investment themes for each sub-sector with long-term growth prospects. Our investment themes are often guided by global megatrends, such as digital transformation, industrial automation and new generation spending patterns, while we seek to avoid exposure to binary technology risk.

Once we have identified our target sub-sectors, we work on building deep and trusted relationships with the most promising companies within these segments. Our aim is to develop a comprehensive investment thesis well before the companies become available for investment. We particularly like sub-sectors and companies where we can leverage our expertise from current or previous investments to lead targeted value creation initiatives.

We find the most compelling value in assets that combine attractive top-down market trends with bottom-up category leadership, underpinned by the opportunity to create value through entrepreneurial ownership. Within the sub-sectors where we see attractive opportunities, we continue to apply our proven investment focus on platform companies in fragmented markets, niche businesses with potential to gain market share in sub-segments of industries experiencing tailwinds and franchise companies with strong defensive capabilities and high cash flow generation. In some cases, we may identify or grow companies into category leaders that have the potential to outperform over a prolonged period of time.

Examples of investment themes that have enabled us to successfully source recent investments include the growing demand for digital product engineering services, industrial consumables, outsourced manufacturing and discount retail.

Corporate sub-sector matrix: relative value focus areas and investable universe

<table>
<thead>
<tr>
<th>Consumer</th>
<th>Industrials</th>
<th>Healthcare</th>
<th>Bus. &amp; fin. services</th>
<th>TMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personalization &amp; customization</td>
<td>Automation</td>
<td>Ambulatory multi-site</td>
<td>Financial services</td>
<td>Enterprise software</td>
</tr>
<tr>
<td>• Niche market leaders</td>
<td>• Vision sensors, micro-electro-mechanical sensors &amp; drives</td>
<td>• Employer onsite</td>
<td>• Off-balance sheet Fs</td>
<td>• B2B enterprise software</td>
</tr>
<tr>
<td>• Co-manufacturing</td>
<td>• Industrial consumables</td>
<td>• Physical therapy</td>
<td>• Payment &amp; transaction banking</td>
<td>• PaaS/SaaS models</td>
</tr>
<tr>
<td>Lifestyle &amp; sustainability</td>
<td>Modern logistics</td>
<td>Outsourced device manufacturing</td>
<td>Business process outsourcing</td>
<td>Cyber security software</td>
</tr>
<tr>
<td>• Health &amp; wellness</td>
<td>• Integrators</td>
<td>• Orthopedics</td>
<td>• Solutions for non-core functions</td>
<td>• Internet of things &amp; edge computing</td>
</tr>
<tr>
<td>• Infant markets</td>
<td>• Material handling systems</td>
<td>• Multi-line outsourcers</td>
<td>• Technology solutions</td>
<td>• IT services &amp; infrastructure</td>
</tr>
<tr>
<td>• Pet products &amp; services</td>
<td>• Machine vision</td>
<td></td>
<td></td>
<td>• IT network &amp; data center services</td>
</tr>
<tr>
<td>Premiumization &amp; emerging middle class</td>
<td>Advanced manufacturing</td>
<td>Life science supplies and reagents</td>
<td>Testing, inspection &amp; certification</td>
<td>IT &amp; technology outsourcing</td>
</tr>
<tr>
<td>• Inspirational brands</td>
<td>• 3D-printing</td>
<td>• Genomics-based supplies</td>
<td>• New technologies and regulation</td>
<td>• XaaS (“anything” as a service)</td>
</tr>
<tr>
<td>• High-growth categories</td>
<td>• Technical components</td>
<td>• Calibration standards</td>
<td>• Rising end-user expectations</td>
<td>• Digitalization</td>
</tr>
<tr>
<td>Digitalization</td>
<td>Life science supplies and reagents</td>
<td>Testing, inspection &amp; certification</td>
<td>Commerical services</td>
<td>Big data</td>
</tr>
<tr>
<td>• Deep customer insights</td>
<td>• Genomics-based supplies</td>
<td>• New technologies and regulation</td>
<td>• Industrial/onsite services</td>
<td>• Big data intelligence</td>
</tr>
<tr>
<td>• Channel/product disruption</td>
<td>• Calibration standards</td>
<td>• Rising end-user expectations</td>
<td>• Residential services</td>
<td>• Big data analytics</td>
</tr>
<tr>
<td>• Customer engagement</td>
<td></td>
<td></td>
<td></td>
<td>• Database platforms</td>
</tr>
</tbody>
</table>

Note: bullet points in black highlight sub-sectors with active investment opportunities. Bullet points in gray highlight future areas of focus for research or investment. Source: Partners Group, November 2018. For illustrative purposes only.
Entrepreneurial governance in private markets

While thematic sourcing guides investment into sub-sectors with above-average growth potential, once we have invested in a company, our focus is on highly entrepreneurial ownership and active value creation. It is our belief that the ability to create value, enabled by a governance framework that supports entrepreneurialism, is one of the key drivers of private equity returns. The composition, conduct and mandate of private equity-backed boards is an essential part of this.

Compared to public markets, we compose smaller boards that meet more frequently, are more deeply ingrained in the business and work closely with management to direct companies toward value creation. Our portfolio company boards usually comprise key members of our investment team, in-house operational experts and one or two C-level leaders of the portfolio company as well as a handful of operating (external) directors with extensive, relevant experience. The latter are selected based on their ability to contribute to strategic growth in a specific way and not merely to act as a counterbalance to the executive directors and investment team representatives.

In addition, board members and management teams are typically expected to invest meaningful amounts of their own wealth into the portfolio companies they lead. This means they share the upside potential but also the downside risk, creating a powerful incentive for value creation for the benefit of all stakeholders involved.

Finally, in contrast to public company boards, portfolio company boards are not bound by the requirement to adhere to control-focused corporate governance regimes or to focus solely on short-term earnings gains. Instead, private equity’s entrepreneurial governance model allows boards and management teams to focus on driving value creation projects, building processes for a better firm and sustainably growing free cash flow generation.

Digitalization creates need for product engineering

The digital transformation of products and services continues to be one of the most dominant trends across industries, including the technology, media and telecommunications, industrial, consumer and healthcare industries. IT services are in high demand to help digitalize and automate processes, improve performance and efficiency and develop innovative new offerings. The global market for IT services totals approximately USD 940 billion,\(^1\) comprising a variety of services such as IT outsourcing, business process outsourcing (BPO), consulting, hard- and software support and outsourced product development (OPD).

While traditional IT and BPO services are growing at a CAGR of around 3-4%,\(^2\) we have identified even stronger demand for OPD solutions, such as commercial application development and custom application development to help customers succeed with digital transformation. In fact, the USD 240 billion\(^3\) OPD market is significantly outgrowing the traditional IT outsourcing space. The most attractive segment in our view is the USD 50 billion software product engineering services (PES) segment as PES help corporations develop new technology-enabled products and improve customer experience. Hence, these products have a positive impact on revenues rather than purely saving costs. The very high demand for these services is reflected in the expectation that the segment will grow at over 20% CAGR until 2021.

Software PES is fastest-growing segment of OPD market

<table>
<thead>
<tr>
<th></th>
<th>Outourced product development (USD ~240bn)</th>
</tr>
</thead>
</table>
|                      | Commercial app development | Legacy custom app development | OPD (USD ~50bn ~15% CAGR)
| Growth outlook (’17-’21 CAGR) | ~5% | ~7% | ~10% | ~24%
| Growth drivers       | ✓ Available solutions are improving | improving off-the-shelf solutions | ✓ continued push to outsource | ✓ Push for greater digital solutions
| Ease of switching    | Easy | Hard | Hard | Medium
| Gross margins        | 20-30% | 15-25% | 30-40% | 40-50%
| Margin outlook       | Decreasing demand, large supply | Prices stable | Some downward pricing pressure | Prices stable


GlobalLogic is one company within this segment that particularly sparked our interest. GlobalLogic, which we acquired mid-2018, is a leader in digital PES. It works with high-profile customers such as The Economist on digital products and services that provide more dynamic user experiences to a mobile subscriber base, and Cochlear, a leading provider of hearing loss solutions, which has completely outsourced its clinical care software development to GlobalLogic. With over USD 500 million in revenue and over 20% organic growth rate, GlobalLogic has more than doubled in revenue and EBITDA since 2013. The company is well positioned for continued rapid growth on the back of strong market growth and the opportunity to expand internationally. Expansion in Europe is a key strategic priority, where our dense European network will be able to support the company in gaining new customers. All value creation initiatives will be enabled by our active approach to governance. We are composing a board with IT services experience, functional expertise and strategic relationships to help develop the company into a category-leading product outsourcing platform. \(^1\) The Boston Consulting Group, March 2018. \(^2\) Ibid. \(^3\) Ibid.
Automation drives industrial consumables demand

Another theme driven by the digital transformation megatrend is that of automation in the industrials sector. Automation is a major topic for manufacturing companies all around the world as they attempt to standardize processes, shorten production times and save costs. While automation components like software and 3D printing dominate the headlines, there is a broad range of component providers that benefit from automation, including more traditional sub-segments of the market. For example, the market for factory and process automation solutions, such as belting systems, is growing rapidly and is expected to reach a size of around USD 140 billion by 2020, driven by rising labor costs.

While we consider automation in general as a sector with a long runway for growth, we particularly like industrial consumables. These are the products in production lines that must be replaced more regularly because of their frequent use. They include items such as batteries, magnets, wheels and belts. Industrial consumables exhibit a high degree of recurring revenue streams as well as good revenue predictability due to their mission critical nature and often only represent a small share of wallet. This makes the sub-sector more defensive across the cycle while providing attractive upside potential from structural growth.

To capitalize on this opportunity, we recently acquired two major companies in this field, Megadyne Group and Ammeraal Beltech, with the aim of merging them into a global market leader. Megadyne is a leading manufacturer of power transmission belts, and Ammeraal Beltech is a global leader in light-weight process and conveyor belting. While representing only 1-2% of total systems costs, belts are a mission critical component of production processes. The consumable nature of belts and the significant exposure to resilient industries, such as food and beverage, logistics and airport luggage handling, result in predictable, recurring revenues for the segment. At the same time, customer loyalty is high as a result of the companies’ specialty and customized products.

Our strategic decision to merge Megadyne and Ammeraal Beltech follows a strong industrial and operating logic. The companies have complementary capabilities, and there is potential to realize tangible synergies in order to create the global leader in power transmission belts and light-weight conveyor belts. The combined group will provide a more comprehensive offering to Megadyne’s and Ammeraal Beltech’s customers and fill geographic gaps. Further international expansion, both organically and through add-on acquisitions, in particular in emerging markets, is a core element of our value creation plan for the group. In order to enable these initiatives, ensuring effective governance is a key area of focus, with a highly experienced Chairman already appointed for the combined entity before the acquisition of Megadyne had closed (see our Q&A with Horst Heidsieck on page 15).

Outsourced manufacturing provides solution to increasing complexity

Food and beverage is one of the most resilient, non-cyclical, stable markets, where growth is generally linked to world population growth. Within the sector, the trend toward healthy eating, combined with consumers’ need for convenience, has driven growth in the snacks sub-sector, particularly in the “better for you” category. With consumers demanding customized products and new flavors, the rise of convenience-based on-the-go snacks and branded food providers’ need to reduce the number of their facilities to keep costs under control, outsourced manufacturing is exhibiting growth above the retail market average.

4 Goldman Sachs research, 2018.
We aim to benefit from this trend through our recent acquisition of Hearthside Food Solutions (Hearthside), one of the largest contract manufacturers of consumer packaged goods in the US. The company’s main product categories are cookies, crackers, nutrition bars, granola and snacks. Hearthside’s category leadership puts it in a prime position to further consolidate its existing markets both organically and through add-on acquisitions, expand into new geographies and enter adjacent segments, such as the chocolate, vitamin and pet food sub-sectors. Additional value creation initiatives will be focused on driving innovation and optimizing existing manufacturing processes. These initiatives will be driven by Hearthside’s board, which comprises industry experts with proven experience in the consumer packaged goods segment and diverse functional expertise within manufacturing and lean operations. Given Hearthside’s market leadership, sticky customer relationships and relatively low disruption risk, we believe the company is well positioned to outperform over a prolonged period of time.

