Guide to Alternatives

- **Private markets**
  25. Private market dynamics
  26. Private equity deals and multiples
  27. Private equity deal trends
  28. U.S. public vs. private equity
  29. Global private equity return dispersion
  30. Private equity exit activity
  31. Private equity distributions and the secondary market
  32. Credit returns across recent economic cycles: 2004 - 2019
  33. Credit market participants and issuance
  34. U.S. direct lending: pricing and characteristics
  35. Distressed credit: Non-performing loans

- **Hedge funds**
  36. Hedge fund strategy returns
  37. Hedge funds and manager selection
  38. Hedge fund flows
  39. Hedge fund exposures
  40. Interest rates and volatility
  41. Hedge funds and traditional portfolios
  42. Hedge funds and volatility
  43. Hedge funds and the U.S. equity market

- **Global real estate**
  8. Global real estate fundraising
  9. U.S. real estate dynamics
  10. U.S. real estate: Residential and retail
  11. U.S. real estate: Office
  12. REIT sector returns
  13. U.S. REITs and real estate
  14. Global real estate pricing
  15. Sources of European property returns
  16. APAC real estate: Japan residential and Australia office

- **Global infrastructure and transport**
  17. Global infrastructure fundraising and dry powder
  18. Sources of global infrastructure returns
  19. U.S. regulated utilities
  20. U.S. utilities: ROE, inflation and rates
  21. Global renewable energy
  22. Global trade
  23. Global banks' shipping finance
  24. Global shipping dynamics

Prepared by:
David Lebovitz, Global Market Strategist, Market Insights, J.P. Morgan Asset Management
Anita Sonawane, Associate, Alternatives Solutions Group, J.P. Morgan Asset Management
Tyler Voigt, CFA, Associate, Market Insights, J.P. Morgan Asset Management
Global private capital fundraising

Billions USD

- $1,100
- $900
- $700
- $500
- $300
- $100
- $100

'11  '12  '13  '14  '15  '16  '17  '18  '19

Private equity  Private credit  Real estate  Infrastructure  Natural resources

$409  $487  $634  $736  $820  $924  $917

Source: Preqin, HFRI, J.P. Morgan Asset Management.

Fundraising categories are provided by Preqin, and represent their estimate of annual capital raised in closed-end funds. Data may not sum to total due to rounding.

Data is based on availability as of August 31, 2019.
Public and private market correlations

10-years, quarterly returns

<table>
<thead>
<tr>
<th>2009 - 2019</th>
<th>Global Bonds</th>
<th>Global Equities</th>
<th>U.S. Core RE</th>
<th>Europe Core RE</th>
<th>APAC Core RE</th>
<th>Global Core Infra</th>
<th>Direct Lending</th>
<th>Venture Capital</th>
<th>Private Equity</th>
<th>Equity Long/Short</th>
<th>Relative Value</th>
<th>Macro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Bonds</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Equities</td>
<td>0.3</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. Core RE</td>
<td>-0.3</td>
<td>-0.5</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe Core RE</td>
<td>-0.4</td>
<td>-0.3</td>
<td>0.6</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APAC Core RE</td>
<td>-0.3</td>
<td>-0.4</td>
<td>0.8</td>
<td>0.7</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Core Infra</td>
<td>-0.2</td>
<td>-0.3</td>
<td>0.4</td>
<td>0.1</td>
<td>0.2</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Lending</td>
<td>0.1</td>
<td>0.5</td>
<td>-0.1</td>
<td>-0.3</td>
<td>-0.3</td>
<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venture Capital</td>
<td>-0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.4</td>
<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Equity</td>
<td>0.2</td>
<td>0.8</td>
<td>-0.3</td>
<td>-0.1</td>
<td>-0.2</td>
<td>-0.1</td>
<td>0.6</td>
<td>0.5</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equity Long/Short</td>
<td>0.2</td>
<td>1.0</td>
<td>-0.4</td>
<td>-0.3</td>
<td>-0.4</td>
<td>-0.3</td>
<td>0.6</td>
<td>0.3</td>
<td>0.9</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative Value</td>
<td>0.3</td>
<td>0.9</td>
<td>-0.6</td>
<td>-0.5</td>
<td>-0.6</td>
<td>-0.3</td>
<td>0.7</td>
<td>0.1</td>
<td>0.7</td>
<td>0.9</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Macro</td>
<td>0.2</td>
<td>0.5</td>
<td>-0.2</td>
<td>0.0</td>
<td>-0.2</td>
<td>-0.3</td>
<td>0.2</td>
<td>0.1</td>
<td>0.3</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>


Data is based on availability as of August 31, 2019.
Private and public manager dispersion
Based on returns from 1Q 2009 – 1Q 2019


Global equities (large cap) and global bonds dispersion are based on the world large stock and world bond categories, respectively. Manager dispersion is based on: 1Q 2009 – 1Q 2019 annual returns for global equities, global bonds, U.S. core real estate and hedge funds. U.S. non-core real estate, U.S. private equity and U.S. venture capital are represented by the 10-year horizon internal rate of return (IRR) ending 1Q 2019.

