<table>
<thead>
<tr>
<th><strong>Alts in aggregate</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Alternatives fundraising</td>
</tr>
<tr>
<td>4. Public and private market correlations</td>
</tr>
<tr>
<td>5. Alternatives and manager selection</td>
</tr>
<tr>
<td>6. Yield alternatives</td>
</tr>
<tr>
<td>7. Alternatives and ESG</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Global real estate</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Global real estate investment</td>
</tr>
<tr>
<td>9. U.S. real estate dynamics</td>
</tr>
<tr>
<td>10. U.S. real estate: Office</td>
</tr>
<tr>
<td>11. U.S. real estate: Retail and industrial</td>
</tr>
<tr>
<td>12. U.S. REITs and real estate</td>
</tr>
<tr>
<td>13. U.S. REITs sector returns</td>
</tr>
<tr>
<td>14. Europe real estate dynamics</td>
</tr>
<tr>
<td>15. APAC real estate: Industrial</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Global infrastructure and transport</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Global infrastructure investment</td>
</tr>
<tr>
<td>17. Sources of global infrastructure returns</td>
</tr>
<tr>
<td>18. Electricity consumption and utility spending</td>
</tr>
<tr>
<td>19. Global renewable energy</td>
</tr>
<tr>
<td>20. Global banks' shipping finance</td>
</tr>
<tr>
<td>21. High frequency travel</td>
</tr>
<tr>
<td>22. Energy prices and storage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Private markets</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>23. Private equity returns and dry powder</td>
</tr>
<tr>
<td>24. Private equity deals and multiples</td>
</tr>
<tr>
<td>25. Private equity deal trends</td>
</tr>
<tr>
<td>26. U.S. public vs. private equity</td>
</tr>
<tr>
<td>27. Private equity exit activity and equity issuance</td>
</tr>
<tr>
<td>28. Private equity acquisitions and the secondary market</td>
</tr>
<tr>
<td>29. Credit returns across recent economic cycles: 2004 - 2019</td>
</tr>
<tr>
<td>30. The Federal Reserve balance sheet and credit facilities</td>
</tr>
<tr>
<td>31. Credit market participants and issuance</td>
</tr>
<tr>
<td>32. U.S. middle market: Multiples and spreads</td>
</tr>
<tr>
<td>33. EBITDA adjustments, rating changes and recovery rates</td>
</tr>
<tr>
<td>34. Collateralized loan obligations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Hedge funds</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>35. Hedge fund strategy returns</td>
</tr>
<tr>
<td>36. Hedge funds and manager selection</td>
</tr>
<tr>
<td>37. Hedge fund flows and exposures</td>
</tr>
<tr>
<td>38. Hedge funds and traditional portfolios</td>
</tr>
<tr>
<td>39. Hedge funds and volatility</td>
</tr>
<tr>
<td>40. Equity and credit dislocations</td>
</tr>
<tr>
<td>41. Equity and fixed income positioning</td>
</tr>
<tr>
<td>42. Asset class volatility</td>
</tr>
<tr>
<td>43. Hedge funds and the global equity market</td>
</tr>
</tbody>
</table>

---

**Prepared by:**

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

### Billsions USD

<table>
<thead>
<tr>
<th>Year</th>
<th>Private equity</th>
<th>Private credit</th>
<th>Real estate</th>
<th>Infrastructure</th>
<th>Natural resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>'11</td>
<td>$419</td>
<td>36</td>
<td>27</td>
<td>75</td>
<td>66</td>
</tr>
<tr>
<td>'12</td>
<td>$502</td>
<td>66</td>
<td>32</td>
<td>49</td>
<td>40</td>
</tr>
<tr>
<td>'13</td>
<td>$73</td>
<td>49</td>
<td>91</td>
<td>116</td>
<td>68</td>
</tr>
<tr>
<td>'14</td>
<td>$646</td>
<td>73</td>
<td>72</td>
<td>123</td>
<td>336</td>
</tr>
<tr>
<td>'15</td>
<td>$740</td>
<td>75</td>
<td>47</td>
<td>146</td>
<td>426</td>
</tr>
<tr>
<td>'16</td>
<td>$849</td>
<td>103</td>
<td>58</td>
<td>134</td>
<td>440</td>
</tr>
<tr>
<td>'17</td>
<td>$959</td>
<td>90</td>
<td>70</td>
<td>142</td>
<td>547</td>
</tr>
<tr>
<td>'18</td>
<td>$1,089</td>
<td>99</td>
<td>80</td>
<td>149</td>
<td>642</td>
</tr>
<tr>
<td>'19</td>
<td>$1,108</td>
<td>103</td>
<td>92</td>
<td>157</td>
<td>644</td>
</tr>
<tr>
<td>'20</td>
<td>$1,121</td>
<td>119</td>
<td>104</td>
<td>116</td>
<td>624</td>
</tr>
</tbody>
</table>