In May 2018, we agreed to acquire Vishal, a leading discount retail franchisor in India. Vishal is the franchisor of the Vishal Mega Mart brand and wholesale supplier to over 230 hypermarket stores across India, which are operated by a network of franchisees. We consider Vishal a highly attractive company as it has developed a proven and replicable store model, offering a platform for rapid store rollout. A key factor that helped secure our acquisition of Vishal was our prior experience in the discount retail sector through our investment in Action, the leading Dutch discount retailer. Our value creation plan for Vishal will leverage our experience in accelerating store rollouts in a sustainable manner; optimizing product assortment and improving procurement, supply chain and inventory as well as our network of executives, business partners and industry specialists in the discount retail sector. In order to support Vishal’s further development, we are forming a board of industry experts that combine a deep understanding of the Indian retail landscape with expertise from global discount retail.

Discount retail sector stands out in emerging markets
A secular growth theme we have highlighted in the past is the emergence of a large middle class in emerging markets, which translates into increased consumer spending power across these regions. Within the consumer sector, we see two retail channels gaining relevance: e-commerce and discount retail. Discount retailers offer a strong value proposition through a combination of appealing price points, good quality and a "treasure hunt" shopping experience for their customers. This differentiated offering has enabled leading discount retailers around the world to grow sustainably across the cycle.

A developing economy where we see great potential for discount retail is India. Disposable income in the country is rising at double-digit annual rates. In addition, the Indian market is significantly underpenetrated in terms of organized retail, both when compared to developed markets like the US but also in comparison to emerging markets like Indonesia and Thailand. Over the last few years, we have seen an increase in penetration rates, which we expect to continue going forward, fueled by urbanization, shifts in consumer habits from unbranded toward branded products and favorable demographics.

How we realize relative value potential in private equity

Platform companies
We acquire platform companies or assets with a strong management team and infrastructure in a highly fragmented market and then purchase add-on companies to further grow the platform and benefit from synergies.

Niche winners
We acquire companies in sub-segments of specific industries benefiting from particularly strong products or services and demonstrating an ability to grow disproportionately, often through internationalization. We institutionalize the business and extend the product/service offering.

Franchise companies
We acquire businesses or assets on a stand-alone basis – typically, single assets with value creation potential as well as strong defensive capabilities, high cash flow generation and the ability to quickly de-leverage. We seek to broaden their network and strengthen their positioning.
Relative value analysis

Our relative value outlook has turned somewhat more neutral on the asset class. The overall market remains highly competitive, with unusually elevated valuation levels and select pockets of opportunity from a macro perspective. As a result, we have removed the overweights on the mid-cap sector in Europe and the US and on the small-cap sector in Asia.

In terms of sectors, our outlook remains largely unchanged. We continue to see attractive opportunities in the healthcare and business services sectors globally. We see interesting opportunities in automation and technology hardware in Asia and emerging markets and hence have upgraded industrials in the region but remain neutral on the sector overall due to the tariffs levied on capital goods. Similarly, we have changed our outlook on information technology in Asia and emerging markets to underweight due to concerns around the sustainability of cross-border demand. Given overstretched valuations, we are cautious on the media/telecommunications sector in the US.

We remain underweight on secondaries in general given the high pricing in the market. We have eased the strong underweight on European mature secondaries, with some very strong exit activities witnessed recently. In emerging markets, we are more cautious on inflection asset secondaries in light of recent pressures on emerging market currencies as a consequence of the strengthening USD, negative public market developments and geopolitical uncertainty. Furthermore, we have downgraded our outlook for US venture mature assets secondaries as a result of elevated valuations. On the primaries side, we are broadly neutral but see some value given the later stage of the business cycle and the typical delay between commitment and deployment.

Relative value matrix

<table>
<thead>
<tr>
<th></th>
<th>NORTH AMERICA</th>
<th>EUROPE</th>
<th>ASIA/EMERGING MARKETS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Large Mid Small Growth</td>
<td>Large Mid Small Growth</td>
<td>Large Mid Small Growth</td>
</tr>
<tr>
<td>Directs</td>
<td>Media/telecommunications Consumer</td>
<td>Media/telecommunications Consumer</td>
<td>Media/telecommunications Consumer</td>
</tr>
<tr>
<td></td>
<td>Information technology Healthcare</td>
<td>Information technology Healthcare</td>
<td>Information technology Healthcare</td>
</tr>
<tr>
<td></td>
<td>Business &amp; financial services Industrials</td>
<td>Business &amp; financial services Industrials</td>
<td>Business &amp; financial services Industrials</td>
</tr>
<tr>
<td>Secondaries</td>
<td>Inflection assets Mature assets</td>
<td>Inflection assets Mature assets</td>
<td>Inflection assets Mature assets</td>
</tr>
<tr>
<td></td>
<td>Inflection assets Mature assets</td>
<td>Inflection assets Mature assets</td>
<td>Inflection assets Mature assets</td>
</tr>
<tr>
<td>Primaries</td>
<td>Large Mid Small Venture Growth</td>
<td>Large Mid Small Venture Growth</td>
<td>Large Mid Small Venture Growth</td>
</tr>
</tbody>
</table>

How to interpret the table: the relative value matrix divides the private equity market into various private equity segments, defined by regions (North America, Europe and Asia/emerging markets) and transaction type (directs, secondaries and primaries). For direct and primary investments, we classify the investment by size (small-cap up to EUR 250m (Europe) or USD 250m (US); mid-cap from EUR 250m to EUR 2bn (Europe) or USD 250m to USD 2bn (US); and large-cap over EUR 2bn (Europe) or USD 2bn (US) enterprise value) and also include a growth segment (for firms with positive cash flows and exceptional growth potential in need of additional capital to finance further expansion). For secondary investments, we classify by financing stage (buyout and venture/growth) and we distinguish between inflection assets (early stage) and mature assets according to asset/portfolio age. Green and light green highlight a segment with high relative attractiveness given Partners Group’s specific capabilities and deal flow. White highlights a neutral segment. Yellow and light yellow mean that Partners Group underweights the segment and requires even greater conviction during bottom-up analysis to pursue an asset.
You have worked in management and on the boards of some of the world’s most successful niche industrial and advanced manufacturing companies. How has the industrials sector evolved over the course of your career?

One development that might not be so obvious to the public is the shift toward controlling processes rather than products. In the mid-1980s, it was standard procedure for customers and suppliers to agree on a so-called “acceptable quality limit” (AQL). An AQL of 2% meant that even if two out of 100 samples provided by a supplier were out of specification, the total shipment was still considered acceptable. If we applied the same principle to an industry such as the semiconductor industry today, we would only produce scrap. For example, in order to produce a processor, the core of every computer, more than 1,000 process steps are required. That is why the whole industry has moved toward controlling these processes, and, as a result, the quality of components and products is much higher compared to 30 years ago.

Another phenomenon is that product development has become much more customer-driven. When I started my career, the attitude was that if you had a great idea, you would work on it. Once you had a solution, you would then look around to see if you could find a problem. As time-to-market has become a strong success factor in many industries, the development work has professionalized. If there is a visible customer need on the horizon, the first one who is able to meet that demand will make a profit. The flip side to this is that in the past, big inventions did not necessarily originate from customer requests. Take liquid-crystal displays (LCDs), for instance. Initially, researchers discovered that crystals would alter their behavior under the application of electrical current but had no idea what these products might become. They were even labeled “useless crystals” in the beginning. Today, we use LCDs every day in our smartphones, computer monitors and TVs. Therefore, I think we need both: the focus on customer needs as well as a certain degree of freedom for researchers.

Technological advances are contributing to increased automation across the broader industrials sector. What does this mean for the future of the sector?

In the future, “semiconductor-chips” will take over activities related to the handling, steering and controlling of manufacturing processes. In other words, we will see fewer humans in industrial facilities in many areas. At the same time, the quality of the processes and ultimately the quality of the final products will further increase, while the time required to manufacture them will decrease. This will enable certain industries to meet the demand for highly customized goods at a reasonable cost and within acceptable timeframes, even in high labor cost countries.

With over 35 years of experience in advanced manufacturing and a PhD in physics, Dr. Horst Heidsieck is more than qualified for his new role as Chairman of the Board at Partners Group portfolio companies Ammeraal Beltech and Megadyne Group. Here, he shares with us how automation is reshaping the industrials sector and what he believes the role of a board should be.
Dr. Horst Heidsieck has more than 35 years of experience in advanced manufacturing as well as a proven track record in senior management roles in the high-tech sector.

Most recently, Dr. Heidsieck became Chairman of the Supervisory Board of Megadyne Group and Ammeraal Beltech.

From 2014 to 2017, he served as Chairman of the Board of Directors of former Partners Group portfolio company VAT Group AG. Prior to that, he was Chief Executive Officer of Leybold AG and of Balzers Leybold Group within the Oerlikon Bührle Group. In addition, Dr. Heidsieck served as CEO of Heraeus Holding GmbH and of Demag-Holding S.à r.l. Since 2007, he has worked as a business and management consultant. Dr. Heidsieck holds a PhD in physics from the Technical University of Aachen, Germany.

In your view, what makes a merger successful, and, conversely, what can cause it to fail?

It is no secret that 70% of mergers fail or do not deliver the anticipated results. I do not believe they fail because of bad due diligence or incorrect assessments. I think they fail because cultural differences between companies are underestimated and not properly taken care of.

70% of mergers fail or do not deliver the anticipated results. I think they fail because cultural differences between companies are underestimated.

As far as Ammeraal and Megadyne are concerned, we are very aware of this challenge, particularly as we are confronted with a cross-border merger. I think an important first step was hiring a CEO for the combined entity who understands both cultures. Stijn Vriends is a Dutch national but has lived and worked in Italy for the past 15 years, meaning he can relate to the culture at both Ammeraal and Megadyne, which are based in the Netherlands and Italy, respectively.
What is the market opportunity for Ammeraal Beltech and Megadyne Group, and why does a merger make sense?

The merger of Ammeraal and Megadyne is all about growth. Though both companies already have strong market positions, there is additional expansion potential, particularly in the US and Asia. We have also identified a number of cross-selling opportunities. Finally, the combined entity will have more “fire power” when it comes to acquisitions and innovation.

You have worked with several private equity-owned companies, either in management or on the board. What, in your view, are the key attributes of a successful private equity firm?

The days when a private equity firm could buy a company with good cash flow, then sit and wait for it to deleverage are long gone. Today, private equity firms must have the competencies to identify where improvement potential exists on the sales side, in procurement, in the supply chain and other areas of operations. Furthermore, in my view, it has become more difficult to realize operational potential compared to ten or 15 years ago. It is no longer sufficient to hire a consulting firm and let it work independently. That is why the larger private equity firms have built up dedicated industrial teams that can bring the required expertise to the table and also steer specialist consultants. Additionally, they hire former executives like myself as senior advisors. I believe firms that have managed to build up operational expertise internally will have a competitive edge going forward.

You have also worked with public companies. How have your experiences of the governance practices, level of board involvement and management approach between public and privately owned companies differed?

My experience with privately owned companies is generally positive: investors, management and the board are aligned and focused on value creation from day one. Right from the start, a project plan is established, and individual improvement projects are identified and set up. The board then monitors the execution of these projects closely. Deviations from the plan are addressed in a timely manner, and management is asked to take corrective actions where necessary. I have noticed that in this context there is little room for politics as all parties involved know where the company has to go in order to generate the anticipated value creation within a given timeframe.

When it comes to public companies, I can speak to the German model, where you have an executive board and a supervisory board. While the executive board has a high degree of freedom, the supervisory board is only empowered to make decisions on certain key issues. For instance, the executive board will present the budget to the supervisory board but will not require its approval. The only real power a supervisory board has is to hire and fire members of the executive board and set their compensation. If the board feels that things are going in the wrong direction, it has to seek consent from the executive board before taking action. This is quite different to the approach adopted by the boards of private equity-owned companies.