Data is based on availability as of August 31, 2019.
Yield alternatives

<table>
<thead>
<tr>
<th>Asset class</th>
<th>Yield</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Lending</td>
<td>10.2%</td>
<td>10.2%</td>
</tr>
<tr>
<td>Global Transport</td>
<td>9.4%</td>
<td>9.4%</td>
</tr>
<tr>
<td>U.S. High Yield</td>
<td>5.9%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Preferreds</td>
<td>5.4%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Global Infrastructure</td>
<td>4.8%</td>
<td>4.8%</td>
</tr>
<tr>
<td>APAC Real Estate</td>
<td>4.8%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Europe Real Estate</td>
<td>4.6%</td>
<td>4.6%</td>
</tr>
<tr>
<td>Global REITs</td>
<td>4.2%</td>
<td>4.2%</td>
</tr>
<tr>
<td>U.S. Real Estate</td>
<td>4.1%</td>
<td>4.1%</td>
</tr>
<tr>
<td>International Equity</td>
<td>3.2%</td>
<td>3.2%</td>
</tr>
<tr>
<td>U.S. 10-year</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>U.S. Equity</td>
<td>1.9%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Euro Govt. 7-10-year</td>
<td>0.2%</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

Source: BAML, Barclays, Bloomberg, Clarkson, Cliffwater, Drewry Maritime Consultants, Federal Reserve, FTSE, MSCI, NCREIF, FactSet, J.P. Morgan Asset Management. Yields are as of 6/30/2019, except Direct Lending, Global Infrastructure, EMEA, APAC and U.S. Real Estate (3/31/2019). Global Transport: Levered yields for transport assets calculated as the difference between charter rates (rental income), operating expenses, debt amortization and interest expenses, as a percentage of equity value. Yields for each of the sub-vessel types above are calculated and respective weightings are applied to arrive at the current levered yields for Global Transportation; Preferreds: BAML Hybrid Preferred Securities; U.S. direct lending: Cliffwater Direct Lending Index; U.S. High Yield: Bloomberg US Aggregate Corporate High Yield; Global Infrastructure: MSCI Global Infrastructure Asset Index-Low risk; U.S. Real Estate: NCREIF-ODCE Index; Global REITs: FTSE NAREIT Global REITs; International Equity: MSCI AC World ex-U.S.; U.S. 10-year: 10-year U.S. Treasury yield; U.S. Equity: MSCI USA, Europe core real estate: IPD Global Property Fund Index – Continental Europe; Asia Pacific (APAC) core real estate: IPD Global Property Fund Index – Asia-Pacific. Euro Govt. 7-10-year: Bloomberg Barclays Euro Aggregate Government – Treasury (7-10Y).

Data is based on availability as of August 31, 2019.
Environmental, social and governance (ESG). Forecasts, projections and other forward looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecasts, projections and other forward statements, actual events, results or performance may differ materially from those reflected or contemplated.

Data is based on availability as of August 31, 2019.
Global real estate fundraising
Aggregate capital raised, billions USD

Real estate acquisitions
Percent, by asset type based on number of deals

Source: Preqin, J.P. Morgan Asset Management.
Fundraising and acquisition activity is that of closed-end real estate funds.
Data is based on availability as of August 31, 2019.
The cap rate, which is computed as the net operating income over sales price, is the rate of return on a real estate investment property.

Data is based on availability as of August 31, 2019.
U.S. real estate: Residential and retail

Guide to Alternatives

Employment growth
Year-over-year % change

Data is based on availability as of August 31, 2019.

Retail leasing activity
Share of square footage leased by retailer type

Data is based on availability as of August 31, 2019.
Coworking space
Millions of square feet

Total occupied office square feet per worker
Square feet

Data is based on availability as of August 31, 2019.
## REIT sector returns

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>63.0%</td>
<td>47.0%</td>
<td>35.2%</td>
<td>31.3%</td>
<td>10.5%</td>
<td>46.2%</td>
<td>40.6%</td>
<td>30.7%</td>
<td>24.9%</td>
<td>11.4%</td>
<td>32.2%</td>
<td>22.2%</td>
<td>29.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>40.9%</td>
<td>34.6%</td>
<td>22.0%</td>
<td>28.2%</td>
<td>9.5%</td>
<td>39.6%</td>
<td>25.6%</td>
<td>14.2%</td>
<td>20.6%</td>
<td>7.6%</td>
<td>16.3%</td>
<td>18.2%</td>
<td>16.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>30.8%</td>
<td>20.4%</td>
<td>7.4%</td>
<td>33.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>39.4%</td>
<td>29.3%</td>
<td>15.1%</td>
<td>20.4%</td>
<td>5.6%</td>
<td>32.6%</td>
<td>16.5%</td>
<td>13.2%</td>
<td>8.7%</td>
<td>3.7%</td>
<td>19.3%</td>
<td>15.0%</td>
<td>24.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>28.0%</td>
<td>27.9%</td>
<td>13.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>24.6%</td>
<td>27.0%</td>
<td>8.3%</td>
<td>19.7%</td>
<td>2.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>12.2%</td>
<td>19.2%</td>
<td>-0.7%</td>
<td>14.2%</td>
<td>-1.0%</td>
<td>30.0%</td>
<td>2.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>8.4%</td>
<td>18.9%</td>
<td>-0.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>18.4%</td>
<td></td>
<td>-5.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>-1.7%</td>
<td></td>
<td>-7.1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: FTSE NAREIT, FactSet, J.P. Morgan Asset Management.

All indices are from FTSE NAREIT. Mfgd. Homes represents manufactured homes. YTD (year-to-date) returns are through 6/30/2019. Data is based on availability as of August 31, 2019.
Source: NAREIT, NCREIF, Standard & Poor’s, FactSet, J.P. Morgan Asset Management.

Real estate investment trusts (REITs). Indices do not include fees or operating expenses and are not available for actual investment. Past performance is not necessarily a reliable indicator for current and future performance.

Data is based on availability as of August 31, 2019.
Europe real estate property yield spreads*
Property yields vs. government bonds vs. BBB-rated bonds

APAC real estate property yield spreads*
Property yields vs. government bonds vs. BBB-rated bonds

Global cities yields
Grade A office yields, percent

Sources: Bloomberg, NCREIF, CBRE, Jones Lang LaSalle, J.P. Morgan Asset Management.

Bottom chart: Based on Grade A office yields, which are all broker-estimated with the exception of New York’s office yield (derived from NCREIF). Grade A refers to the highest quality commercial real estate properties.