Source: Preqin, 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 May 31, 2020.
## Public and private market correlations

### Quarterly returns

<table>
<thead>
<tr>
<th></th>
<th>2008 - 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Global Bonds</td>
</tr>
<tr>
<td>Global Bonds</td>
<td>1.0</td>
</tr>
<tr>
<td>Global Equities</td>
<td>0.3</td>
</tr>
<tr>
<td>U.S. Core RE</td>
<td>-0.1</td>
</tr>
<tr>
<td>Europe Core RE</td>
<td>-0.2</td>
</tr>
<tr>
<td>APAC Core RE</td>
<td>-0.2</td>
</tr>
<tr>
<td>Global Core Infra</td>
<td>-0.1</td>
</tr>
<tr>
<td>Direct Lending</td>
<td>-0.1</td>
</tr>
<tr>
<td>Venture Capital</td>
<td>-0.1</td>
</tr>
<tr>
<td>Private Equity</td>
<td>0.1</td>
</tr>
<tr>
<td>Equity Long/Short</td>
<td>0.2</td>
</tr>
<tr>
<td>Relative Value</td>
<td>0.1</td>
</tr>
<tr>
<td>Macro</td>
<td>0.3</td>
</tr>
</tbody>
</table>


Data is based on availability as of May 31, 2020.
Private and public manager dispersion
Based on returns over a 10 year window*

- Global equities: Median 3.2%, Top quartile 12.2%
- Global bonds: Median 1.8%, Top quartile 10.7%
- U.S. core real estate: Median 5.6%, Top quartile 16.3%
- U.S. non-core real estate: Median 1.9%, Top quartile 20.1%
- Global private equity: Median -2.9%, Top quartile 20.6%
- U.S. venture capital: Median -0.8%, Top quartile 13.2%


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: 4Q 2009 – 4Q 2019 annual returns for global equities, global bonds, U.S. core real estate and hedge funds. U.S. non-core real estate, global private equity and U.S. venture capital are represented by the 10-year horizon internal rate of return (IRR) ending 4Q 2019.

Data is based on availability as of May 31, 2020.
Guide to Alternatives

Yield alternatives

Source: BAML, Barclays, Bloomberg, Clarkson, Cliffwater, Drewry Maritime Consultants, Federal Reserve, FTSE, MSCI, NCREIF, FactSet, J.P. Morgan Asset Management. Yields are as of 03/31/2020, except Direct Lending, Global Infrastructure, Europe and APAC Real Estate (12/31/2019). 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 are calculated and respective weightings are applied to arrive at the current levered yields for Global Transportation; Preferreds: BAML Hybrid Preferred Securities; 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 yr.): Bloomberg Barclays Euro Aggregate Government – Treasury (7-10Y).

Data is based on availability as of May 31, 2020.
ESG mentions on earnings calls
Russell 3000, number of mentions, annual

ESG incorporation by alternative investment funds
Billions USD


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. *2020 ESG mentions are through February 29, 2020.

Data is based on availability as of May 31, 2020.
Global real estate investment

Billions USD

Sources: CBRE Research, RCA (Americas), J.P. Morgan Asset Management.
APAC is Asia Pacific. EMEA is Europe, Middle East and Africa.
Data is based on availability as of May 31, 2020.
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 May 31, 2020.

Source: NCREIF, NAREIT, J.P. Morgan Asset Management.
Flexible office space: Inventory and penetration
Millions of square feet, % penetration

Sources: CBRE J.P. Morgan Asset Management.
2020 data on inventory and penetration is an estimate.
Data is based on availability as of May 31, 2020.
Sources: CBRE, Census Bureau, J.P. Morgan Asset Management.

2020 data on inventory and penetration is an estimate. Gross leasable area (GLA) data is as of 2017.

