Shifting Landscape in Private Credit for Public Safety Plans

Public Safety Conference
October 2017
Contents

- J.P. Morgan Global Alternatives
- Why Private Credit?
- US Middle Market Direct Lending – Robust Product but Deteriorating Trends
- The Broader Opportunity Set – Diversified Private Credit
- Putting it All Together – Building a Diversified Private Credit Portfolio
J.P. Morgan Global Alternatives
Research driven: Independent investment teams coordinated on a global scale

Actively sharing our expertise

USD 120bn+ ASSETS UNDER MANAGEMENT
350+ INVESTMENT PROFESSIONALS
40+ YEARS OF ALTERNATIVES INVESTING
23 INVESTMENT OFFICES WORLDWIDE

J.P. Morgan Asset Management. As of June 30, 2017. Includes portfolio managers, research analysts, traders and client portfolio managers with VP title and above.
J.P. Morgan Global Alternatives: Solutions for Stronger Portfolios

Building the right investment portfolio

CLIENT NEEDS
- Absolute return
- Improved risk-adjusted returns
- Access to unique opportunities
- Low correlation
- Inflation protection
- Yield
- Capital preservation

CLIENT-DRIVEN INNOVATION
- Alternative beta
- Middle market lending
- Private equity secondaries
- Litigation receivables
- Real estate mezzanine
- Transportation
- Minc finance

ALTS USD 127.8bn AUM

J.P. Morgan Alternative Asset Management ("JPMAAM")

Deep experience, healthy skepticism and a focus on innovation differentiate JPMAAM

Hallmarks of JPMAAM

- Researching and investing in alternative managers on behalf of our clients since 1994
- Manage and advise on $13.1bn in multi-manager portfolios (81% in customized solutions)¹
- Senior team has an average of 15 years experience working together²
- Employ 81 professionals; 32 are dedicated to investment due diligence and risk management

Key Differentiators

- 20+ years of experience investing in niche strategies
- Access to emerging / early stage managers
- Industry leading proprietary technology and capabilities
- Low manager to analyst ratio

Experience in Diligencing Alternative Managers

- Team of 32 investment professionals meets 400 – 500 managers annually
- Current commitments of approximately $3.5bn in private credit oriented strategies³ across platform

¹Assets are estimated as of June 30, 2017 and includes USD 2.6B in advisory.
²Denotes senior JPMAAM professionals at the executive director level and above. Information is estimated through August 2017
³Commitments and investments are estimated as of June 30, 2017

The number of managers met annually is estimated and subject to change.
## Potential benefits of investing through JPMAAM vs. directly

### JPMAAM value add

#### Sourcing, analysis & manager selection
- Global sourcing network, 32 investment professionals meet 400-500 managers annually
- Broad view of the investment landscape which allows us to make educated relative value decisions
- Over 20 years of experience in manager selection

#### Scale & experience protecting LPs
- Scale to negotiate fee discounts
- Experience and scale to negotiate LP protections from a position of strength on the way into an investment. GP removal for cause, no fault termination, limits on LP claw-back, controls over deal flows allocation, etc.
- Typically ongoing representation on LP Advisory Committee

#### Operational due diligence
- Thorough operational due diligence ensuring: stability & depth of back office team, quality of service providers, valuation policy, adequate cash controls

#### Financing risk advice & analysis
- Brings a wealth of experience and contacts to bear when analyzing financial terms and counterparty risk
- We are in a position to help managers negotiate best-in-class terms with their leverage providers

#### Fund structure review
- Review underlying fund structures to weigh potential tax implications

#### Oversight & monitoring
- Continual interaction and portfolio updates with each investment manager
- Annual operational due diligence visits
- Annual financial audit review

---

Source: J.P. Morgan Alternative Asset Management. For illustrative and discussion purposes only. The number of managers met annually is estimated and subject to change. The above are examples of potential benefits, JPMAAM can offer investors. There is no guarantee that JPMAAM will achieve these benefits.
Private Credit Investing at JPMAAM

- JPMAAM has made approximately $3.5bn in commitments across the platform since 2012
- $2.4bn has been on behalf of dedicated private credit mandates\(^1\)
- 10.1% IRR and 1.12x MOIC to date