*Europe and APAC aggregate property yield spreads are as of December 31, 2018 due to availability.

Data is based on availability as of August 31, 2019.
Sources of European property returns

**U.K. property returns**
Annual returns from income and capital appreciation

**France property returns**
Annual returns from income and capital appreciation

**Germany property returns**
Annual returns from income and capital appreciation

Sources: MSCI, J.P. Morgan Asset Management.

All returns are based on the respective MSCI IPD Global Property Index, and show one-year returns from income and capital appreciation.

Past performance is not indicative of future results. Alternative investments carry more risk than traditional investments and are recommended only for long-term investment. Some alternative investments may be highly leveraged and rely on speculative investments that can magnify the potential for loss or gain. Diversification does not guarantee investment returns or eliminate the risk of loss.

Data is based on availability as of August 31, 2019.

Guide to Alternatives | 15
### Japan multi-family

**Occupancy, percent**

<table>
<thead>
<tr>
<th>Location</th>
<th>2008 financial crisis</th>
<th>Tohoku earthquake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokyo 23 Wards</td>
<td>90%</td>
<td>92%</td>
</tr>
<tr>
<td>Osaka</td>
<td>90%</td>
<td>94%</td>
</tr>
<tr>
<td>Nagoya</td>
<td>90%</td>
<td>96%</td>
</tr>
<tr>
<td>Fukuoka</td>
<td>90%</td>
<td>98%</td>
</tr>
</tbody>
</table>

### Australia prime office

**Net effective rent, index level; occupancy, percent**

<table>
<thead>
<tr>
<th>Location</th>
<th>2008 financial crisis</th>
<th>Tohoku earthquake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney NER</td>
<td>85%</td>
<td>90%</td>
</tr>
<tr>
<td>Melbourne NER</td>
<td>85%</td>
<td>95%</td>
</tr>
<tr>
<td>Sydney Occupancy</td>
<td>90%</td>
<td>95%</td>
</tr>
<tr>
<td>Melbourne Occupancy</td>
<td>90%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Sources: Association of Real Estate Securitization, Japan Property Index, Jones Lang LaSalle, J.P. Morgan Asset Management.

Data is based on availability as of August 31, 2019.
Global infrastructure fundraising and dry powder

Source: Preqin, J.P. Morgan Asset Management.

*Dry powder refers to the amount of cash reserves or liquid assets available for use.
Data is based on availability as of August 31, 2019.
Sources of global infrastructure returns

Guide to Alternatives

Global core infrastructure returns
Rolling 4-quarter returns from income and capital appreciation

Source: MSCI, J.P. Morgan Asset Management.

Infrastructure returns represented by the “low risk” category of the MSCI Global Quarterly Infrastructure Asset Index. Data show rolling one-year returns from income and capital appreciation. The chart shows the full index history, beginning in the first quarter of 2009.

Past performance is not indicative of future results. Alternative investments carry more risk than traditional investments and are recommended only for long-term investment. Some alternative investments may be highly leveraged and rely on speculative investments that can magnify the potential for loss or gain. Diversification does not guarantee investment returns or eliminate the risk of loss.

Data is based on availability as of August 31, 2019.
U.S. utilities' average allowed return on equity and interest rates

Source: Bloomberg, SNL.com, Moody’s, America’s Electric Utilities, J.P. Morgan Asset Management.

RoE is return on equity, which is the amount of net income returned as a percentage of shareholders’ equity. Grey bars denote recessions.

Data is based on availability as of August 31, 2019.
U.S. utilities: RoE, inflation and rates

U.S. utilities’ return on equity and average cost of debt
1980-2018

R² = 0.96

Return on equity (%)
Cost of debt (%)

U.S. utilities’ return on equity and inflation
ROE (2-year lagged), CPI % change vs. prior year, 1980-2018

R² = 0.52

Return on equity (%)
Inflation (%)

Source: Moody’s, SNL.com, BLS, JPMAM Global Alternatives Research, J.P. Morgan Asset Management.

RoE is return on equity, which is the amount of net income returned as a percentage of shareholders’ equity. Average cost of debt is represented by the trailing 6-month average of Moody’s utilities yields.

Data is based on availability as of August 31, 2019.
Guide to Alternatives


*LCOE is levelized cost of energy, the net present value of the unit-cost of electricity over the lifetime of a generating asset. It is often taken as a proxy for the average price that the generating asset must receive in a market to break even over its lifetime.

Data is based on availability as of August 31, 2019.

Dry product consists of coal, ore, soybeans and bulk trade. Wet product consists of chemicals and oil trade.

Data is based on availability as of August 31, 2019.
Global banks’ shipping finance

Source: Dealogic, UNCTAD, J.P. Morgan Asset Management.
Data is based on availability as of August 31, 2019.
Source: UNCTAD, Clarksons, J.P. Morgan Asset Management.

Supply data refer to total capacity of the container-carrying fleet, including multipurpose vessels and other types of vessels with some container-carrying capacity. Demand growth is based on million TEU lifts.