Data is based on availability as of May 31, 2020.
U.S. REITs and real estate

U.S. REITs, real estate, and equities
12-quarter rolling correlations, total return

-1 -0.8 -0.6 -0.4 -0.2 0 0.2 0.4 0.6 0.8 1

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 May 31, 2020.
### U.S. REITs 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>
</tr>
</thead>
<tbody>
<tr>
<td>47.0%</td>
<td>35.2%</td>
<td>31.3%</td>
<td>25.2%</td>
<td>46.2%</td>
<td>40.6%</td>
<td>30.7%</td>
<td>28.4%</td>
<td>13.9%</td>
<td>49.1%</td>
<td>8.8%</td>
<td>22.9%</td>
<td>23.1%</td>
</tr>
<tr>
<td>Lodging/Resorts</td>
<td>Regional Malls</td>
<td>Regional Malls</td>
<td>Mfgd. Homes</td>
<td>Apartments</td>
<td>Mfgd. Homes</td>
<td>Data Centers</td>
<td>Mfgd. Homes</td>
<td>Industrial</td>
<td>Self Storage</td>
<td>Self Storage</td>
<td>Industrial</td>
<td>Lodging/Resorts</td>
</tr>
<tr>
<td>42.8%</td>
<td>22.0%</td>
<td>28.3%</td>
<td>10.5%</td>
<td>39.6%</td>
<td>25.6%</td>
<td>26.4%</td>
<td>25.7%</td>
<td>14.9%</td>
<td>47.4%</td>
<td>8.0%</td>
<td>16.3%</td>
<td>20.9%</td>
</tr>
<tr>
<td>Ret. Free Standing</td>
<td>Mfgd. Homes</td>
<td>Shopping Centers</td>
<td>Self Storage</td>
<td>Health Care</td>
<td>Apartments</td>
<td>Lodging/Resorts</td>
<td>Industrial</td>
<td>Health Care</td>
<td>Data Centers</td>
<td>Industrial</td>
<td>Regional Malls</td>
<td>Lodging/Resorts</td>
</tr>
<tr>
<td>37.4%</td>
<td>28.5%</td>
<td>9.5%</td>
<td>33.3%</td>
<td>16.5%</td>
<td>24.3%</td>
<td>20.6%</td>
<td>7.6%</td>
<td>44.2%</td>
<td>10.3%</td>
<td>16.3%</td>
<td>17.9%</td>
<td>16.8%</td>
</tr>
<tr>
<td>34.6%</td>
<td>15.1%</td>
<td>22.5%</td>
<td>7.4%</td>
<td>32.6%</td>
<td>5.9%</td>
<td>17.0%</td>
<td>8.7%</td>
<td>3.7%</td>
<td>31.4%</td>
<td>17.3%</td>
<td>14.4%</td>
<td>16.8%</td>
</tr>
<tr>
<td>Shopping Centers</td>
<td>Health Care</td>
<td>Health Care</td>
<td>Shopping Centers</td>
<td>Lodging/Resorts</td>
<td>Mfgd. Homes</td>
<td>Lodging/Resorts</td>
<td>Self Storage</td>
<td>All Equity</td>
<td>All Equity</td>
<td>Ret. Free Standing</td>
<td>Regional Malls</td>
<td>Health Care</td>
</tr>
<tr>
<td>30.8%</td>
<td>13.6%</td>
<td>20.4%</td>
<td>7.3%</td>
<td>32.5%</td>
<td>14.2%</td>
<td>7.2%</td>
<td>2.8%</td>
<td>28.7%</td>
<td>23.4%</td>
<td>13.7%</td>
<td>16.1%</td>
<td>16.1%</td>
</tr>
<tr>
<td>Self Storage</td>
<td>All Equity</td>
<td>Self Storage</td>
<td>Office</td>
<td>Self Storage</td>
<td>Regional Malls</td>
<td>Office</td>
<td>All Equity</td>
<td>Office</td>
<td>Industrial</td>
<td>All Equity</td>
<td>Apartments</td>
<td>Regional Malls</td>
</tr>
<tr>
<td>29.3%</td>
<td>8.3%</td>
<td>19.9%</td>
<td>5.6%</td>
<td>31.4%</td>
<td>4.2%</td>
<td>13.2%</td>
<td>5.2%</td>
<td>2.5%</td>
<td>26.3%</td>
<td>26.3%</td>
<td>12.6%</td>
<td>16.1%</td>
</tr>
<tr>
<td>All Equity</td>
<td>Ret. Free Standing</td>
<td>All Equity</td>