The board should have a broader view and a longer time horizon than the management team, which is tied up in daily execution.

What do you believe the role of the board should be in ensuring a company’s continued success?

In my view, the board is ultimately responsible for the strategy and sustainable success of a company. The board should have a broader view and a longer time horizon than the management team, which is tied up in daily execution.

In the case of a company acquired by a private equity firm, the first step is to establish a plan with all the initiatives that need to be executed in order to create value. Experience has taught me that the board has to get the ball rolling early on and ensure that a frequent review pattern is established. Many value creation initiatives will have to be executed in parallel to the daily business, and that may create fatigue over the long term. This means the board has to ensure that at an early stage, successes are not only visible but also celebrated.
Private real estate
Providing solutions to complex situations.

With near-record pricing for all main property types globally and a backdrop of rising interest rates, we continue to search for value creation opportunities in off-market situations. In order to source these opportunities, a strong network and the ability to provide bespoke solutions are key.

Market overview
Global real estate transaction activity has further increased in the US and Asia-Pacific compared to last year, supported by high amounts of available capital. In Asia-Pacific, China and Japan remain the two largest markets. In contrast, European volumes are experiencing a marked slowdown and have fallen across most sectors, driven by lower levels of investment activity in the UK, Germany and Spain.

Since the Global Financial Crisis, low interest rates have supported real estate prices by lowering both borrowing costs and discount rates on future operating income. With the growth of real estate asset values, yields have compressed and are now at the lower end of their historical ranges across many markets. In parallel, global capital values have risen by around 30% since their low point in the cycle in 2009. Looking ahead, the potential impact of rising interest rates on the asset class warrants close attention.

The potential impact of rising rates on real estate
With rising rates in the US and further rate increases expected to come, we are more cautious on the mid-term outlook for US real estate as the spread between cap rates and 10-year US Treasury yields continues to narrow and is now below the long-term average of around 430bps. Historically, cap rate spreads have acted as a buffer to absorb rate increases without cap rates increasing in lock step. If yields continue to rise – as we expect them to – there will be a reduced capacity to absorb rate increases without upward movements in cap rates. This especially holds true if net operating income (NOI) growth is not able to offset the rate increases. Our broad estimate suggests that 5% of NOI growth can offset around 25bps in cap rate increase. NOI growth, however, while still above the long-term average of 3.2%, is slowing, as highlighted in the following charts.

Long-term spreads between cap rates and 10-year US Treasury yields

Long-term NOI growth in US real estate

PRIVATE REAL ESTATE
Vienna was recently awarded the top spot in the Global Liveability Index.

Our prudent underwriting standards take into consideration the impact of rising rates. We currently allow for a 50-100bps cap rate increase over our hold period. In addition, in this competitive environment and against the backdrop of rising rates, our continued focus on investments that have a value-add component provides us with the opportunity to actively drive NOI growth. In terms of property types, office, logistics/industrial and residential assets with tangible value creation potential or limited development risk still offer attractive opportunities in many parts of the globe, especially if sourced outside of competitive auction processes. For our older vintage investments, we are seeking exit options to lock in favorable market conditions and strong returns.

**Our current investment themes**

In spite of the near-record pricing for all main property types globally, we continue to focus on properties and cities benefiting from the transformative trends that will have a lasting impact on traditional real estate and enable superior growth. These include increased urbanization and the resulting demographic shifts generating demand for office and residential space as well as a growing e-commerce sector creating demand for logistics space.

In the residential sector, we like affordable built-to-let properties in expanding cities that attract diverse communities and suffer from a supply shortfall. In the office sector, we favor assets that require a capital injection for upgrades in cities with competitive rents and high-quality public transportation systems. For office developments, which we pursue very selectively, we like established office hubs outside of the main CBD areas and buildings that have a certain degree of pre-leasing secured. For industrial assets, we see relative value in XXL warehouses, “last mile” distribution facilities and hybrid office-industrial assets. Demand for these types of assets is increasing on the back of a growing e-commerce sector requiring large storage and distribution facilities. In addition, investments in technological improvements in logistics and distribution centers that allow tenants to enhance their supply chain, product chain and distribution channels are generating further demand for these segments. Meanwhile, the retail segment is generally outside of our focus given the pressure on the sector from e-commerce.

**Real estate sub-sector matrix: relative value focus areas and investable universe**

<table>
<thead>
<tr>
<th>Residential to let</th>
<th>Office</th>
<th>Industrial</th>
<th>Retail</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>CBD development</td>
<td>XXL logistics</td>
<td>Regional shopping centers*</td>
<td>Hospitality*</td>
</tr>
<tr>
<td>• Expanding cities</td>
<td>• Cities with supply constraints</td>
<td>• Regional distribution centers</td>
<td>• Premium fashion</td>
<td>• Diversified portfolios</td>
</tr>
<tr>
<td>• Areas with mass market appeal</td>
<td>• Active pre-leasing markets</td>
<td>• High-bay/cross-docked</td>
<td>• Leisure/food &amp; beverage</td>
<td>• Properties with established trading history</td>
</tr>
<tr>
<td>E.g. Vienna</td>
<td>E.g. Seattle</td>
<td>E.g. Australian East Coast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBD repositioning</td>
<td>Last mile logistics</td>
<td>District shopping centers*</td>
<td>Co-working*</td>
<td></td>
</tr>
<tr>
<td>• Capex-starved assets</td>
<td>• Urban infill locations</td>
<td>• Food &amp; non-food</td>
<td>• Flexible offer</td>
<td></td>
</tr>
<tr>
<td>• Submarkets with competitive rents</td>
<td></td>
<td>• Discount retailer-anchored</td>
<td>• Froreshold or leased estate</td>
<td></td>
</tr>
<tr>
<td>E.g. Paris</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-CBD development</td>
<td>Light manufacturing</td>
<td>Grocery units*</td>
<td>Senior housing</td>
<td></td>
</tr>
<tr>
<td>• Established office hubs</td>
<td>• Hi-tech industries</td>
<td>• Convenience offering</td>
<td>• Demographic-driven offering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Public transport connectivity</td>
<td></td>
<td>• Independent living</td>
<td></td>
</tr>
<tr>
<td>• Established industrial hubs</td>
<td>E.g. Denver</td>
<td>Urban infill locations</td>
<td>E.g. Florida</td>
<td></td>
</tr>
<tr>
<td>E.g. Shanghai</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hybrid office-industrial</td>
<td>Non-CBD repositioning</td>
<td>Retail warehouses*</td>
<td>Urban mixed-use</td>
<td></td>
</tr>
<tr>
<td>• Areas with good transport links</td>
<td>• Areas with good transport links</td>
<td>• Mixed product offering</td>
<td>• “Work-live-play” offering</td>
<td></td>
</tr>
<tr>
<td>• Properties with adjacent amenities</td>
<td></td>
<td>• Click &amp; collect potential</td>
<td>• Gentrifying suburbs</td>
<td></td>
</tr>
<tr>
<td>E.g. Sydney</td>
<td>E.g. Sydney</td>
<td></td>
<td>E.g. Brisbane</td>
<td></td>
</tr>
</tbody>
</table>

*Currently outside of our investment focus.

Note: bullet points in black highlight Partners Group focus areas.

Source: Partners Group, November 2018. For illustrative purposes only.
As markets remain liquid, we prefer to avoid competitive processes as a means of sourcing opportunities in order to avoid crowded segments with low upside potential. Instead, we are further emphasizing our focus on special situations. Often, this means pursuing investment opportunities that are inherently complex or that require a global footprint. In order to source, access and capitalize on these special situations, we make use of our network of over 350 general partners and operators, identifying opportunities to provide bespoke solutions in non-intermediated transactions.

We typically seek the following characteristics for these situations: a **bespoke structure**, i.e. opportunities that others are discouraged from pursuing given their global and complex nature (in a portfolio of assets context); a **trigger event**, i.e. opportunities that are unlocked by a special situation such as investor fatigue and/or discord; a **sourcing angle**, i.e. opportunities that can be secured off-market in an exclusive manner; and a **outperformance potential**, i.e. opportunities with clear value-added potential to generate outperformance.

### How we source special situation transactions

Partners Group has identified and screened over 1,500 opportunities to buy out or acquire single real estate assets or portfolios since 2014. Special situation transactions represent a significant proportion of this deal flow. They typically involve the acquisition of undercapitalized assets from a variety of different structures, including club deals, joint ventures and pre-Global Financial Crisis vintage funds.

These assets and their sellers are spread all across the globe and are best accessed through local channels. In addition, our preference is to source these opportunities in a proprietary manner, avoiding highly competitive auction processes. In order to execute a successful global real estate special situation strategy and proactively generate a broad yet executable deal flow, we make use of our extensive network of over 250 general partners and over 100 operators, with which we have long-standing relationships. Interacting with these contacts on a regular basis and actively developing investment opportunities is key as it can take between three and 24 months for any one of these opportunities to become actionable.

By consistently interacting with our network of operators and general partners, we can obtain information about special situations requiring bespoke solutions early on, which then allows us to step in as a solution provider and price maker, rather than a price taker.

### Residential: targeting affordable residential to let

A number of major cities in the US, Asia-Pacific and Europe are benefiting from strong underlying demographics, often aligned with growth in employment levels in the business services and technology industries. Examples include Austin and Phoenix in the US, Singapore and Hong Kong in Asia-Pacific and Berlin and Vienna in Europe. These cities typically have a limited long-term supply of land, which contributes to low vacancy rates and mass market appeal based on their attractive amenities and good public transportation systems. In these locations, we believe acquiring and developing flexible residential properties to let is very appealing. Vienna, for instance, has clearly benefited from these trends. Over the past ten years, Vienna has had an average population growth rate of 1.2% p.a., outperforming peer cities such as Madrid and Paris. Within the same timeframe, it has experienced a shortfall of more than 25,000 homes as the scarce land available for development has been used for competing properties, such as office and hospitality buildings. In addition, in 2018, Vienna was awarded the top spot in the Global Liveability Index, further increasing its attractiveness from an investment perspective.

### Major cities in the US, Asia-Pacific and Europe are benefiting from growth in employment levels in the business services and technology industries.

To benefit from these positive trends, we recently agreed to acquire **DC Tower 3**, a built-to-let residential development in Vienna. The property is located on Danube Island, a growing office district with over 470,000 square meters of office space and high occupancy levels at around 95% on average. The district is home to the United Nations and to Austria's largest conference center, which hosts over 100,000 people each year. Danube Island is also a popular hotspot for leisure activities. It features the largest open-air festival in Europe, with more than 3 million visitors per year, and Copa Cagrana, a project to redevelop a 300-meter leisure area right by the waterfront. DC Tower 3 will consist of 832 units of flexible residential accommodation (238 corporate, 264 young professional and 330 student apartments), including 2,500 square meters of community space and 2,400 square meters of outdoor space, catering to students and professionals alike. Rental prices will vary between EUR 700/month for a student studio and EUR 2,200/month for a serviced double-room apartment. The transaction was sourced off-market through our bilateral auction processes.

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1 The Economist Intelligence Unit, August 2018.
2 Greystar; Knight Frank, January 2018.
relationship with the developer. The value creation plan for the property is to generate value uplift by stabilizing the asset at market-rate occupancy and earn a 5.9% running NOI yield.

**Office: seeking developments outside of CBDs**

Office rents continue to grow on a global scale, especially in prime markets. Cap rates for the segment fell 15-20bps year on year, making it more challenging to find attractive investment opportunities from a relative value perspective. Our focus has therefore shifted toward office properties in major Tier 1 and economically vibrant Tier 2 cities across all regions that are located outside of CBD areas, offering relative discounts to rents in CBD locations. Importantly, these non-CBD areas should be well embedded into the local infrastructure, with access to major transportation links. They should offer a strong amenity base as well as proximity to more affluent neighborhoods. Finally, these locations should exhibit robust market conditions, continuous absorption capacity and proven rental levels from existing comparable buildings. Examples of cities where we find strong relative value in non-CBD office areas include Sydney and Melbourne in Asia-Pacific, Paris and Frankfurt in Europe and New York and Denver in the US.