Data is based on availability as of August 31, 2019.
Private market dynamics

**Global private credit & equity fundraising**

<table>
<thead>
<tr>
<th>Year</th>
<th>Private debt</th>
<th>Private equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>$326</td>
<td>$77</td>
</tr>
<tr>
<td>2014</td>
<td>$419</td>
<td>$79</td>
</tr>
<tr>
<td>2015</td>
<td>$423</td>
<td>$103</td>
</tr>
<tr>
<td>2016</td>
<td>$521</td>
<td>$117</td>
</tr>
<tr>
<td>2017</td>
<td>$584</td>
<td>$132</td>
</tr>
<tr>
<td>2018</td>
<td>$466</td>
<td>$118</td>
</tr>
<tr>
<td>2019</td>
<td>$49</td>
<td>$221</td>
</tr>
</tbody>
</table>

**First time private equity funds**

First time funds % total funds closed by year

- 2019: 10.1%

**Global private capital dry powder**

<table>
<thead>
<tr>
<th>Year</th>
<th>Private debt</th>
<th>Private equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>$0.0</td>
<td>$0.0</td>
</tr>
<tr>
<td>2009</td>
<td>$0.0</td>
<td>$0.0</td>
</tr>
<tr>
<td>2010</td>
<td>$0.0</td>
<td>$0.0</td>
</tr>
<tr>
<td>2011</td>
<td>$0.0</td>
<td>$0.0</td>
</tr>
<tr>
<td>2012</td>
<td>$0.0</td>
<td>$0.0</td>
</tr>
<tr>
<td>2013</td>
<td>$0.0</td>
<td>$0.0</td>
</tr>
<tr>
<td>2014</td>
<td>$0.0</td>
<td>$0.0</td>
</tr>
<tr>
<td>2015</td>
<td>$0.0</td>
<td>$0.0</td>
</tr>
<tr>
<td>2016</td>
<td>$0.0</td>
<td>$0.0</td>
</tr>
<tr>
<td>2017</td>
<td>$0.0</td>
<td>$0.0</td>
</tr>
<tr>
<td>2018</td>
<td>$0.0</td>
<td>$0.0</td>
</tr>
<tr>
<td>2019</td>
<td>$1.0</td>
<td>$1.0</td>
</tr>
</tbody>
</table>

Source: Preqin, Pitchbook, J.P. Morgan Asset Management.
Data is based on availability as of August 31, 2019.
**Global private equity deals**

Share of total

- **2019**
- **Average (2006-2Q19)**

**U.S. LBOs: purchase price multiples**

Equity and debt over trailing EBITDA


Data is based on availability as of August 31, 2019.
Private equity deal trends

Oil prices and natural resource deals
Energy & materials deal count, WTI oil price, y/y % change

Software investment and private equity
% U.S. PE deals targeting software companies, software inv. % GDP

Sources: BEA, Pitchbook, FactSet, J.P. Morgan Asset Management.

Software investment is represented by nonresidential fixed investment in software.

Data is based on availability as of August 31, 2019.
Number of listed U.S. companies*

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>'91</td>
<td>5,000</td>
</tr>
<tr>
<td>'94</td>
<td>6,000</td>
</tr>
<tr>
<td>'97</td>
<td>7,000</td>
</tr>
<tr>
<td>'00</td>
<td>8,000</td>
</tr>
<tr>
<td>'03</td>
<td>7,000</td>
</tr>
<tr>
<td>'06</td>
<td>6,000</td>
</tr>
<tr>
<td>'09</td>
<td>5,000</td>
</tr>
<tr>
<td>'12</td>
<td>4,000</td>
</tr>
<tr>
<td>'15</td>
<td>3,500</td>
</tr>
<tr>
<td>'18</td>
<td>5,343</td>
</tr>
</tbody>
</table>

2018: 5,343

Private vs. public equity sector weights

<table>
<thead>
<tr>
<th>Sector</th>
<th>S&amp;P 500</th>
<th>U.S. private equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tech</td>
<td>26.0%</td>
<td>30.1%</td>
</tr>
<tr>
<td>Cons. Disc.</td>
<td>12.9%</td>
<td>18.8%</td>
</tr>
<tr>
<td>Energy</td>
<td>6.3%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Industrials</td>
<td>9.5%</td>
<td>13.6%</td>
</tr>
<tr>
<td>Healthcare</td>
<td>14.1%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Financials</td>
<td>13.8%</td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td>2.6%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Cons. Staples</td>
<td>3.4%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Other*</td>
<td>3.0%</td>
<td>7.8%</td>
</tr>
</tbody>
</table>


*Number of listed U.S. companies is represented by the sum of number of companies listed on the NYSE and the NASDAQ.

Data is based on availability as of August 31, 2019.
The Cambridge Associates Modified Public Market Equivalent (mPME) methodology determines how much the private equity funds’ cash flows would have earned had they been invested in the MSCI All-Country World Index (ACWI) instead.

Data is based on availability as of August 31, 2019.
Private equity exit activity

Private equity exits by type

<table>
<thead>
<tr>
<th>Year</th>
<th>Jun-19</th>
<th>06-'18 avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary buyout</td>
<td>37.8%</td>
<td>34.3%</td>
</tr>
<tr>
<td>IPO</td>
<td>21.7%</td>
<td>15.9%</td>
</tr>
<tr>
<td>Corporate acquisition</td>
<td>40.6%</td>
<td>49.8%</td>
</tr>
</tbody>
</table>

Number of IPOs

<table>
<thead>
<tr>
<th>Year</th>
<th>2018: 134</th>
</tr>
</thead>
</table>

U.S. IPOs with negative earnings

Percent of all initial public offerings that year

<table>
<thead>
<tr>
<th>Year</th>
<th>2018: 81%</th>
</tr>
</thead>
</table>


Data is based on availability as of August 31, 2019.
Data is based on availability as of August 31, 2019.
Credit returns across recent economic cycles: 2004 - 2019

**Expansion**
Manufacturing ISM > 50 and rising

<table>
<thead>
<tr>
<th>10y UST</th>
<th>2y UST</th>
<th>U.S. IG</th>
<th>U.S. HY</th>
<th>U.S. leveraged loans</th>
<th>U.S. direct lending</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.4%</td>
<td>0.2%</td>
<td>1.1%</td>
<td>3.0%</td>
<td>2.3%</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