<td>Shopping Centers</td>
<td>All Equity</td>
<td>Shopping Centers</td>
<td>All Equity</td>
<td>Self Storage</td>
<td>All Equity</td>
<td>Self Storage</td>
<td>Office</td>
<td>Mfgd. Homes</td>
<td>Office</td>
</tr>
<tr>
<td>27.9%</td>
<td>0.4%</td>
<td>19.7%</td>
<td>5.0%</td>
<td>30.0%</td>
<td>2.8%</td>
<td>8.6%</td>
<td>3.7%</td>
<td>4.0%</td>
<td>28.0%</td>
<td>10.1%</td>
<td>16.0%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Mfgd. Homes</td>
<td>Shopping Centers</td>
<td>Office</td>
<td>All Equity</td>
<td>All Equity</td>
<td>Industrial</td>
<td>Health Care</td>
<td>Apartments</td>
<td>Regional Malls</td>
<td>Ret. Free Standing</td>
<td>Ret. Free Standing</td>
<td>Regional Malls</td>
<td>Lodging/Resorts</td>
</tr>
<tr>
<td>27.0%</td>
<td>-0.7%</td>
<td>14.2%</td>
<td>2.9%</td>
<td>28.0%</td>
<td>2.6%</td>
<td>6.4%</td>
<td>3.7%</td>
<td>-7.0%</td>
<td>24.8%</td>
<td>-36.3%</td>
<td>9.1%</td>
<td>15.2%</td>
</tr>
<tr>
<td>Health Care</td>
<td>Office</td>
<td>Lodging/Resorts</td>
<td>Regional Malls</td>
<td>Office</td>
<td>Shopping Centers</td>
<td>Lodging/Resorts</td>
<td>All Equity</td>
<td>Lodging/Resorts</td>
<td>Health Care</td>
<td>Lodging/Resorts</td>
<td>Mfgd. Homes</td>
<td>Office</td>
</tr>
<tr>
<td>19.2%</td>
<td>-0.8%</td>
<td>12.5%</td>
<td>-1.0%</td>
<td>25.9%</td>
<td>0.3%</td>
<td>3.7%</td>
<td>-12.8%</td>
<td>21.2%</td>
<td>-36.8%</td>
<td>8.9%</td>
<td>14.1%</td>
<td>13.4%</td>
</tr>
<tr>
<td>Industrial</td>
<td>Industrial</td>
<td>Mfgd. Homes</td>
<td>Apartments</td>
<td>Industrial</td>
<td>Health Care</td>
<td>Apartments</td>
<td>Health Care</td>
<td>Data Centers</td>
<td>Lodging/Resorts</td>
<td>Shopping Centers</td>
<td>All Equity</td>
<td>Office</td>
</tr>
<tr>
<td>18.9%</td>
<td>-5.2%</td>
<td>7.1%</td>
<td>-6.2%</td>
<td>21.0%</td>
<td>-7.2%</td>
<td>2.9%</td>
<td>0.9%</td>
<td>-14.1%</td>
<td>15.6%</td>
<td>49.5%</td>
<td>8.6%</td>
<td>13.3%</td>
</tr>
<tr>
<td>Office</td>
<td>Lodging/Resorts</td>
<td>Apartments</td>
<td>Health Care</td>
<td>Ret. Free Standing</td>
<td>Lodging/Resorts</td>
<td>Regional Malls</td>
<td>Regional Malls</td>
<td>Self Storage</td>
<td>Lodging/Resorts</td>
<td>Regional Malls</td>
<td>Regional Malls</td>
<td>Data Centers</td>
</tr>
<tr>
<td>18.4%</td>
<td>-14.3%</td>
<td>6.9%</td>
<td>-7.1%</td>
<td>0.7%</td>
<td>-24.4%</td>
<td>-2.7%</td>
<td>-14.5%</td>
<td>13.7%</td>
<td>-60.4%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Data Centers</td>
<td>Data Centers</td>
<td>Data Centers</td>
<td>Data Centers</td>
<td>Data Centers</td>
<td>Self Storage</td>
<td>Data Centers</td>
<td>Data Centers</td>
<td>Data Centers</td>
<td>Data Centers</td>
<td>Data Centers</td>
<td>Data Centers</td>
<td>N/A</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 is through 3/31/2020. Data is based on availability as of May 31, 2020.
Europe real estate dynamics