In September 2018, for instance, we agreed to develop **Block E Belleview Station**, located in the Denver Tech Center (DTC) submarket of Denver. DTC was formed in 1962 as a master-planned business center and is home to approximately 10 million square feet of office space and a very diverse set of companies. The DTC submarket is well connected to Denver CBD and the airport by a rail and bus system. The daytime employment base is rapidly increasing in DTC and now stands at over 100,000 people, making it one of Denver’s biggest employment hubs. Moreover, DTC benefits from low vacancy rates of around 5% for Class A developments that are easily accessible by public transport and is close to affluent residential neighborhoods. The project, which is part of a 2.2 million square feet planned development, will consist of 408,000 square feet of office space and was acquired at a 25% discount relative to comparable sales today. The value creation plan involves a lease-up strategy, which will bring the development from 40% pre-leased to a stabilized occupancy level of 96%. The project was sourced on a proprietary basis through our strong relationship with the developer and thanks to our ability to provide a holistic solution.

**Logistics: demand for hybrid office-industrial space**

The industrial/logistics sector continues to benefit from the shift away from traditional store-based retail toward online retail, especially in the US, UK and China. This directly benefits XXL warehouses and light industrial assets as online retailers require logistics facilities to store and distribute their goods. The light industrial sector, a smaller segment that typically has up to 50% of office content, is becoming increasingly relevant in many cities around the globe. As industrial fundamentals for this type of property remain strong in select cities with high employment growth in the science and technology industries, we see attractive investment opportunities. Raleigh-Durham in the US is one such example. The city is forecast to be the second fastest-growing large city in the US between 2018 and 2030, with a 71% population growth rate expected over the period. This is mainly due to job creation within the technology industry. Last-mile facilities in the area are attracting tenants profiting from the expansion of the e-commerce, science and technology industries. This makes Raleigh-Durham an attractive city not only from an industrial perspective – it is the tightest industrial market in the Southeast, with a 3.6% vacancy rate.

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3 Real Capital Analytics, August 2018.
4 CBRE, May 2018.
5 Costar, May 2018.
6 US Census Bureau; UN Population Division, August 2018.
for light industrial properties— but also from a human capital perspective. In fact, Raleigh-Durham is the city generating the second highest number of technology-related jobs in the US and is also home to three Tier 1 universities. In view of this, we recently acquired a light industrial portfolio comprising seven real estate assets. Six of the assets are located in primary urban infill markets in Raleigh-Durham, and 55% comprise industrial warehouses. The Raleigh-Durham sub-portfolio consists of 2.6 million square feet and represents around 25% of the total light industrial inventory in the area. This gives us a strategic and dominant position in the market, especially as there are currently no new or proposed constructions for light industrial products in the area. We proposed a single-buyer solution to keep the management team and portfolio intact and benefited from the maturity of a 2005 vintage fund with no remaining options for further extension. The value creation plan foresees the development of 400,000 square feet of additional new light industrial space to further grow the portfolio’s footprint in the area and provide options for different kinds of tenants as well as a 13% rental growth and 5% occupancy improvement.

Retail: favoring mixed-use properties in urban areas

The traditional retail segment continues to experience pressure from online retail, and traditional retailers are looking to embrace alternative business models. We see further cap rate expansion for fashion-anchored shopping centers in all regions. On the other hand, we believe that there is still demand for fresh food-anchored local supermarkets in resilient areas. As this niche segment typically offers small investment sizes on a standalone basis, it is currently outside of our focus area. However, if an asset is part of a mixed-use strategy together with an office or residential component, it can offer good relative value. For such mixed-use strategies, we look for cities that benefit from a diversified economy with high standards of living and a broad leisure offering, which is especially sought after by a young workforce with tertiary education.

Similar to the office sector, we favor non-CBD locations with good accessibility and strong local infrastructure as we believe such areas offer better value than comparable CBD locations.

Some of the locations we are targeting include Seattle and San Diego in the US, Barcelona and Munich in Europe and Brisbane in Asia-Pacific. Brisbane, for instance, benefits from strong underlying demographics, including a large proportion of dual-income households (41% vs. 23% on average in Australia), a high proportion of residents in the 17- to 34-year-old bracket (50% vs. 25% on average in Australia) and a strong forecast population growth rate of 30% over the next five years. A recent example of our ability to capitalize on this trend is our acquisition of a portfolio of two assets in Australia. The main asset accounts for 75% of the portfolio and is a mixed-use asset in Brisbane’s Fortitude Valley suburb. The suburb is located 1.4 kilometers from Brisbane’s CBD and 150 meters from its premier retail and leisure destination. Moreover, Fortitude Valley is expected to experience a strong increase in high-rise residential apartments over the next two years, with another 4,000 units due to be added to the area. The main asset in the portfolio comprises a mix of office and concourse retail spaces (F&B, supermarket) and a car park. The value creation plan involves the repositioning and upgrading of the retail concourse by creating an additional 34% of space as well as a major refurbishment and lease-up of vacant office space to bring it to Grade A standard. The opportunity was sourced from our network and was triggered by a fund liquidation.

How we realize relative value potential in private real estate

We focus on providing solutions to operating or general partners that do not have the appetite, tenure or means to support asset-level business plans for their existing assets or portfolios. We continue to prefer asset strategies that fall into one or more of the following sub-strategies:

**Buy below replacement cost**

We target assets with low valuations located in rebounding markets that can be repositioned and then leased-up by under-cutting market rents.

**Buy, fix and sell**

We seek older buildings in great locations that are in need of owner-oriented asset management initiatives.

**Develop core**

We target markets with strong long-term fundamentals and trends that support additional absorption to selectively develop properties through ground-up construction.
Relative value analysis

Our outlook from a relative value perspective has generally remained unchanged over the past year. From a sector perspective, we continue to overweight office, logistics/industrial and residential properties in all regions. Not surprisingly, retail continues to be an underweight due to uncertainty in the sector. For office properties, we focus mainly on repositioning capex-starved assets with competitive rents in both CBD and strategic non-CBD locations that benefit from strong underlying demographics. On a more opportunistic basis, we also look into office property developments in established hubs that experience supply constraints and have good pre-leasing conditions. The logistics/industrial sector benefits from strong e-commerce sales across all regions, especially in China, the US and UK. This creates resilient demand for hybrid office-industrial properties, XXL warehouses and ‘last mile’ distribution facilities, although investor demand has pushed up capital values to all-time highs in many markets. Finally, we overweight residential in the US and Europe and pursue affordable opportunities in expanding cities that benefit from mass-market appeal, supply shortfall and strong population growth.

Meanwhile, pricing for traditional real estate secondaries has picked up further, and we are neutral to slightly underweight on the segment. We strategically overweight non-traditional secondary assets across all regions, especially in the US due to our focus on special situations. These assets often benefit from less competition given their complex nature and can offer attractive opportunities for portfolio buyouts.

Relative value matrix

How to interpret the table: the relative value matrix divides the private real estate market into various segments, defined by regions (Americas, Europe and Asia-Pacific), investment types (directs, secondaries and primaries), debt and sectors. Direct and primary investments are classified by investment type (core, value-added and opportunistic). For secondaries, we distinguish between traditional and non-traditional secondaries. Green and light green highlight a segment with high relative attractiveness given Partners Group’s specific capabilities and deal flow. White highlights a neutral segment. Yellow and light yellow mean Partners Group underweights the segment and requires even greater conviction during bottom-up analysis to pursue an asset.
Private debt
Protecting capital in a competitive market.

As leveraged loan markets remain competitive, we continue to be selective and focus on protecting yield by investing directly in defensive, cash generative businesses, negotiating downside protection in loan documents and actively managing liquid loan portfolios.

How we classify the debt market
Partners Group views the private debt market in three distinct categories:

- **Liquid loans**: senior loans broadly syndicated by banks, which typically offer relatively low returns and can be used as a cash management tool by fixed income investors because of their high liquidity. As part of our CLO business, we target smaller investments in large liquid loans, where tranche sizes can be in excess of USD 1 billion and issued by stable companies.

- **Direct loans**: loans that are senior in the capital structure but privately placed by a single lender or small group of institutions and thus generally illiquid. Here, we target companies with EBITDAs in excess of USD 20 million.

- **Subordinated loans**: debt tranches that are subordinated in the capital structure, including second lien, mezzanine and holding company debt. These investments tend to have very limited liquidity but offer the highest return potential for debt investments. In subordinated transactions, we leverage our platform and scale to provide subordinated solutions to sponsors, where investments can be in excess of USD 100 million.

Market overview
Stable demand for financings driven by high transaction activity continues to serve as a tailwind for institutional investors in private debt. Investors have generally increased allocations to floating-rate private debt investments to protect against interest rate increases and obtain stable yield. While rising rates are at the moment predominantly a US theme – and to a lesser extent a UK theme – there are early signs that positioning for higher rates is becoming a topic in the Eurozone as well. Overall, the inflow of liquidity into the market, as well as the first steps toward deregulation in the US market, have kept competition for high-quality investments at a healthy level.

Investors have generally increased allocations to floating-rate private debt to protect against interest rate increases and obtain stable yield.

US market overview
After a record-setting 2017, senior leveraged loan issuance is heading for another strong year, although at slightly lower volumes. Demand for second lien remains robust and is even finding its way into syndicated processes in the US.\(^1\) In combination with strong demand for new loans – driven in

\(^1\) S&P LCD, Global Leveraged Lending Report, Q3 2018.
particular by collateralized loan obligations (CLOs) and business
development companies (BDCs) – new issue spreads continue
to be tight, although we have noted an uptick to 388bps in Q3
2018. At the same time, the floating 3-month Libor base rate
currently stands at 2.5%, providing a positive impact on private
debt investment returns for USD investors.

**Base rates plus weighted average new issue institutional senior debt spreads**

![Graph showing base rates plus weighted average new issue institutional senior debt spreads.](image)

Leverage levels for buyouts in the US are still high at close to
6x, similar to pre-Global Financial Crisis levels. While equity
cushions continue to be very high at around 40%, compared to
just over 30% in 2007, prices in the private equity market have
increased since then as investors have been willing to pay higher
valuation multiples. In this environment, focusing on credit
quality is crucial.

Mezzanine tranches in the US can be found in small-/mid-cap
situations where companies do not have access to the wider
capital markets. However, we find more attractive relative
value in second lien for (upper) mid-cap companies. These
businesses tend to exhibit superior stability and resilience – and
the second lien debt is secured. Second lien spreads continue
to be attractive at around a 390bps return difference to first
lien spreads. In select cases, investing in preferred equity in
attractive sectors with high-quality private equity partners
or taking equity kickers to increase returns can be attractive
relative value opportunities. We further expect attractive risk/
return profiles in unitranche financings, where we can position
ourselves as the sole debt investor in a business and therefore
gain more influence in documentation.

**European market overview**

Senior leveraged loan volumes in Europe are tracking at roughly
the same pace as last year. Unlike in the US, they remain far
below the record levels seen in Europe in 2007. Similarly, CLO
new issuance volumes in Europe (EUR 20.8 billion) are on track
to surpass last year’s issuance but remain well below the full-
year record level of over EUR 35 billion seen in 2006.

Leverage levels for buyouts in Europe increased slightly in Q3
2018 to 5.6x. In contrast to the US, this remains well below
pre-crisis levels. Moreover, equity cushions in Europe have
increased to near-record levels of 47%, although we expect this
to normalize and come down slightly in the coming months. On
the back of this supply and demand dynamic, spread levels in
Europe have seen upticks in the first three quarters of 2018
to a level of 402bps, although Euribor remains in negative
territory. We have further noted an increase in the rate of
repayments, with debt often being repaid in one to three years.
Early repayments require an even stronger focus on sourcing
transactions and re-investing capital going forward.