**Recession**
Manufacturing ISM < 50 and falling

<table>
<thead>
<tr>
<th>10y UST</th>
<th>2y UST</th>
<th>U.S. IG</th>
<th>U.S. HY</th>
<th>U.S. leveraged loans</th>
<th>U.S. direct lending</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1%</td>
<td>1.4%</td>
<td>-0.9%</td>
<td>-3.8%</td>
<td>-4.6%</td>
<td>-0.6%</td>
</tr>
</tbody>
</table>

**Late cycle cooling**
Manufacturing ISM > 50 and falling

<table>
<thead>
<tr>
<th>10y UST</th>
<th>2y UST</th>
<th>U.S. IG</th>
<th>U.S. HY</th>
<th>U.S. leveraged loans</th>
<th>U.S. direct lending</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4%</td>
<td>0.7%</td>
<td>1.6%</td>
<td>1.4%</td>
<td>0.9%</td>
<td>2.3%</td>
</tr>
</tbody>
</table>

**Turnaround**
Manufacturing ISM < 50 and rising

<table>
<thead>
<tr>
<th>10y UST</th>
<th>2y UST</th>
<th>U.S. IG</th>
<th>U.S. HY</th>
<th>U.S. leveraged loans</th>
<th>U.S. direct lending</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1.6%</td>
<td>-0.1%</td>
<td>4.6%</td>
<td>9.4%</td>
<td>8.1%</td>
<td>2.3%</td>
</tr>
</tbody>
</table>


Data is based on availability as of August 31, 2019.
Credit market participants and issuance

**U.S. leveraged loan market participants**
Share of total market, percent

- **Global banks**
  - 1994: 72%
  - 2000: 46%
  - 2006: 20%
  - 2012: 9%
  - 2018: 13%

- **Non-bank companies and funds**
  - 1994: 28%
  - 2000: 54%
  - 2006: 80%
  - 2012: 87%
  - 2018: 91%

**Covenant-lite loan issuance**
Percent of U.S. issuance in institutional leveraged loans

- '07: 30%
- '08: 10%
- '09: 10%
- '10: 10%
- '11: 20%
- '12: 30%
- '13: 40%
- '14: 50%
- '15: 60%
- '16: 70%
- '17: 80%
- '18: 90%


Covenant-lite loans are a type of financing that is issued with fewer restrictions on the borrower with regard to collateral, level of income, and loan payment terms, and fewer protections for the lender, including financial maintenance tests that measure the debt-service capabilities of the borrower.

Data is based on availability as of August 31, 2019.
Middle market yields and leverage
Percent, leverage is debt/EBITDA

U.S. direct lending: Pricing and characteristics

Data is based on availability as of August 31, 2019.

U.S. middle market lending: purchase price multiples
Deals ≤ $50M EBITDA

Yield
Leverage

Bank 1st Lien
Non-Bank 1st Lien
Unitranche
2nd Lien
Mezzanine

0%
2%
4%
6%
8%
10%
12%
14%

Leverage
0x
2x
4x
6x
8x
10x
12x
14x

Equity
Subordinated debt
Senior debt

'07
'08
'09
'10
'11
'12
'13
'14
'15
'16
'17
'18
'19
Distressed credit: Non-performing loans

Non-performing loans to total gross loans
Percent, 2018

Source: International Monetary Fund, J.P. Morgan Asset Management.

A nonperforming loan is a sum of borrowed money upon which the debtor has not made the scheduled payments for a period of usually at least 90 days for commercial banking loans and 180 days for consumer loans. Nonpayment means there have been zero interest or principal payments made on the loan within a specified period. Any definition of a nonperforming loan will depend on the loan’s terms and agreement as there is no definitive definition of a nonperforming loan. NPL data based on most recently available numbers from the IMF. Color coding based on quintiles.

Data is based on availability as of August 31, 2019.
## Hedge fund strategy returns

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>35.4%</td>
<td>11.6%</td>
<td>1.4%</td>
<td>2.9%</td>
<td>13.2%</td>
<td>8.1%</td>
<td>5.6%</td>
<td>8.4%</td>
<td>16.8%</td>
<td>6.9%</td>
<td>5.6%</td>
<td>8.4%</td>
<td>16.8%</td>
<td>6.9%</td>
<td>5.6%</td>
<td>8.4%</td>
<td>16.8%</td>
<td>6.9%</td>
</tr>
<tr>
<td>2010</td>
<td>28.1%</td>
<td>12.1%</td>
<td>-1.8%</td>
<td>10.1%</td>
<td>11.4%</td>
<td>4.3%</td>
<td>9.3%</td>
<td>14.0%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>9.3%</td>
<td>14.0%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>9.3%</td>
<td>14.0%</td>
<td>14.3%</td>
<td>4.7%</td>
</tr>
<tr>
<td>2011</td>
<td>15.1%</td>
<td>10.6%</td>
<td>6.5%</td>
<td>7.1%</td>
<td>10.6%</td>
<td>4.3%</td>
<td>9.3%</td>
<td>14.0%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>9.3%</td>
<td>14.0%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>9.3%</td>
<td>14.0%</td>
<td>14.3%</td>
<td>4.7%</td>
</tr>
<tr>
<td>2012</td>
<td>6.8%</td>
<td>8.6%</td>
<td>7.7%</td>
<td>4.0%</td>
<td>8.6%</td>
<td>3.3%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
</tr>
<tr>
<td>2013</td>
<td>7.8%</td>
<td>5.6%</td>
<td>7.7%</td>
<td>4.0%</td>
<td>5.6%</td>
<td>3.3%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
</tr>
<tr>
<td>2014</td>
<td>10.0%</td>
<td>5.6%</td>
<td>7.7%</td>
<td>4.0%</td>
<td>5.6%</td>
<td>3.3%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
</tr>
<tr>
<td>2015</td>
<td>15.1%</td>
<td>10.6%</td>
<td>7.7%</td>
<td>4.0%</td>
<td>15.1%</td>
<td>3.3%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
</tr>
<tr>
<td>2016</td>
<td>16.6%</td>
<td>8.6%</td>
<td>7.7%</td>
<td>4.0%</td>
<td>15.1%</td>
<td>3.3%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
</tr>
<tr>
<td>2017</td>
<td>16.6%</td>
<td>8.6%</td>
<td>7.7%</td>
<td>4.0%</td>
<td>15.1%</td>
<td>3.3%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
</tr>
<tr>
<td>2018</td>
<td>15.1%</td>
<td>10.6%</td>
<td>7.7%</td>
<td>4.0%</td>
<td>15.1%</td>
<td>3.3%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
</tr>
<tr>
<td>YTD</td>
<td>15.1%</td>
<td>10.6%</td>
<td>7.7%</td>
<td>4.0%</td>
<td>15.1%</td>
<td>3.3%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
<td>8.6%</td>
<td>10.6%</td>
<td>14.3%</td>
<td>4.7%</td>
</tr>
</tbody>
</table>