**EU-15 property spreads by sector**
Spread to Euro Govt. (7-10 yr.)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Average</th>
<th>4Q19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>4.0%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Office</td>
<td>2.0%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Retail</td>
<td>1.6%</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

Sources: RCA, CBRE, J.P. Morgan Asset Management.
EU-15 is Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom. Apt is apartment.
Data is based on availability as of May 31, 2020.
**APAC real estate: Industrial**

Sources: Oxford Economics, Jones Lang LaSalle REIS, CBRE, J.P. Morgan Asset Management.

Data is based on availability as of May 31, 2020.

**APAC online retail sales**

Percent of total retail sales

- China: 17%
- South Korea: 16%
- United States: 15%
- Japan: 14%
- Australia: 13%
- New Zealand: 12%
- Singapore: 11%

**APAC office and industrial pricing**

Yields, 1Q 2020

- Prime Office: New York (5%), Seoul (4%), Singapore (3%), China (2%), Auckland (1%), Sydney (1%), Hong Kong (1%), Tokyo (1%)
- Prime Warehouse: New York (5%), Seoul (4%), Singapore (3%), China (2%), Auckland (1%), Sydney (1%), Hong Kong (1%), Tokyo (1%)
# Average annual infrastructure need

<table>
<thead>
<tr>
<th>Infrastructure</th>
<th>Annual spending, % of GDP</th>
<th>Average annual infrastructure need, USD trillions, constant 2017 dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads</td>
<td>1.0</td>
<td>$0.9</td>
</tr>
<tr>
<td>Rail</td>
<td>0.4</td>
<td>$0.4</td>
</tr>
<tr>
<td>Ports</td>
<td>0.1</td>
<td>$0.1</td>
</tr>
<tr>
<td>Airports</td>
<td>0.1</td>
<td>$0.1</td>
</tr>
<tr>
<td>Power</td>
<td>1.3</td>
<td>$1.1</td>
</tr>
<tr>
<td>Water</td>
<td>0.5</td>
<td>$0.5</td>
</tr>
<tr>
<td>Telecom</td>
<td>0.6</td>
<td>$0.5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$3.6</td>
</tr>
</tbody>
</table>

Data is based on availability as of May 31, 2020.
Sources of global infrastructure returns

Guide to Alternatives | 17

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 May 31, 2020.
Electricity consumption and utility spending

Electricity consumption post COVID-19
Percent, 5-day moving average

Household utility spending
Household utility spending % of personal consumption expenditures

Source: Steve Cicala, University of Chicago, Bureau of Economic Analysis, J.P. Morgan Asset Management.
Data is based on availability as of May 31, 2020.
Global new investment in clean energy
Billions USD

Cost of wind, solar, natural gas and coal
Mean LCOE*, dollar per megawatt hour

Share of energy from renewable sources
% of total energy, 2018


*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 May 31, 2020.
Global banks’ shipping finance

Shipping loans volume

Source: Dealogic, UNCTAD, J.P. Morgan Asset Management.
Data is based on availability as of May 31, 2020.
High frequency travel

Guide to Alternatives

Travel activity
Year-over-year % change

Source: Apple, Inc., FlightRadar24, Transportation Security Administration (TSA), Metropolitan Transportation Authority (MTA), Association of American Railroads (AAR), Bloomberg, FactSet, J.P. Morgan Asset Management.

Driving directions, total global flights, MTA turnstile entries and the Baltic Dry Index are 7-day moving averages. Driving directions are relative to a pre-pandemic baseline on January 13, 2020.

Data is based on availability as of May 31, 2020.
Transport

Energy prices and storage

Cost of oil production by country and WTI oil price
USD per barrel, 2015*

Net oil stock % of working storage capacity
Cushing, OK

Very large crude carrier (VLCC) charter rates
USD thousands, rate per day for a 12 month period


*U.S. cost of production is based on the April 2020 Dallas Fed Energy Survey and represents the mean breakeven oil price for new wells of 92 E&P companies. Current oil price is as of 3/31/2020.

Data is based on availability as of May 31, 2020.
Private equity returns and dry powder

**Private equity IRRs**
By size bucket and vintage

- **Top quartile**
- **Bottom quartile**
- **Median**

<table>
<thead>
<tr>
<th>Year</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 – 2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004 – 2008</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009 – 2013</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Private equity dry powder**
Billions USD, by vintage year

<table>
<thead>
<tr>
<th>Year</th>
<th>'12</th>
<th>'13</th>
<th>'14</th>
<th>'15</th>
<th>'16</th>
<th>'17</th>
<th>'18</th>
<th>'19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$12.9</td>
<td>$21.3</td>
<td>$31.6</td>
<td>$61.7</td>
<td>$99.9</td>
<td>$271.6</td>
<td>$315.9</td>
<td>$434.2</td>
</tr>
</tbody>
</table>

Source: Pitchbook, J.P. Morgan Asset Management.
Data is based on availability as of May 31, 2020.
Private equity deals and multiples


Data is based on availability as of May 31, 2020.
Private equity deal trends

Oil prices and natural resource exits
Energy & materials exit 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.

WTI oil price is a quarterly average. Software investment is represented by nonresidential fixed investment in software.

Data is based on availability as of May 31, 2020.
Number of listed U.S. companies*


*Number of listed U.S. companies is represented by the sum of number of companies listed on the NYSE and the NASDAQ. **Other includes real estate and utilities. Percentages may not sum due to rounding. Number of listed U.S. companies in 2020 is as of 3/31/2020.