Unlike in the US, the regulatory environment remains stable,
and we observe no deregulation efforts. Relative value remains
to be found in mid-cap direct loans, in particular club-style
executions, which can offer a premium and solid downside
protection, with a small group of high-quality lenders in the club.
Directly placed second lien debt continues to be an attractive
financing solution for issuers of mid-cap transactions given the
limited execution risk, the certainty on the terms and conditions
of the financing and the comparable cost to syndicated
solutions. For these transactions, the flexibility to offer multiple
European currencies can give private debt providers an edge. In
certain cases, we have also found relative value and invested in
payment-in-kind (PIK) transactions.

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2 S&P LCD, Global Leveraged Lending Report, Q3 2018.
3 Ibid.
Collateralized loan obligation market dynamics

Collateralized loan obligations (CLOs) currently account for a large portion of the buyer base for first lien liquid loans at approximately 63% in the US and 58% in Europe and have continued to be an important driver of supply and demand dynamics throughout the liquid loan market.

In the second quarter of 2018, we observed spreads widening in the first lien liquid loan market in Europe. While some of this can be attributed to macro concerns (political risk in Italy and trade war fears), there was also a noticeable pull back by AAA CLO investors, with AAA margins rising by 10-20%. Rising AAA margins then contributed to the widening spreads.

We continue to believe that managing first lien liquid loans within a CLO structure is attractive. **CLO equity benefits from long-term, non-mark-to-market financing and has demonstrated the ability to act as an “anti-cyclical” investment.** Given the fact that CLOs can lock in attractive spreads, any spread widening at the asset level will benefit investors. We have found that in managing CLO structures prior to the last financial crisis, we were able to take advantage of wider loan pricing and market opportunities when the cycle turned. We have raised CLO structures in the current market with the view that our CLO equity investors will again benefit from us being able to take advantage of future market volatility and price widening if the cycle turns.

Our current investment themes

**Direct loans in the US: investing selectively across attractive sub-sectors**

Mid-market and upper-mid-market direct loans have continued to offer the most attractive return potential in private debt in the US. Having access to broad deal flow from high-quality private equity partners remains key to investing selectively and building well diversified credit portfolios with downside protection. Moreover, we remain focused on identifying certain attractive sub-sectors, particularly within IT, healthcare and business services, which exhibit defensive characteristics.

One recent example of an investment into an attractive sub-sector within business services is the unitranche investment we provided to Apex Group (Apex) in order to fund its acquisition of Deutshe Bank Alternative Fund Services. Apex specializes in fund administration and provides middle-office solutions, regulatory reporting, capital introduction and other services. While fund administration is an essential service in the financial industry, it is often outsourced to independent specialists. The sector has proven to be stable, as fund administration services are required across different market environments, and the company exhibits consistent, contracted revenues and low customer churn. Moreover, alternative investment funds have been increasingly outsourcing fund administration services, which are critical to operations. This is true for the hedge fund industry, where approximately 80% of these services are outsourced, and for the private equity industry, where 30% are outsourced, with room to grow.

Throughout the sourcing and due diligence of the investment, we were able to leverage our longstanding relationship with the private equity owner of Apex as well as our existing knowledge of Apex’s acquisition targets. Once Apex’s additional acquisition of M.M. Warburg’s Asset Management Servicing business is complete, it will make Apex the third largest independent fund administrator globally in terms of assets under administration.

Generating broad, high-quality deal flow and remaining disciplined – even in stable and attractive sub-sectors that we overweight – is key in the current environment characterized by an increasing lack of adequate downside protection. For example, a US pet supplies retailer recently priced an incremental financing to fund the acquisition of an online retailer to complement its brick-and-mortar retail business. As we conducted due diligence on the opportunity, we identified issues with its covenant package, specifically its restricted payments and permitted investment carve-outs, which provided the ability to spin off the online retailer, thereby moving collateral away from creditors. We therefore decided to step away from the transaction because of the lack of appropriate downside protection, despite having identified the pet services sub-sector as attractive.

**Direct loans in Europe: providing tailor-made structures and supporting buy-and-build**

In Europe, we continue to offer tailor-made structures to meet company-specific needs and to back category winners in our debt portfolio with add-on acquisition financing, searching for attractive opportunities with appropriate downside protection. Both strategies provide us with a competitive advantage among other sources of financing.

One example that illustrates our ability to offer a bespoke solution and back a successful company in our portfolio with add-on acquisition financing is our investment in Independent Vetcare (IVC). Headquartered in Bath in the UK, IVC is a veterinary platform specializing in the treatment of smaller animals for both routine and complex treatments. Founded in 2000, IVC offers a wide range of services including spaying and neutering, dental care, dermatology and oncology treatments.
in 2011, the company is one of the leading consolidators in the industry. Since 2017, under its current ownership, the company has increased its footprint via acquisitions, expanding beyond the UK. We have supported IVC’s growth ambitions by providing follow-on debt financing and have participated in multiple debt raises since our initial investment.

IVC is also an example of a company operating in a highly attractive sub-sector. A prominent theme we expect the company to benefit from is the continued adoption of specialized pet care, which is a by-product of the megatrend toward the humanization of pets, whereby pet owners are increasingly treating their pets like family members. The proportion of dog and cat ownership within the population is generally stable and is driven by underlying human population growth. The percentage of pets under insurance coverage is expected to increase, benefiting the company as a specialty care player. The number of pets in households without children is increasing more rapidly, and there is a willingness to pay for care along with more advanced treatments and early diagnosis. Our financing structure provided the company with the flexibility to use a revolving credit line for acquisitions and then subsequently “clean down” (i.e., repay) the credit line with an additional term loan, enabling speed of execution. The target return for the first lien financing is 5.7% (GBP).  The loan also benefits from a financial maintenance covenant providing downside protection.

For illustrative purposes only. There is no assurance target returns will be achieved.

**Spotlight on an attractive sub-sector**

Our Industry Value Creation team is constantly looking for attractive sub-sectors within the industries in which we invest. This enables focused deal sourcing and allows us to capitalize on multiple investments in the same sub-sector while maintaining our overall diversified approach. An example of a segment identified by our business services specialists is the **outsourcing of business services**. We find that this sub-sector has become more relevant as increased regulation in certain sectors has led to a need for both cost optimization and specialized knowledge. We have invested in this theme by supporting companies such as **Apex Group**, a provider of outsourced fund administration, **Ascensus**, a provider of back-office services such as record keeping, administrative and compliance support for retirement and college savings plans, and **SAI Global**, a global provider of solutions for managing compliance risk, among others. We will continue to develop additional opportunities in this area on a global basis.

**Direct loans in Asia-Pacific: cross-border and non-bank institutional financing**

Demand for cross-border financing remains strong as private equity firms in Asia continue to acquire US and European assets. Recent examples include our financing to support Baring Private Equity Asia’s acquisition of US-based **Prometric**, a leading educational support solutions provider with services comprising test delivery, analysis and development. Partners Group was the sole provider of second lien debt in the transaction. Another example is our second lien financing to support Primavera Capital’s acquisition of **Spring Education Group**, the leading private operator of Pre-K through 12th grade schools in the US with over 220 facilities. Both investments fit squarely into our sectoral overweight on the educational space.

We also continue to see demand from private equity firms in Australia and the broader Asia-Pacific region for unitranche structures. Unitranche debt, which combines elements of both senior and subordinated debt into a single stretched senior tranche, has provided a competitive and differentiated offering for sponsors as compared to traditional bank offerings, which remain conservative in this space. A recent example of our ability to cater to this demand is our financing of a leading **accounting and wealth management service provider** in Australia.

**Liquid loans: diversification and active management**

The first lien liquid loan market continues to be characterized by robust levels of liquidity through continued new issue CLO formation and inflows from other institutional investors into the market. Increasingly, liquid loans are seen as a useful cash management tool given their high levels of liquidity. What is more, in a scenario of rising rates, they are being viewed as an alternative to more traditional high-yield bond allocations given they are floating-rate instruments and thus have almost zero interest rate duration, unlike rate high-yield bonds. Liquid loans also benefit from first-ranking security and have consistently demonstrated lower default rates and higher recovery rates than high-yield bonds.

This dynamic has led to a notable uptick in the average price levels in the secondary loan market, where currently 36% of USD loans are trading above par. While we did see somewhat of a pullback in secondary loan pricing levels in mid-2018, in general, our investments in the liquid loan market have been focused.
on the primary market, where we can leverage relationships from our direct loan business. We have taken advantage of the weaker market during this time to invest in primary loans at reasonably attractive pricing levels. One example is Sivantos, the hearing aid manufacturer, which priced at Euribor + 4.0%. Another is Verifone, a market-leading global point-of-sale and financial payments services provider. The USD 1.75 billion first lien term loan was priced at Libor + 4.0%. We used the relative strength of the secondary loan market throughout most of H1 2018 to reduce holdings in existing names above par in order to make room for primary allocations, with the aim of generating additional return and a more diversified portfolio of liquid loans.

Our approach in general when investing in the liquid loan market is to have a highly diversified portfolio yet follow a “bottom-up” due diligence process while overlaying industry macro views consistent with our overall market outlook. The liquid loan market comprises over 1,500 companies whereas our portfolio currently consists of approximately 250 different companies, with our largest industry exposures (healthcare, business services and technology) aligning with our overall industry views across the private debt business. In contrast, we underweight the energy sector and CCC assets.

How we achieve superior downside protection in direct lending

Today, direct lending deals, particularly in the large-cap space, have incorporated many of the issuer-friendly developments first seen in the syndicated market, including the erosion of financial maintenance covenants and looser negative covenants. Direct lending, however, still affords us the opportunity to achieve downside protection above that available in the syndicated market through the following measures.

Negotiating legal documentation

When looking to take a subordinated debt position, a strong focus on the often-overlooked inter-creditor agreement can ensure we are not disadvantaged against senior creditors in a restructuring scenario and that our position in the capital structure is not diluted over time. Including an anti-layering clause, ensuring junior creditors are not obliged to vote as directed by the security agent in an enforcement scenario and ensuring any distressed disposal takes place pursuant to a competitive auction process in which we are entitled to a credit bid are all examples of how we gain protection.

Protecting against “value leakage”

Direct deals offer the chance to obtain better protection against “value leakage” (i.e. cash leaving the restricted financing group) as increased negotiating power from being one of a handful of lenders, compared to being a “terms taker” in a broad syndication, typically leads to more conservative basket sizes for restricted payments and restricted investments.

Holding significant positions

A useful tool in direct lending is the ability to hold a significant portion of a debt tranche and therefore be able to exercise control/negative control over voting rights. This typically leads to faster and more efficient dialogue with sponsors in the event of a breach of the terms of a facility agreement.

Conducting “private equity-style” due diligence

As an investment manager with verticals across private equity, private infrastructure and private real estate, we think like owners when conducting due diligence on any asset on the private debt side. This approach allows us to underwrite what we believe are the best assets. Notably, we have maintained a global annualized senior loan default rate of 0.24% since 2012, a testament to our focus on superior downside protection.

Annualized default rate since 2012

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<tbody>
<tr>
<td>PG 1st lien</td>
<td>0.24</td>
<td>0.53</td>
<td>0.24</td>
<td>0.24</td>
<td>0.24</td>
</tr>
<tr>
<td>PG 2nd lien</td>
<td>0.53</td>
<td>0.53</td>
<td>0.53</td>
<td></td>
<td></td>
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<tr>
<td>Market (1st &amp; 2nd lien)</td>
<td>2.16</td>
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</table>

Note: Partners Group default rates are calculated as the remaining principal of defaulted loans at default as a percentage of the moving average of the total balance as of the beginning and end of a given quarter. The market rate uses the S&P/LSTA US Leveraged Loan Index (LLI) and the S&P European Leveraged Loan Index (ELLI); the global figure is weighted based on regional investment volumes.

Source: Partners Group; LLI; ELLI, Q3 2018.

10 Partners Group, as of Q3 2018.
Relative value analysis

We have divided our private debt matrix into the following categories: PIK/preferred equity direct, mezzanine direct, second lien direct, first lien direct, first lien liquid and liquid loan secondaries.