### Source:
MSCI, Bloomberg Barclays, HFRI, FactSet, J.P. Morgan Asset Management.

Global equities reflect the MSCI AC World Index and global bonds reflect the Bloomberg Barclays Global Aggregate Index. All hedge fund returns are from HFRI. HFRI Composite: HFRI FW Composite Index. Returns may fluctuate as hedge fund reporting occurs on a lag. Please see disclosure pages for index definitions. YTD (year-to-date) returns are through 6/30/2019.

Data is based on availability as of August 31, 2019.
Hedge fund manager dispersion
Based on returns from 1Q 2009 – 1Q 2019

Manager dispersion is based on: 1Q 2009 to 1Q 2019 monthly returns for hedge funds. Blue bar denotes median. All hedge funds: Fund Weighted Composite Index, Equity market neutral: Equity hedge – equity market neutral, Event-driven: Event-Driven (Total), Relative value: Relative Value (Total), Relative value multi-strategy: Relative Value Multi-Strategy, Macro total: Macro (Total), Equity hedge: Equity Hedge (Total), Emerging markets: Emerging Markets Global.

Data is based on availability as of August 31, 2019.
Hedge fund flows

Hedge fund net asset flow
Billions USD

Sources: HFRI, J.P. Morgan Asset Management.
Data is based on availability as of August 31, 2019.

YTD 2019: -$17.8bn
Hedge fund exposures

**Sector exposure of top 50 hedge funds**

<table>
<thead>
<tr>
<th>Sector</th>
<th>% of total portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Services</td>
<td>14.6%</td>
</tr>
<tr>
<td>Finance</td>
<td>12.6%</td>
</tr>
<tr>
<td>Health Technology</td>
<td>12.4%</td>
</tr>
<tr>
<td>Electronic Technology</td>
<td>8.3%</td>
</tr>
<tr>
<td>Consumer Services</td>
<td>8.0%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>6.7%</td>
</tr>
<tr>
<td>Producer Manufacturing</td>
<td>4.6%</td>
</tr>
<tr>
<td>Consumer Non-Durables</td>
<td>4.3%</td>
</tr>
<tr>
<td>Utilities</td>
<td>3.8%</td>
</tr>
<tr>
<td>Energy Minerals</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

**Computing power: transistors per microprocessor**

Log

**Global data size**

Zettabytes

Sources: FactSet, Our World in Data, IDC, J.P. Morgan Asset Management. Zettabyte is a measure of digital information storage. One zettabyte is equivalent to a billion terabytes.

Data is based on availability as of August 31, 2019.
Implied volatility and the federal funds rate
VIX index level, 6-month moving average, Fed funds %, 2-year lead

Data is based on availability as of August 31, 2019.
Hedge fund correlation with a 60/40 stock-bond portfolio*
1990 – present, monthly

Sources: HFRI, Standard & Poor’s, Bloomberg, Barclays, FactSet, J.P. Morgan Asset Management.

*60/40 portfolio is 60% S&P 500 and 40% Bloomberg Barclays U.S. Aggregate. Hedge funds are represented by HFRI Macro.

Data is based on availability as of August 31, 2019.
Hedge funds and volatility

Average monthly hedge fund returns by VIX level, 1990 - present

Macro hedge fund relative performance & volatility

VIX index level, y/y change in rel. perf. of HFRI Macro index

Source: HFRI, CBOE, MSCI, FactSet, J.P. Morgan Asset Management.
Historical beta is based on regression analysis, where the HFRI is the dependent variable and the MSCI AC World Index is the independent variable.
Monthly VIX reading is an average.
Data is based on availability as of August 31, 2019.
Hedge funds and the U.S. equity market

Hedge fund beta to the S&P 500
Rolling 12-month beta

Source: HFRI, Standard & Poor’s, FactSet, J.P. Morgan Asset Management.
Data is based on availability as of August 31, 2019.
Alpha – is the difference between an investment’s return and its expected return, given its level of beta.

Accredited investor – Defined by Rule 501 of Regulation D, an individual (i.e. non-corporate) “accredited investor” is either a natural person who has individual net worth, or joint net worth with the person’s spouse, that exceeds $1 million at the time of the purchase OR a natural person with income exceeding $200,000 in each of the two most recent years or joint income with a spouse exceeding $300,000 for those years and a reasonable expectation of the same income level in the current year. For the complete definition of accredited investor, see the SEC website.

Capital commitment – A Limited Partner’s obligation to provide a specific amount of capital to a Closed-end Fund (defined below) for investments. The Capital Commitment is “drawn down” or “called” over time, meaning a portion of the commitment must be wired to the Closed-end Fund by a set date.

Capital called – The amount of capital wired to a fund that is “drawn down” over time as the General Partner selects investments.