Data is based on availability as of May 31, 2020.
Private equity exit activity and equity issuance

**Private equity exits by type**

Billions USD

<table>
<thead>
<tr>
<th>Year</th>
<th>Secondary buyout</th>
<th>IPO</th>
<th>Corporate acquisition</th>
</tr>
</thead>
<tbody>
<tr>
<td>'06</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'07</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'08</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'09</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'10</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'11</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'12</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'13</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'14</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'15</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'16</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'17</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'18</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>'19</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

**Annual follow-on equity issuance**

Billions USD

- **“Defensive” sectors**
- **“Cyclical” sectors**

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

Cyclical sectors include technology, financials, industrials, materials, energy, real estate, consumer discretionary and communication services.

Defensive sectors include healthcare, utilities, and consumer staples.

Data is based on availability as of May 31, 2020.
Sponsor-backed acquisitions of public companies
Share of total deal count

Secondary market transaction volume and pricing
Secondary buyouts by year, $bn, percent of net asset value (NAV)


*2020 public company acquisition data is as of March 31, 2020.
Data is based on availability as of May 31, 2020.
Credit returns across recent economic cycles: 2004 - 2019

**Expansion**
Manufacturing ISM > 50 and rising

- 10y UST: 0.2%
- 2y UST: 0.3%
- U.S. IG: 0.9%
- U.S. HY: 2.3%
- U.S. leveraged loans: 1.5%
- U.S. direct lending: 3.0%

**Recession**
Manufacturing ISM < 50 and falling

- 10y UST: 2.9%
- 2y UST: 1.4%
- U.S. IG: -0.3%
- U.S. HY: -3.1%
- U.S. leveraged loans: -3.8%
- U.S. direct lending: -0.9%

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

- 10y UST: 2.3%
- 2y UST: 0.7%
- U.S. IG: 1.6%
- U.S. HY: 1.4%
- U.S. leveraged loans: 0.9%
- U.S. direct lending: 2.4%

**Turnaround**
Manufacturing ISM < 50 and rising

- 10y UST: -1.6%
- 2y UST: -0.1%
- U.S. IG: 4.6%
- U.S. HY: 9.4%
- U.S. leveraged loans: 8.1%
- U.S. direct lending: 2.3%


Data is based on availability as of May 31, 2020.
Currently, the balance sheet contains $4.1 trillion in Treasuries and $1.8 trillion in MBS. The end balance forecast is $4.9 trillion in Treasuries and $2.2 trillion in MBS by December 2020. *Balance sheet forecast includes the Federal Reserve to purchase $770bn of Treasuries, $295bn of agency MBS and $35bn of agency CMBS through 2020. **MBS forecast includes agency CMBS. Fed assumptions are based on purchase activity in April 2020 and previous QE announcements. The Federal Reserve’s credit facilities include the Primary Dealer Credit Facility (PDCF), Commercial Paper Funding Facility (CPFF), Money Market Mutual Fund Liquidity Facility (MMLF), Term Asset-Backed Securities Loan Facility (TALF), Secondary Market Corporate Credit Facility (SMCCF), Primary Market Corporate Credit Facility (PMCCF), Municipal Liquidity Facility (MLF), Paycheck Protection Program Lending Facility (PPLF) and the Main Street Lending Facilities which include the Main Street Expanded Loan Facility (MSELF), Main Street New Loan Facility (MSNLF) and the Main Street Priority Loan Facility (MSPLF). Data is based on availability as of May 31, 2020.
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 May 31, 2020.

U.S. middle market: Multiples and spreads

Guide to Alternatives | 32

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

Data is based on availability as of May 31, 2020.

U.S. middle market and large corporate lending spreads
Based on 3-month U.S. dollar LIBOR

Private markets
EBITDA adjustments, rating changes and recovery rates

**Guide to Alternatives**

**Leveraged loan EBITDA adjustments**
M&A linked leveraged loans

**Average corporate debt recovery rates**
Volume weighted recovery rates based on trading prices

**Leveraged loan downgrades and upgrades**
Ratio of downgrades to upgrades, rolling 12 months

Data is based on availability as of May 31, 2020.
Collateralized loan obligations

CLO downgrades

Percent

B-  CCC  Nonperforming

0%  5%  10%  15%  20%  25%  30%  35%  40%


CLO exposure to COVID-19 sensitive sectors

Percent

Transportation  2.3%
Services  5.7%
Retail  3.7%
Gaming  Lodging and Leisure  6.2%