We overweight PIK and preferred equity transactions in the mid-/small-cap space in Europe as well as large-cap second lien direct debt investments and large-cap first lien liquid loan investments in the US. Despite lower first lien spreads, the US market continues to offer an attractive risk/reward opportunity set, also taking into consideration the advanced stage in the business cycle.

In both the US and Europe we overweight large-cap liquid loan investments and mid-/small-cap first lien direct investments. In the second lien space in Europe, we remain highly selective given the limited issuance activity and more competitive environment. Within our key investment strategies, we continue to focus on companies with three defining characteristics: recession resilience, stable recurring cash flows and high cash conversion levels within the industry sectors identified by our industry experts, highlighted in green below.

How we realize relative value potential in direct and subordinated loans

Offer tailor-made structures
We offer flexible and tailor-made capital structures that support companies’ specific cash flow profiles and working capital needs.

Target attractive sub-sectors
We target sub-sectors within industries where we see above-average sector resilience and where we have the depth of experience and high confidence in underlying growth fundamentals.

Support buy-and-build strategies
We support successful sponsors and management teams in their buy-and-build strategies by providing add-on acquisition financing in a timely manner, particularly under strict time constraints.

Relative value matrix

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<thead>
<tr>
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<th>NORTH AMERICA</th>
<th>EUROPE</th>
<th>ASIA/EMERGING MARKETS</th>
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<tbody>
<tr>
<td>PIK/preferred equity direct</td>
<td>Large</td>
<td>Mid/(small)</td>
<td>Large</td>
</tr>
<tr>
<td>Mezzanine direct</td>
<td>Large</td>
<td>Mid/(small)</td>
<td>Large</td>
</tr>
<tr>
<td>Second lien direct</td>
<td>Large</td>
<td>Mid/(small)</td>
<td>Large</td>
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<tr>
<td>First lien direct</td>
<td>n/a</td>
<td>Mid/(small)</td>
<td>n/a</td>
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<tr>
<td>First lien liquid</td>
<td>Large</td>
<td>Mid/(small)</td>
<td>Large</td>
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<tr>
<td>Liquid loan secondaries</td>
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<td>Mid/(small)</td>
<td>Large</td>
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<tr>
<th>GLOBAL</th>
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<tbody>
<tr>
<td>Media/ telecommunications</td>
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</tbody>
</table>

How to interpret the table: the relative value matrix divides the private debt market into various private debt segments, defined by regions (North America, Europe and Asia/emerging markets), debt strategy (PIK/preferred equity direct, mezzanine direct, second lien direct, first lien direct, first lien liquid and liquid loan secondaries) and industry sector. In each segment, we classify the investments by size (mid-/small- and large-cap). Mid/small relates to companies with EBITDA under USD 50m. Large relates to companies with EBITDA over USD 50m. Green and light green highlight a segment with high relative attractiveness given Partners Group's specific capabilities and deal flow. White highlights a neutral segment. Yellow and light yellow mean that Partners Group underweights the segment and requires even greater conviction during bottom-up analysis to pursue an asset.
Private infrastructure
Focusing on the right trends.

As the market remains highly competitive, we continue to focus on the trends that we believe will have a lasting impact on the infrastructure asset class and enable superior growth. These include the shift toward clean, more efficient energy and the need for ancillary infrastructure business services.

Market overview
The infrastructure asset class has experienced an impressive growth trajectory, with both transacted volumes and available capital growing at a high pace over the past few years. The continued increase in demand from investors has led to more competition in the sector and is putting upward pressure on valuation multiples. In turn, this is leading to lower overall expected returns, particularly for core operating assets. Investors justify paying high prices by pointing to the quality of the underlying assets and the long-term nature of infrastructure investments – a compelling argument in the past few years’ low-yield environment. However, as interest rates are set to rise in the US and potentially elsewhere, and as the promise of further growth in valuations appears to be slipping away, the risk of overpaying is high.

Looking at how public utilities have performed during past rate hike cycles, it becomes clear how sensitive infrastructure valuations are to interest rates. The following chart illustrates two findings: valuations are cyclical, and periods of rising rates have usually coincided with declining valuation multiples.

For Partners Group as an investor, these observations have two main implications. On the one hand, we ensure that we maintain our portfolio’s exposure to rising interest rates at a minimum. This means that we select investments with inflation-linked or correlated revenues and low correlation to GDP and hedge the cost of debt. Additionally, in order to limit the potential impact of buyer discount rates at exit in light of rising rates, on average, we have prudently assumed over 10% multiple contraction in the underwriting of our investments over the last two years.

On the other hand, we focus on investments that have a value-add component, providing us with the opportunity to actively shape business strategy and manage operations to increase profitability. We have long emphasized the need for investors in this environment to build value rather than buy it, and we continue to seek opportunities to create value through our three key strategies: operational value creation, platform expansion and building core (see box text on page 34). These strategies allow us to actively achieve multiple expansion in our assets by
De-risking and scaling up their asset base and leveraging non-market-based drivers such as earnings growth.

Our current investment themes

In terms of originating and executing investments, we continue to focus on the global trends that we believe will generate attractive infrastructure investment opportunities for some time to come. These include the global shift toward clean and more efficient energy, the need for ancillary infrastructure business services and the disruption in traditional energy resource flows as a result of the shale gas revolution in the US. The latter has significant implications not only for the energy industry itself but also for the transportation industry. Across all our key sectors, we continue to search for value in non-core segments of the market. Currently, we see particular value in services-focused infrastructure businesses, such as transport logistics or energy management businesses and infrastructure companies providing ancillary power services. We also continue to overweight the renewable power sector as well as assets and services in the midstream space, including storage and export logistics for natural gas and gas products.

Regardless of the sector or sub-sector, all potential investment opportunities must be underpinned by the opportunity to create value during our ownership. Active value creation in infrastructure requires extensive resources and operational capabilities. We are able to leverage our global platform to access a proprietary toolkit of best practices, benchmarks and service providers not only in infrastructure but also across private markets. We have a large in-house Industry Value Creation and Asset Management team that acts as an integral part of our investment underwriting. During the hold period, these operational specialists are active as board members, advisors and coaches to management in our infrastructure projects and companies. In addition, we thoroughly screen potential external board members for our assets and are highly selective in terms of their relevant experience and value-add to the asset.

Infrastructure sub-sector matrix: relative value focus areas and investable universe

<table>
<thead>
<tr>
<th>Transport/logistics</th>
<th>Power</th>
<th>Energy infrastructure</th>
<th>Social infra/PPPs</th>
<th>Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Services</strong></td>
<td></td>
<td><strong>Energy management</strong></td>
<td></td>
<td><strong>Specialty communications</strong></td>
</tr>
<tr>
<td>Transport logistics</td>
<td>Ancillary power</td>
<td>Energy management</td>
<td>Public services</td>
<td>Specialty communications</td>
</tr>
<tr>
<td>• Integrated supply chain services</td>
<td>• Distributed generation</td>
<td>• Metering/sub-metering</td>
<td>• Transport solutions: mobility as a service</td>
<td>• Emergency communications</td>
</tr>
<tr>
<td>• Multi-modal transportation</td>
<td>• Installation of power supplies</td>
<td>• Energy equipment leasing</td>
<td>• Digitization of public services</td>
<td>• Network management &amp; monitoring</td>
</tr>
<tr>
<td>• Air/rail/water transportation equipment leasing</td>
<td>• Utility scale battery storage</td>
<td>• Utility location services</td>
<td>• Smart cities</td>
<td></td>
</tr>
<tr>
<td><strong>Port</strong></td>
<td><strong>Renewable - wind/solar</strong></td>
<td><strong>Transmission</strong></td>
<td><strong>Health</strong></td>
<td><strong>Fiber</strong></td>
</tr>
<tr>
<td>• Port operations</td>
<td>• Building core offshore wind</td>
<td>• Electric transmission</td>
<td>• Public/private health services</td>
<td>• Wholesale connectivity</td>
</tr>
<tr>
<td>• Terminal logistics development</td>
<td>• Platform expansion of onshore wind &amp; solar</td>
<td>• Smart grids</td>
<td>• Elderly care/child care</td>
<td>• Network builds for Telcos</td>
</tr>
<tr>
<td>• Automation of towage &amp; freight handling</td>
<td>• Integrated renewables platforms</td>
<td>• Stand-alone transmission networks</td>
<td>• Medical facilities</td>
<td>• End-user/bridging rural divide</td>
</tr>
<tr>
<td><strong>Surface transportation</strong></td>
<td><strong>Renewable - other</strong></td>
<td><strong>Distribution</strong></td>
<td><strong>Housing &amp; education</strong></td>
<td><strong>Data centers</strong></td>
</tr>
<tr>
<td>• Public transportation</td>
<td>• Hydro</td>
<td>• Gas &amp; electric utilities</td>
<td>• Building &amp; convenience utilities</td>
<td>• <strong>Hyper-scale data centers</strong></td>
</tr>
<tr>
<td>• Roads &amp; short line rails</td>
<td>• Waste-to-energy solutions</td>
<td>• District heating/cooling</td>
<td>• Higher education asset concessions</td>
<td>• <strong>Asset carve-outs from strategics</strong></td>
</tr>
<tr>
<td>• Next generation mobility: parking/vehicle infrastructure</td>
<td>• Biomass</td>
<td>• Piped energy distribution systems</td>
<td>• Student/military housing</td>
<td>• Regional/edge data centers</td>
</tr>
<tr>
<td><strong>Airports</strong></td>
<td><strong>Conventional</strong></td>
<td><strong>Midstream</strong></td>
<td><strong>Civic and utilities</strong></td>
<td><strong>Towers/masts</strong></td>
</tr>
<tr>
<td>• Terminal concessions</td>
<td>• Thermal generation that is complementary to renewables</td>
<td>• Gathering &amp; processing</td>
<td>• Waste/water treatment/disposal</td>
<td>• <strong>Support 5G and higher data rates</strong></td>
</tr>
<tr>
<td>• Regional airports</td>
<td>• Gas</td>
<td>• Pipelines for refined products/natural gas/natural gas liquids</td>
<td>• Community &amp; sports facilities</td>
<td>• Telecom towers, small cells</td>
</tr>
<tr>
<td>• Consolidation opportunities for fixed-base operators</td>
<td>• Co-generation</td>
<td>• Storage solutions</td>
<td>• Local government facilities</td>
<td>• Net-co solutions: asset carve-outs from Telcos</td>
</tr>
</tbody>
</table>

Note: bullet points in black highlight Partners Group focus areas.
Source: Partners Group, November 2018. For illustrative purposes only.
Realizing value in non-core segments of the market

As the asset class evolves, it has become increasingly important to have a clear outline of what constitutes an infrastructure asset. Partners Group defines infrastructure as comprising capex-intensive businesses or franchises that benefit from strong and sustainable barriers to entry. In terms of cash flow profile, we look for stability and visibility, thus preferring assets or infrastructure services businesses where revenues are secured by medium- to long-term contracts with high rates of renewal and long customer tenures and where operating costs and risks can be actively managed or transferred.

Infrastructure investment universe

Based on these criteria, we recently acquired Techem, a global market leader in energy sub-metering services based in Germany. Techem’s principal Energy Services business provides services and devices for the metering and billing of energy and water, including device sales, hire and maintenance. In addition, its Energy Contracting business delivers heat, cooling, flow energy and light as well as the planning, set-up, financing and operation of energy systems and controlling services. Techem’s business has strong infrastructure characteristics based on its long-term contracts; high capex requirements generated by a large asset base of installed heat cost allocators, heat and water meters and smoke detectors; and high barriers to entry. Techem is currently one of the market leaders in Germany, the largest sub-metering market in the world, and holds a leading position in other European markets. Going forward, together with our consortium investors, we will support the development of the company in its existing markets and aim to expand its presence geographically. We will focus on introducing new technologies to enhance its current offering and consolidate its position as a leading energy efficiency provider.