Carried interest (aka incentive fee) – A fee paid to a fund manager for generating returns over a benchmark; calculated as a percentage of investment profits over a hurdle rate and charged in addition to a management fee. In Private Equity, carried interest (typically up to 20% of the profits) becomes payable once the investors have achieved repayment of their original investment in the fund, plus a defined hurdle rate.

Catch-up – This is a common term of the private equity partnership agreement. Once the general partner provides its limited partners with their preferred return, if any, it then typically enters a catch-up period in which it receives the majority or all of the profits until the agreed upon profit-split, as determined by the carried interest, is reached.

Clawback – A clawback obligation represents the general partner’s promise that, over the life of the fund, the managers will not receive a greater share of the fund’s distributions than they bargained for. Generally, this means that the general partner may not keep distributions representing more than a specified percentage (e.g., 20%) of the fund’s cumulative profits, if any. When triggered, the clawback will require that the general partner return to the fund’s limited partners an amount equal to what is determined to be “excess” distributions.

Closed-end fund – A fund that has a finite capital raising period and stated term (i.e. 5 years, 10 years, etc.,). Clients will have the ability to commit to the fund during the set fundraising period, after which point the fund will be closed to new investors. Unlike an open-ended fund, there is limited flexibility on when a client may invest and there is no liquidity/redemptions. Clients who invest are obligated to remain in the fund for the duration of the term; they will be required to fulfill capital calls during the stated commitment period and will receive periodic distributions based on underlying monetization of investments.

Commitment period – The period of time within which the fund can make investments as established in the Limited Partnership Agreement (“LPA”), meaning the governing document, for the fund.

Direct co-investment – An investment made directly in a single underlying asset of a fund. Example: The General Partner elects to invest in an operating company alongside a fund.


Distressed – A financial instrument in a company that is near or is currently going through bankruptcy. This usually results from a company's inability to meet its financial obligations. As a result, these financial instruments have suffered a substantial reduction in value. Distressed securities can include common and preferred shares, bank debt, trade claims (goods owed) and corporate bonds.

Distributions – The total proceeds distributed by the fund to the Limited Partners, which may include both return of capital and gain distributions.

General partner – The managing partner of a Limited Partnership. The General Partner is managed by the asset management team responsible for making fund investments (i.e., the intermediary between investors with capital and businesses seeking capital to grow).

Gross IRR – The dollar-weighted internal rate of return, before management fees and carried interest generated by the fund.

Hedge Fund strategies:

Relative Value/Arbitrage involves the simultaneous purchase and sale of similar securities to exploit pricing differentials. Strategies in this sector offer potential to generate consistent returns while minimizing directional risk.

Opportunist/Events/Macro strategies involve investments in a wide variety of strategies and instruments, which often have a directional stance based on the manager’s global macroeconomic views.

Long/Short (L/S) Equity involves long and/or short positions in equity securities deemed to be undervalued or overvalued, respectively. Exposures to sectors, geographies, and market capitalizations are often flexible and will change over time.

Merger Arbitrage/Event Driven strategies invest in opportunities created by significant corporate transactions and events which tend to alter a company’s financial structure or operating strategy.

Distressed Securities invests in debt and equity securities of firms in reorganization or bankruptcy.

High watermark – The highest peak in value that an investment fund has reached. This term is often used in the context of fund manager compensation. For example, a $1,000,000 investment is made in year 1 and the fund declines by 50%, leaving $500,000 in the fund. In year 2, the fund returns 100%, bringing the investment value back to $1,000,000. If a fund has a high watermark, it will not take incentive fees on the return in year 2, since the investment has never grown. The fund will only take incentive fees if the investment grows above the initial level of $1,000,000.

Hurdle rate – The rate of return that the fund manager must meet before collecting incentive fees.

Internal rate of return (IRR) – The dollar-weighted internal rate of return. This return considers the daily timing of cash flows and cumulative fair stated value, as of the end of the reported period.

J-Curve effect – Occurs when funds experience negative returns for the first several years. This is a common experience, as the early years of the fund include capital drawdowns and an investment portfolio that has yet to mature. If the fund is well managed, it will eventually recover from its initial losses and the returns will form a J-curve: losses in the beginning dip down below the initial value, and later returns show profits above the initial level.

K-1 – Tax document issued for an investment in partnership interests to report your share of income, deductions and credits. (Note that Private Investments generally issue a Schedule K-1 instead of a Form 1099 for tax reporting. K-1s may at times be issued later than 1099s, requiring investors to file for an extension).

Limited partner – An investor in a Limited Partnership, which is a form of legal entity used for certain hedge funds, private equity funds and real estate funds.

Management fee – Fee paid to a fund manager for managing the fund; typically calculated as a percentage of assets under management.

Mezzanine finance – Loan finance that is half-way between equity and secured debt, either unsecured or with junior access to security. A mezzanine fund is a fund focusing on mezzanine financing.

Multiple of Invested Capital (MOIC) – Calculation performed by adding the remaining (reported) value and the distributions received (cash out) and subsequently dividing that amount by the total capital contributed (cash in).

Net asset value (NAV) – This is the current fair stated value for each of the investments, as reported by the administrator of the fund.

Net IRR – The dollar-weighted internal rate of return, net of management fees and carried interest generated by the fund. This return considers the daily timing of all cash flows and the cumulative fair stated value, as of the end of the reported period.
Open-ended fund – As it relates to private alternatives (not mutual fund structure), an open-ended fund is a fund that has no stated term or maturity and allows clients to invest and redeem on an ongoing basis. The frequency of investments (aka subscriptions) and / or redemptions may vary. Redemptions from open-ended private alternative funds generally require advance notice in writing.

Pari Passu – At an equal rate or pace, without preference.

Portfolio company – A business entity that has secured at least one round of financing from one or more private equity funds. A company in which a given fund has invested.