Data is based on availability as of May 31, 2020.
<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>
</tr>
</thead>
<tbody>
<tr>
<td>Global Equities</td>
<td>13.2%</td>
<td>Global Bonds</td>
<td>5.6%</td>
<td>Global Equities</td>
<td>16.8%</td>
<td>Global Equities</td>
<td>23.4%</td>
<td>Global Macro</td>
<td>5.6%</td>
<td>Eq. Market Neutral</td>
<td>4.3%</td>
<td>Distressed</td>
<td>15.1%</td>
</tr>
<tr>
<td>Distressed</td>
<td>12.1%</td>
<td>Merger Arbitrage</td>
<td>1.5%</td>
<td>Relative Value</td>
<td>10.6%</td>
<td>Equity Long/Short</td>
<td>14.3%</td>
<td>Global Equities</td>
<td>4.7%</td>
<td>Merger Arbitrage</td>
<td>3.3%</td>
<td>Global Equities</td>
<td>8.5%</td>
</tr>
<tr>
<td>Relative Value</td>
<td>11.4%</td>
<td>Relative Value</td>
<td>0.1%</td>
<td>Distressed</td>
<td>10.1%</td>
<td>Relative Value</td>
<td>14.0%</td>
<td>Relative Value</td>
<td>4.0%</td>
<td>Relative Value</td>
<td>-0.3%</td>
<td>Relative Value</td>
<td>7.7%</td>
</tr>
<tr>
<td>Equity Long/Short</td>
<td>10.5%</td>
<td>Distressed</td>
<td>-1.8%</td>
<td>Equity Long/Short</td>
<td>7.4%</td>
<td>HFRF Composite</td>
<td>9.1%</td>
<td>Eq. Market Neutral</td>
<td>3.1%</td>
<td>Equity Long/Short</td>
<td>-1.0%</td>
<td>Equity Long/Short</td>
<td>5.5%</td>
</tr>
<tr>
<td>HFRF Composite</td>
<td>10.2%</td>
<td>Eq. Market Neutral</td>
<td>-2.1%</td>
<td>HFRF Composite</td>
<td>6.4%</td>
<td>Relative Value</td>
<td>7.1%</td>
<td>HFRF Composite</td>
<td>3.0%</td>
<td>HFRF Composite</td>
<td>-1.1%</td>
<td>HFRF Composite</td>
<td>5.4%</td>
</tr>
<tr>
<td>Global Macro</td>
<td>8.1%</td>
<td>Global Macro</td>
<td>-4.2%</td>
<td>Global Bonds</td>
<td>4.3%</td>
<td>Eq. Market Neutral</td>
<td>6.5%</td>
<td>Global Macro</td>
<td>-1.8%</td>
<td>Merger Arbitrage</td>
<td>3.6%</td>
<td>Relative Value</td>
<td>5.1%</td>
</tr>
<tr>
<td>Global Bonds</td>
<td>5.5%</td>
<td>HFRF Composite</td>
<td>-5.3%</td>
<td>Eq. Market Neutral</td>
<td>3.0%</td>
<td>Merger Arbitrage</td>
<td>4.7%</td>
<td>Merger Arbitrage</td>
<td>1.7%</td>
<td>Global Equities</td>
<td>-1.8%</td>
<td>Eq. Market Neutral</td>
<td>2.2%</td>
</tr>
<tr>
<td>Merger Arbitrage</td>
<td>4.6%</td>
<td>Global Equities</td>
<td>-6.9%</td>
<td>Merger Arbitrage</td>
<td>2.8%</td>
<td>Global Macro</td>
<td>0.6%</td>
<td>Global Bonds</td>
<td>-3.2%</td>
<td>Global Equities</td>
<td>2.1%</td>
<td>Merger Arbitrage</td>
<td>4.3%</td>
</tr>
<tr>
<td>Eq. Market Neutral</td>
<td>2.9%</td>
<td>Equity Long/Short</td>
<td>-8.4%</td>
<td>Global Macro</td>
<td>-0.1%</td>
<td>Global Bonds</td>
<td>-2.6%</td>
<td>Distressed</td>
<td>-1.4%</td>
<td>Distressed</td>
<td>-8.1%</td>
<td>Global Macro</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

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. HFRF 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 3/31/2020.
Data is based on availability as of May 31, 2020.
Hedge fund manager dispersion
Based on returns from 4Q 2009 – 4Q 2019

Sources: HFRI, J.P. Morgan Asset Management.
Manager dispersion is based on: 4Q 2009 to 4Q 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 May 31, 2020.
Hedge fund flows and exposures

Hedge fund net asset flow
Billions USD

Source: HFRI, FactSet, J.P. Morgan Asset Management.
Data is based on availability as of May 31, 2020.