Global shift toward clean and more efficient energy

We continue to believe that the transformation of the world’s power generation mix from fossil fuels to renewable generation remains one of the biggest investment opportunities in infrastructure. The agreed international goal of reducing greenhouse gas emissions is at the heart of energy policies almost everywhere and is likely to be achieved through a combination of improved energy efficiency and a higher share of renewables in the energy system. It is estimated that USD 11.5 trillion will be invested in new power generation assets between now and 2050, of which 86%, or USD 9.9 trillion, will go to zero-emissions technologies. This means around USD 300 billion is required per year for clean energy investment. The bulk of this investment will happen in non-OECD emerging economies. Irrespective of any political or policy developments, OECD developed markets will also continue to add new clean energy capacity, fueled by new demand drivers such as the increase of electric vehicles, among others. Another important contributor to demand is the increasingly competitive cost of renewable energy compared to traditional energy sources. Since 2009, the levelized cost of electricity of solar photovoltaic and wind energy has dropped approximately 80% and 50%, respectively. Today, these technologies are already cheaper than building new large-scale coal and gas plants in many major markets, including India, Germany, Australia, the US and China.

The delivery premium for building core renewable energy assets ranges from 300-500bps, depending on the geography and type of asset.

Partners Group is an active investor in the clean energy space. Since 2010, we have delivered over 2.8GW of renewable energy capacity globally, with another 1.7GW currently under construction. Examples include Merkur Offshore and Borssele III/IV, our offshore wind farms in Germany and the Netherlands, Silicon Ranch Corporation and Japan Solar, our solar platforms in the US and Japan, which we successfully exited in 2018, and Ararat Wind Farm and Murra Warrna Wind Farm, our onshore wind farms in Australia. All of these assets will be an integral part of the generation system in their respective markets for many years to come. Going into 2019, we will continue to focus on building core and on select platform expansion opportunities to capture the delivery premium available for these projects. The premium ranges from 300-500bps, depending on the geography and type of renewable

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generation asset. Emerging themes that we are following closely within the sector include the internationalization of offshore wind, energy storage and “direct-to-consumer” renewables.

In offshore wind, we anticipate our expertise in Europe will allow us to capitalize on emerging opportunities in Asia-Pacific and the US. The sector is in its early stages in India, Korea and Japan, with pilot projects and regulatory regimes being developed. Timing to market will be essential as windows of opportunity close very quickly. In Taiwan, for instance, offshore wind projects with full construction risk sold for single digit buy-and-hold IRRs in 2018, a 300bps compression compared to the returns available 18 months ago. In the US, the opportunity set is likely two to four years away from providing meaningful deal flow.

In energy storage, we believe that projected significant cost reductions, particularly for lithium-ion batteries, will see energy storage solutions offer higher returns and attract greater investment interest in the near term. Due to unclear policy support, lack of predictable revenue sources, lack of scale and technical constraints, such as discharge limits and short battery lives, batteries are at least two years away from being a viable standalone investment in our view. However, they can be attractive additions to an existing renewable energy portfolio.

Our recent investment in Grassroots Renewable Energy Platform (Grassroots), which involves the build-out of 1.3GW of new wind power, solar power and battery storage assets in Australia, is one such example. We believe that the integration of different technologies will make Grassroots more robust in terms of consistency of power supply and thus more attractive to potential off-takers and future buyers. Grassroots also addresses another focus theme, which is the trend of building renewable generation assets that are contracted directly to the requirements of large commercial and industrial (C&I) consumers. Given the intermittent nature of renewable power, these requirements often include a “firming” or storage component to produce a more stable power supply. While Grassroots is not specifically designed for one particular client, a large part of the value creation in our investment case is centered on catering to the needs of C&I customers. Using our existing relationships with intermediaries in the Australian market, we have already been able to negotiate power purchase agreements (PPAs) with a number of corporate off-takers. For example, Grassroots has signed an agreement with Sydney Airport to supply up to 75% of the airport’s current electricity load via Crudine Ridge Wind Farm, one of Grassroots’ wind power assets currently under construction. The agreement not only provides a meaningful cost reduction for Sydney Airport but also supports its transition toward renewable energy as it aims to achieve its target of a 50% reduction in carbon intensity by 2025.

Building new renewable generation capacity is just one way of approaching the clean and efficient energy theme. Another is via investments in companies such as Techem, which has energy efficiency at the heart of its offering. By enabling heating and energy supplies to be managed in a more precise and sustainable manner, Techem’s solutions today account for 6.9 million metric
The shale revolution and the resulting growth of gas supply has not only changed the energy landscape in the US but also in the rest of the world. We have invested in various touchpoints along the natural gas export value chain. For example, we continue to develop our midstream platform Fermaca, the only integrated pipeline network that connects large natural gas demand centers along the Chihuahua corridor and in Guadalajara, Mexico, with low-cost West Texas natural gas production. Since our initial investment in 2014 and following add-on investments, we have grown the network to six pipelines and one compression station, with enough capacity to transport 1.5 billion cubic feet of natural gas per day, equivalent to around 20% of Mexico’s daily domestic natural gas demand.⁵

More recently, at the end of 2017, we closed our investment in Arcanum, a platform dedicated to the build-out of support infrastructure for petrochemical customers along the US Gulf Coast. The first project, Raven, an ethylene processing facility being built in Baytown, Texas, is scheduled to be completed in Q1 2019. Raven will use proven and clean technology to process ethylene, a readily available derivative of natural gas, into Butene-1, which is used as a critical input in the manufacture of polyethylene and a variety of other products, for which demand is forecast to double in the next ten years.⁶ Long-term, fee-based off-take contracts with no commodity price exposure have been signed with several investment grade counterparties for all of Raven’s initial production capacity. In addition, we are developing a number of potential opportunities to expand the Arcanum platform, including a liquids storage tank terminal business focused on high-value chemical intermediates that are transferred in ports.

Our focus going forward continues to be on pathways to export, including pipelines in and from the US, and transportation infrastructure along the import/export value chain such as ports, terminals and storage assets. We are also keeping a close eye on opportunities in Asia, which is the largest gas-importing region in the world, with historical volumes increasing rapidly and at a faster pace than in Europe, another net importing region.⁷ While we are currently around two to four years away from seeing investable opportunities in Asia, we believe that regasification (the process of converting LNG back to natural gas) will be one of the largest energy infrastructure themes in Asia in the future. We are tracking a number of early-stage opportunities in the sector.

Disruption in traditional energy resource flows

The US shale revolution and the resulting growth of gas supply has not only changed the energy landscape in the US but also in the rest of the world. It is re-directing the flow of resources within the US, where shale basins have been discovered in historically non-producing regions of the country, challenging what had been an orderly flow of hydrocarbons generally from the South and West toward the North and East. As a result, new infrastructure build-out is required.

Due to the steep ramp up in production, the US gas export market has also been evolving rapidly, with the country on course to overtake Australia and Qatar as the global leader of liquefied natural gas (LNG) exports by the end of 2022.³ The large expected growth in export volumes creates a need for more export infrastructure, including terminal and storage capacity on the US Gulf Coast, increased port capacity and pipelines to deliver gas to neighboring Mexico and Canada, where close to 60% of gas exports go.⁴ Furthermore, infrastructure is needed to liquefy gas for export in the form of either LNG or liquefied petroleum gas (LPG) or to convert the molecules into other products such as methanol or polyethylene.

Infrastructural development is required to move the US gas and its value-added derivatives to the international markets that take most of the natural gas and LNG exports. We have invested in various touchpoints along the natural gas export value chain. For example, we continue to develop our midstream platform Fermaca, the only integrated pipeline network that connects large natural gas demand centers along the Chihuahua corridor and in Guadalajara, Mexico, with low-cost West Texas natural gas production. Since our initial investment in 2014 and following add-on investments, we have grown the network to six pipelines and one compression station, with enough capacity to transport 1.5 billion cubic feet of natural gas per day, equivalent to around 20% of Mexico’s daily domestic natural gas demand.³

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How we realize relative value potential in private infrastructure

Capitalize on platform expansion opportunities

We look for investments that offer us the opportunity to build scale, for example through investing in fragmented markets that have the potential for consolidation and platform-building.

Proactively build core

We seek out opportunities where strong long-term fundamentals in a particular market support the demand for building a select type of infrastructure, for example due to evolving infrastructure needs or changing market fundamentals.

Focus on operational value creation

We focus on investment opportunities that offer us the potential to enhance operational value through growth and efficiency improvements. A key source of these opportunities is the ongoing trend for corporate owners of infrastructure to sell assets as part of a restructuring.
Relative value analysis

Going into 2019, our relative value outlook remains positive on the asset class despite high valuation levels and the overall competitiveness of the market. In terms of sectors, we continue to see attractive opportunities in renewables globally. We are also more positive on the transportation sector globally. Transport logistics assets and ports are a particular area of focus as we believe they offer opportunities to capture the trend of shifting energy and other resource flows. We have also upgraded our outlook for energy infrastructure in Europe and Asia-Pacific, based on attractive deal flow in the distributed energy space in Europe and the emergence of some interesting terminal opportunities in Asia, although the latter continue to be expensive. We also see the waste management sector as relatively more attractive.

On the other hand, we have changed our outlook on communications assets globally to neutral, following growing concerns around technological disruption within the sector and ever-rising valuation metrics. Within the sector, though, we continue to look at wholesale and hyperscale data centers, where underlying demand drivers (data growth and the shift to cloud storage) are more resilient and relatively less prone to disruption (although entry valuations are very high – perhaps too high – at the moment). Support infrastructure for 5G, such as telecom towers, small cells and distributed antenna systems, is also a theme that we will continue to follow closely.

Relative value matrix

How to interpret the table: the relative value matrix divides the private infrastructure market into various regions (North America, Europe and Asia/emerging markets) and segments, which are then divided into sectors (transportation/logistics, power, energy infrastructure, communications and social infrastructure/PPPs), strategy and investment types (directs or secondaries). For directs, we distinguish between equity and debt. For secondary investments, we distinguish between inflection assets (early stage) and mature assets according to asset/portfolio age. Green and light green highlight a segment with high relative attractiveness given Partners Group’s specific capabilities and deal flow. White highlights a neutral segment. Yellow and light yellow mean that Partners Group underweights the segment and requires even greater conviction during bottom-up analysis to pursue an asset.
Liquid private markets

Market overview

**Listed infrastructure**

Listed infrastructure has declined by 3% year-to-date in what has been a mixed environment for equities. After an eight-year bull run for infrastructure equities, 2018 has been challenging but has led to more compelling valuations relative to broader equity markets. US equities have risen sharply this year, while Europe and emerging markets have both struggled due to political and global trade concerns, among others. We have become more positive on listed infrastructure as underlying fundamentals remain solid, and valuations are more appealing than at the start of the year. For the time being, we retain our preference for GDP-sensitive sectors, especially toll roads and railways, given our base case macroeconomic scenario of further positive growth. This also provides a hedge against rising interest rates in the US and elsewhere since these sectors are less impacted by rising rates.

**Listed private equity** has generated a return of 4% year-to-date. At the same time, discounts for UK listed private equity companies have expanded to 16%, slightly above the long-term average. North America performed strongly, while Europe and the UK remained flat. Business development companies (BDCs) and alternative asset managers drove the performance of North America, with the former benefiting from regulatory changes and the latter from the positive fundraising environment and LP to C-Corp conversions. We are neutral to cautious on listed private equity because of elevated valuation levels and acknowledge regional disparities in opportunities.