Post-money valuation – The valuation of a company immediately after the most recent round of financing. For example, a venture capitalist may invest $3.5 million in a company valued at $2 million “pre-money” (before the investment was made). As a result, the startup will have a post money valuation of $5.5 million.

Pre-money valuation – The valuation of a company prior to a round of investment. This amount is determined by using various calculation methods, such as multiples to earnings or comparable to other private and/or public companies.

Preferred return – Also known as Hurdle Rate.

Private equity – Equity capital invested in a private company through a negotiated process.

Primary investment – An investment made in a newly formed limited partnership.

Real estate investment trust (REITs) – Stocks listed on an exchange that represent an interest in a pool of real estate properties.

Realized value – The amount of capital extracted from an investment.

Reported/remaining value – The current stated value for each of the investments in a fund, as reported by the General Partner of the fund.

Return on equity (RoE) - Amount of net income returned as a percentage of shareholders' equity.

Secondary market investment – The buying and selling of pre-existing investor commitments.

Seed money – The first round of capital for a start-up business. Seed money usually takes the structure of a loan or an investment in preferred stock or convertible bonds, although sometimes it is common stock. Seed money provides startup companies with the capital required for their initial development and growth. Angel investors and early-stage venture capital funds often provide seed money.

Tax documents – See K-1.

Total value – The combination of market value and realized value of an investment. Shows the total worth of an investment.

Unfunded commitment – Money that has been committed to an investment but not yet transferred to the General Partner.

Venture capital – A specialized form of private equity, characterized chiefly by high-risk investment in new or young companies following a growth path in technology and other value-added sectors.

Vintage year – The year of fund formation and first draw-down of capital.

Write-down – A reduction in the value of an investment.
The Market Insights program provides comprehensive data and commentary on global markets without reference to products. Designed as a tool to help clients understand the markets and support investment decision-making, the program explores the implications of current economic data and changing market conditions.

The views contained herein are not to be taken as advice or a recommendation to buy or sell any investment in any jurisdiction, nor is it a commitment from J.P. Morgan Asset Management or any of its subsidiaries to participate in any of the transactions mentioned herein. Any forecasts, figures, opinions or investment techniques and strategies set out are for information purposes only, based on certain assumptions and current market conditions and are subject to change without prior notice. All information presented herein is considered to be accurate at the time of production. This material does not contain sufficient information to support an investment decision and it should not be relied upon by you in evaluating the merits of investing in any securities or products. In addition, users should make an independent assessment of the legal, regulatory, tax, credit and accounting implications and determine, together with their own professional advisers, if any investment mentioned herein is believed to be suitable to their personal goals. Investors should ensure that they obtain all available relevant information before making any investment. It should be noted that investment involves risks, the value of investments and the income from them may fluctuate in accordance with market conditions and taxation agreements and investors may not get back the full amount invested. Both past performance and yields are not reliable indicators of current and future results.

J.P. Morgan Asset Management is the brand for the asset management business of JPMorgan Chase & Co. and its affiliates worldwide.

To the extent permitted by applicable law, we may record telephone calls and monitor electronic communications to comply with our legal and regulatory obligations and internal policies. Personal data will be collected, stored and processed by J.P. Morgan Asset Management in accordance with our Company’s Privacy Policy. For further information regarding our local privacy policies, please follow the respective links: Australia (https://www.jpmorgan.com/country/AU/EN/privacy), EMEA (https://am.jpmorgan.com/us/en/asset-management/am/mod/legal/external-privacy-policy), Japan (https://www.jpmorganasset.co.jp/wps/portal/Policy/Privacy), Hong Kong (https://am.jpmorgan.com/hk/en/asset-management/per/privacy-statement), Singapore (http://www.jpmorganam.com.sg/privacy) and Taiwan (https://www.jpmrich.com.tw/wps/portaFooter/Privacy).

This communication is issued by the following entities: in the United Kingdom by JPMorgan Asset Management (UK) Limited, which is authorized and regulated by the Financial Conduct Authority; in other European jurisdictions by JPMorgan Asset Management (Europe) S.à r.l.; in Hong Kong by JPMorgan Asset Management (Asia Pacific) Limited, or JPMorgan Funds (Asia) Limited, or JPMorgan Asset Management Real Assets (Asia) Limited; in Singapore by JPMorgan Asset Management (Singapore) Limited (Co. Reg. No. 197601586K), or JPMorgan Asset Management Real Assets (Singapore) Pte Ltd (Co. Reg. No. 201120355E); this advertisement or publication has not been reviewed by the Monetary Authority of Singapore; in Taiwan by JPMorgan Asset Management (Taiwan) Limited; in Japan by JPMorgan Asset Management (Japan) Limited which is a member of the Investment Trusts Association, Japan, the Japan Investment Advisers Association, Type II Financial Instruments Firms Association and the Japan Securities Dealers Association and is regulated by the Financial Services Agency (registration number “Kanto Local Finance Bureau (Financial Instruments Firm) No. 330”); in Australia to wholesale clients only as defined in section 761A and 761G of the Corporations Act 2001 (Cth) by JPMorgan Asset Management (Australia) Limited (ABN 55143832080) (AFSL 376919); in Brazil by Banco J.P. Morgan S.A.; in Canada for institutional clients’ use only by JPMorgan Asset Management (Canada) Inc., and in the United States by J.P. Morgan Institutional Investments, Inc. or JPMorgan Distribution Services, Inc., both are members of FINRA; J.P. Morgan Investment Management, Inc. or J.P. Morgan Alternative Asset Management, Inc.

In APAC, distribution is for Hong Kong, Taiwan, Japan and Singapore. For all other countries in APAC, to intended recipients only.

Copyright 2019 JPMorgan Chase & Co. All rights reserved.

Unless otherwise stated, all data are as of August 31, 2019 or most recently available.