Sector exposure of top 50 hedge funds
% of total portfolio

Source: HFRI, FactSet, J.P. Morgan Asset Management.
Data is based on availability as of May 31, 2020.
Hedge fund correlation with a 60/40 stock-bond portfolio*
1990 – present, monthly

Hedge funds

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 May 31, 2020.
### Hedge funds and volatility

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

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. Numbers may not sum to 100% due to rounding.

Data is based on availability as of May 31, 2020.

---

### 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.
**Equity and credit dislocations**

**S&P 500 constituent correlation**
3-month moving average

**Corporate bond spread dispersion**
Index weighted standard deviation of sector spreads, basis points

Sources: S&P Global, HFRI, FactSet J.P. Morgan Asset Management.

Dispersion is the annualized, index-weighed standard deviation of the index constituents’ full-month total returns. Correlation is the correlations among daily returns of the index constituents during the month, calculated via the ratio of index variance to the index-weighed average constituent variance.

Data is based on availability as of May 31, 2020.
S&P 500 E-Mini and 10-yr. U.S. Treasury Note positioning
Net noncommercial futures positions as a percent of open interest

Source: CFTC, FactSet, J.P. Morgan Asset Management.
Data is based on availability as of May 31, 2020.
Equity, interest rate and foreign exchange volatility

Z-score, weekly

Growth in new COVID-19 cases and the VIX

# of countries with higher than a 5% growth rate in daily number of confirmed cases, VIX Index level


Equity volatility is represented by the VIX Index, interest rate volatility is represented by the MOVE Index and foreign exchange volatility is represented by the J.P. Morgan Global FX Volatility Index. COVID-19 data includes data from 185 countries.

Data is based on availability as of May 31, 2020.
Global hedge fund beta to the MSCI AC World index

21-day rolling correlation

Source: HFRX, MSCI, FactSet, J.P. Morgan Asset Management.
Global hedge funds are represented by the HFRX Global Hedge Fund index.
Data is based on availability as of May 31, 2020.
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. Opportunistic/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 under- 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.

For the purposes of MiFID II, the JPM Market Insights and Portfolio Insights programs are marketing communications and are not in scope for any MiFID II / MiFIR requirements specifically related to investment research. Furthermore, the J.P. Morgan Asset Management Market Insights and Portfolio Insights programs, as non-independent research, have not been prepared in accordance with legal requirements designed to promote the independence of investment research, nor are they subject to any prohibition on dealing ahead of the dissemination of investment research.

This document is a general communication being provided for informational purposes only. It is educational in nature and not designed to be taken as advice or a recommendation for any specific investment product, strategy, plan feature or other purpose 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 examples used are generic, hypothetical and for illustration purposes only. 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 financial professional, if any investment mentioned herein is believed to be appropriate for their personal goals. Investors should ensure that they obtain all available relevant information before making any investment. 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, but no warranty of accuracy is given and no liability in respect of any error or omission is accepted. 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.

This communication is issued by the following entities:

In the United States, by J.P. Morgan Investment Management Inc. or J.P. Morgan Alternative Asset Management, Inc., both regulated by the Securities and Exchange Commission; in Latin America, for intended recipients’ use only, by local J.P. Morgan entities, as the case may be; in Canada, for institutional clients’ use only, by JPMorgan Asset Management (Canada) Inc., which is a registered Portfolio Manager and Exempt Market Dealer in all Canadian provinces and territories except the Yukon and is also registered as an Investment Fund Manager in British Columbia, Ontario, Quebec and Newfoundland and Labrador. 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 Asia Pacific (“APAC”), by the following issuing entities and in the respective jurisdictions in which they are primarily regulated: JPMorgan Asset Management (Asia Pacific) Limited, or JPMorgan Funds (Asia) Limited, or JPMorgan Asset Management Real Assets (Asia) Limited, each of which is regulated by the Securities and Futures Commission of Hong Kong; JPMorgan Asset Management (Singapore) Limited (Co. Reg. No. 197601569K), which this advertisement or publication has not been reviewed by the Monetary Authority of Singapore; JPMorgan Asset Management (Taiwan) Limited; 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 Firms) No. 330”), in Australia, to wholesale clients only as defined in section 761A and 761G of the Corporations Act 2001 (Commonwealth), by JPMorgan Asset Management (Australia) Limited (ABN 55143932080) (AFSL 376919). For all other markets in APAC, to intended recipients only.

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

For U.S. only: If you are a person with a disability and need additional support in viewing the material, please call us at 1-800-343-1113 for assistance.

Copyright 2020 JPMorgan Chase & Co. All rights reserved.

Unless otherwise stated, all data are as of May 31, 2020 or most recently available.

0903c02a8233e721