---

Relative value matrix

<table>
<thead>
<tr>
<th>Listed Infrastructure</th>
<th>NORTH AMERICA</th>
<th>EUROPE</th>
<th>ASIA/EMERGING MARKETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport</td>
<td>Utilities</td>
<td>Comm-</td>
<td></td>
</tr>
<tr>
<td>Public partnerships</td>
<td>BDCs</td>
<td>unications</td>
<td>Social/</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>diversified</td>
</tr>
<tr>
<td>Transport</td>
<td>Utilities</td>
<td>Comm-</td>
<td></td>
</tr>
<tr>
<td>Public partnerships</td>
<td>Fund of funds</td>
<td>unications</td>
<td>Social/</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>diversified</td>
</tr>
<tr>
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<tr>
<td></td>
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<td>Transport</td>
<td>Utilities</td>
<td>Comm-</td>
<td></td>
</tr>
<tr>
<td>Public partnerships</td>
<td>Managers</td>
<td>unications</td>
<td>Social/</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>diversified</td>
</tr>
</tbody>
</table>

How to interpret the table: the relative value matrix divides the listed infrastructure and listed private equity markets into regions (North America, Europe and Asia/emerging markets) and types of investment available. Green and light green highlight a segment with high relative attractiveness given Partners Group’s specific capabilities. White highlights a neutral segment. Yellow and light yellow mean that Partners Group underweights the segment and requires even greater conviction during bottom-up analysis to pursue an asset.

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1 Measured by Partners Group Listed Investment SICAV - Listed Infrastructure in EUR, as of 2 November 2018.
2 Measured by Partners Group Listed Investment SICAV - Listed Private Equity in EUR, as of 2 November 2018.
An abundance of yield-seeking capital and available credit has lifted valuations to elevated levels, in the public and private space alike. We have argued repeatedly that in this high valuation environment, forward-looking, longer-term return expectations are comparably low in historical terms. Our Expected Return Framework (ERF), which projects five-year forward-looking broad industry returns by asset class, illustrates this development:1

Based on top-down industry-wide parameters and not on Partners Group’s bottom-up calibration of opportunity-specific target returns. The five-year horizon has been chosen to reflect the typical private markets holding period.

Partners Group Expected Return Framework: expected broad industry returns p.a. by asset class

Note: all of the above data is derived from Partners Group calculations and assumptions and should not be construed as representative of Partners Group investments. Partners Group utilizes historical market data and academic research to generate the above calculations, a full list of which can be provided on demand. Please note all value creation inputs are based solely on Partners Group’s internal research. There is no assurance that expected returns will be achieved. Public asset classes are assumed to be invested passively, with a flat management fee of 0.20% p.a. for equities, 0.25% p.a. for investment grade bonds and 0.50% p.a. for high-yield. The fee structure assumed for private equity includes a management fee of 2.0% p.a. and a performance fee of 20% subject to an 8% hurdle. Real estate and infrastructure fees on equity investments include a management fee of 1.5% p.a. and a performance fee of 20% subject to an 8% hurdle for real estate and 15% subject to a 6% hurdle for infrastructure. Private equity junior debt fees include a management fee of 1.5% p.a. and a performance fee of 15% subject to an 8% hurdle. For real estate and infrastructure junior debt, fees include a management fee of 1.25% p.a. and a performance fee of 10% subject to a 5% hurdle. Senior loan fees for all asset classes include a management fee of 0.75% p.a. and a performance fee of 7.5% subject to a 4% hurdle. Hypothetical or simulated performance results have certain limitations. Unlike the results shown in an actual performance record, these results do not represent actual trading. Past performance is not a reliable indicator of future performance. High-yield and investment grade credit taken as a public proxy for junior debt and senior debt to retrieve spreads.

Source: Partners Group, as of November 2018. For illustrative and academic purposes only.
Applying the ERF across asset classes

Our ERF aims to be intuitive, yet academically sound, and to be applicable to public as well as private markets. The framework is based on fundamental drivers consisting of three components that contribute to total returns: income, growth and valuations.

As shown in the ERF chart, similar to public equities, return expectations in the private markets space are low compared to long-term averages. This is largely driven by the mean-reverting valuation component (EV/EBITDA multiple contraction for private equity, rising cap rates in private real estate) and a lower risk-free rate.

For private equity, the ERF projects annualized returns of 10% net over a five-year horizon compared to historical returns of 11-16%, with the main performance drag coming from multiple contraction (-2% p.a.). The relative outperformance of private equity over public equity remains in line with historical averages at around 5% p.a. When public equity returns (market beta) are low, active management becomes a more important contributor to total returns. This is achieved through highly entrepreneurial private markets governance and by implementing value-add initiatives – an approach which is further supported by the focus on long-term value enhancement that exists in private markets compared to the focus on quarterly earnings that exists in large parts of public markets. Consequently, even if public equities beat their long-term expected return projections, private equity should beat theirs to a similar extent.

Applying relative value and scenario thinking to model private markets portfolios

As in previous issues of the Private Markets Navigator, we are providing a return-focused and a yield-focused private markets portfolio to illustrate the portfolio implementation of our relative value weights and themes, shifting asset class allocations within predefined bands. Both portfolios maintain an overall diversified approach and take into account technical factors such as the breadth of asset classes and incremental risk/return factors. The return portfolio combines investment themes and segments of private markets catered toward capital appreciation, while the yield portfolio focuses on income-oriented opportunities. We calculate expected returns for the model portfolios using the five-year broad industry returns derived from the ERF and then apply the asset testing scenarios defined in the Private Markets Outlook section on page 4. In order to illustrate the superior risk/return characteristics of a private markets portfolio, we compare the results to a typical public markets portfolio.

Return-focused portfolio allocation in our base case

In the return-focused portfolio, we continue to overweight private equity and have further increased our allocation to the asset class from 45% to 50%. In particular, we focus on direct investments in companies with high pricing power and margin stability that offer potential for value creation enabled by an entrepreneurial approach to ownership and a long-term view. Our focus on value-add and market segments that benefit from transformative trends should largely offset the negative impact of multiple contraction. In light of rising rates, we have placed a greater underweight on real estate. While real estate secondaries involving a special situation (e.g. requiring a bespoke structure) still offer attractive returns, tight cap rates and their sensitivity to rising rates warrant a more cautious assessment of direct real estate investments. The portfolio weightings for private infrastructure and private debt (corporate second lien and mezzanine) remain unchanged. Within infrastructure, we...
clearly overweight greenfield (as opposed to highly valued brownfield), where a delivery premium can be captured, and long-term financing and future income streams (contractual revenues, tariffs) can be locked in during or before the construction phase, thereby making greenfield assets less sensitive to interest rate shifts.

In the return-focused portfolio, we continue to overweight private equity and have increased our allocation to the asset class from 45% to 50%.

Applying these weights and using the ERF broad industry returns results in an annualized expected return of 8.9% and generates a strong outperformance of 4.5 percentage points over a 60/40 public markets portfolio (60% equities, 20% government bonds, 20% investment grade bonds). While this outperformance has come down slightly compared to our 2018 outlook, it is still high in relative terms. The chart below illustrates the expected returns for the different scenarios, using the same asset allocation.

**Economic scenarios applied to return-focused portfolio**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Net return in percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base case</td>
<td>8.9%</td>
</tr>
<tr>
<td>Adverse rate hikes</td>
<td>7.6%</td>
</tr>
<tr>
<td>Recession</td>
<td>7.2%</td>
</tr>
<tr>
<td>Stock market rally</td>
<td>12.2%</td>
</tr>
</tbody>
</table>

Note: asset class return expectations are based on broad industry returns as projected by the Expected Return Framework. Partners Group target returns exceed return expectations for the broader market in line with our disciplined investment approach and value creation assumptions.

Source: Partners Group, November 2018.

Under the adverse rate hike scenario, the impact on rate-sensitive real assets and the margin impact on private equity (higher financing costs, lower demand) are slightly offset by higher-yielding, floating-rate corporate debt, although the outperformance over public markets is narrower compared to our base case. Under the recession scenario, the robust value-add component of private markets returns, coupled with the more defensive characteristics of infrastructure and wider spreads in the corporate debt space, would cushion the negative impact on expected returns. In turn, this would widen the outperformance potential of private over public markets. A more positive capital markets outcome (stock market rally) would result in strong public equity returns and a narrowing of the private markets outperformance.

In the yield-focused portfolio, we strongly overweight floating-rate corporate debt, which benefits from rising rates environments. First lien debt has an even stronger overweight given it provides better downside protection. In these segments, we seek companies with resilient business models in high-growth market segments, Club-style or unitranche facilities with bespoke features, provide for superior returns in the first and second lien spaces alike. Real asset debt, which is typically fixed-rate, is a continued underweight given tight spreads. We have placed an underweight on private infrastructure equity, which for the yield-focused portfolio would consist of yielding brownfield assets. Brownfield infrastructure has less value creation upside potential and is sensitive to rising real rates via higher discount rates.

Similar to the return-focused portfolio, the chart below illustrates the expected returns for the different scenarios and compares these with a 20/80 public markets portfolio, consisting of 20% equities, 40% government bonds, 30% investment grade and 10% high-yield bonds.

**Economic scenarios applied to yield-focused portfolio**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Net return in percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base case</td>
<td>6.1%</td>
</tr>
<tr>
<td>Adverse rate hikes</td>
<td>6.7%</td>
</tr>
<tr>
<td>Recession</td>
<td>5.0%</td>
</tr>
<tr>
<td>Stock market rally</td>
<td>6.1%</td>
</tr>
</tbody>
</table>

Note: asset class return expectations are based on broad industry returns as projected by the Expected Return Framework. Partners Group target returns exceed return expectations for the broader market in line with our disciplined investment approach and value creation assumptions.

Source: Partners Group, November 2018.
ERF case study: US public equity returns

The following case study provides deeper insight into how the ERF works using the evolution of US public equities over the past 100 years as an example. It illustrates the characteristics of the ERF and its different components at work. While omitting some of the more technical aspects (mainly relating to the measurement of the different components), the reduced model presented captures the main return drivers.

The chart below illustrates the development of the return components for US public equities from 1916 to 2016:

Over the past 100 years, income and growth have accounted for more than 90% of average US equity returns, which, gross of fees, amounted to 9.6% p.a. Valuation is a mean-reverting component relating to price to earnings (P/E) ratios that has contributed little to returns on average. Overall, this implies an equity risk premium (ERP) of around 4.7% p.a.

How does this compare to the current investment environment? Our ERF forecasts a gross return of 5.5% p.a. for US public equities over the next five years:

In addition, we currently project cash to return 3.0% p.a. over the next five years in the US (as derived from current and forward USD Libor rates). A total expected return for equities of 5.5% therefore translates into an ERP of 2.5% over cash.

The lower return expectations for US public equities in the current environment stem mainly from our view that valuations will contract as interest rates increase, deducting around 2% p.a from the expected return. Without the impact of valuations, the expected return would be close to historical averages relative to cash (ERP of 4.5%) but would be lower in absolute terms given that the cash return is materially lower than the historical average.
Below we show an intuitive return “bridge” from the historical 9.6% p.a. total return to the current ERF forecast of 5.5% p.a.:

**Bridge from 100-year historical returns (all figures p.a.):**

- 100-year historical US equity returns: 9.6%
- Current cash yield of 3.0% vs. 4.9%: -1.9% 7.7%
- Mean reversion (valuations 10% lower over next five years): -2.0% 5.7%
- Other (e.g., lower dividend yield): -0.2% 5.5%
- ERF five-year equity return expectation as of today: 5.5%

The return bridge shows that the lower return mainly reflects an overall lower cash rate and mean-reverting valuations. The following chart shows the historical returns relative to cash following periods of high valuations:

[Chart showing historical returns relative to cash]

Note: ERP refers to equity risk premium. ERP displayed calculated as average of next 10-year ERPs during period when P/E ratios exceed 15x.

Source: Partners Group; Robert Shiller data, October 2018.

These historical returns emphasize the transition from higher valuations to lower future returns:

- For P/E ratios of 15-17.5x, the average historical 10-year return of equities was 7.5% (cash + 2.9%).
- For P/E ratios of 17.5-20x, the average historical 10-year return of equities was 6.8% (cash + 2.4%).

The current P/E ratio for US equities falls within the 17.5-20x range. Taking into account our assumption of a 10% multiple contraction over the next five years, the current ERF broad industry return of cash + 2.5% is not out of line in historical terms, meaning the ERF projections appear to be valid.
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