### Table: Private Credit Investing at JPMAAM

<table>
<thead>
<tr>
<th>Theme Sub-Theme</th>
<th>Strategy</th>
<th>Vintage Year</th>
<th>Commitment Size</th>
<th>Funded as % of Commitment</th>
<th>Distributions as % of Funded</th>
<th>Net IRR</th>
<th>Net MOIC</th>
<th>Fund Term, Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>Non-Agency RMBS + Putback</td>
<td>2012</td>
<td>34</td>
<td>100%</td>
<td>123%</td>
<td>14%</td>
<td>1.25x</td>
</tr>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>Small Ticket Distressed Debt – Liquidations</td>
<td>2013</td>
<td>71</td>
<td>100%</td>
<td>109%</td>
<td>8.1%</td>
<td>1.18x</td>
</tr>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>Non-Agency RMBS + Putback</td>
<td>2013</td>
<td>64</td>
<td>100%</td>
<td>116%</td>
<td>11.4%</td>
<td>1.16x</td>
</tr>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>Rights Appraisal Litigation</td>
<td>2013</td>
<td>98</td>
<td>100%</td>
<td>50%</td>
<td>8.9%</td>
<td>1.08x</td>
</tr>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>Distressed C&amp;I Credit</td>
<td>2013</td>
<td>25</td>
<td>100%</td>
<td>91%</td>
<td>16.3%</td>
<td>1.23x</td>
</tr>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>Government Receivables in Spain &amp; Portugal</td>
<td>2014</td>
<td>49</td>
<td>19%</td>
<td>91%</td>
<td>3.4%</td>
<td>1.04x</td>
</tr>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>Municipal Distressed Debt</td>
<td>2014</td>
<td>42</td>
<td>100%</td>
<td>26%</td>
<td>4.8%</td>
<td>0.91x</td>
</tr>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>US Small Balance Distressed CRE Loans</td>
<td>2015</td>
<td>83</td>
<td>68%</td>
<td>17%</td>
<td>7.5%</td>
<td>1.11x</td>
</tr>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>Small Ticket Distressed Debt – Liquidations</td>
<td>2015</td>
<td>54</td>
<td>70%</td>
<td>93%</td>
<td>14.3%</td>
<td>1.27x</td>
</tr>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>Distressed Corporate &amp; Loan Portfolios</td>
<td>2015</td>
<td>110</td>
<td>75%</td>
<td>0%</td>
<td>14.6%</td>
<td>1.17x</td>
</tr>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>Rights Appraisal Litigation II</td>
<td>2015</td>
<td>43</td>
<td>100%</td>
<td>14%</td>
<td>4.2%</td>
<td>1.04x</td>
</tr>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>Distressed C&amp;I Credit II</td>
<td>2016</td>
<td>40</td>
<td>19%</td>
<td>0%</td>
<td>-6.2%</td>
<td>0.97x</td>
</tr>
<tr>
<td>Asset Sales</td>
<td>Distressed</td>
<td>US Small Balance Distressed CRE Loans</td>
<td>2017</td>
<td>115</td>
<td>5%</td>
<td>3%</td>
<td>-14.2%</td>
<td>0.86x</td>
</tr>
<tr>
<td>Performing &amp; Non-Core</td>
<td>US Small Balance Distressed CRE Loans I</td>
<td>2016</td>
<td>70</td>
<td>100%</td>
<td>21%</td>
<td>9.9%</td>
<td>1.08x</td>
<td>5</td>
</tr>
<tr>
<td>Performing &amp; Non-Core</td>
<td>US Small Balance Distressed CRE Loans II</td>
<td>2016</td>
<td>64</td>
<td>60%</td>
<td>2%</td>
<td>4.9%</td>
<td>1.03x</td>
<td>5</td>
</tr>
<tr>
<td>Performing &amp; Non-Core</td>
<td>European Reg Capital Relief</td>
<td>2016</td>
<td>108</td>
<td>94%</td>
<td>5%</td>
<td>12.4%</td>
<td>1.11x</td>
<td>7</td>
</tr>
<tr>
<td>Performing &amp; Non-Core</td>
<td>US Small Balance Distressed CRE Loans III</td>
<td>2017</td>
<td>62</td>
<td>18%</td>
<td>0%</td>
<td>1.9%</td>
<td>1.01x</td>
<td>5</td>
</tr>
<tr>
<td>Performing &amp; Non-Core</td>
<td>European Small Balance Loan Portfolios</td>
<td>2017</td>
<td>80</td>
<td>47%</td>
<td>24%</td>
<td>28.2%</td>
<td>1.31x</td>
<td>6</td>
</tr>
<tr>
<td>Both</td>
<td>European Performing and Non-Performing Loans</td>
<td>2016</td>
<td>87</td>
<td>23%</td>
<td>9%</td>
<td>0.5%</td>
<td>1.00x</td>
<td>8</td>
</tr>
<tr>
<td>Both</td>
<td>Global Multi-Strategy</td>
<td>2017</td>
<td>114</td>
<td>0%</td>
<td>0%</td>
<td>N/A</td>
<td>N/A</td>
<td>7</td>
</tr>
<tr>
<td>New Loan Origination</td>
<td>Traditional</td>
<td>US Middle Market Direct Lending</td>
<td>2013</td>
<td>98</td>
<td>100%</td>
<td>90%</td>
<td>12.3%</td>
<td>1.14x</td>
</tr>
<tr>
<td>New Loan Origination</td>
<td>Traditional</td>
<td>Large CRE Loans for Super Prime Projects I</td>
<td>2014</td>
<td>71</td>
<td>38%</td>
<td>14%</td>
<td>7.6%</td>
<td>1.14x</td>
</tr>
<tr>
<td>New Loan Origination</td>
<td>Traditional</td>
<td>European Asset Backed Lender</td>
<td>2016</td>
<td>67</td>
<td>43%</td>
<td>0%</td>
<td>7.3%</td>
<td>1.05x</td>
</tr>
<tr>
<td>New Loan Origination</td>
<td>Traditional</td>
<td>European Asset Backed Lender</td>
<td>2016</td>
<td>53</td>
<td>15%</td>
<td>0%</td>
<td>-5.0%</td>
<td>0.97x</td>
</tr>
<tr>
<td>New Loan Origination</td>
<td>Traditional</td>
<td>Large CRE Loans for Super Prime Projects</td>
<td>2016</td>
<td>86</td>
<td>21%</td>
<td>4%</td>
<td>4.9%</td>
<td>1.03x</td>
</tr>
<tr>
<td>New Loan Origination</td>
<td>Traditional</td>
<td>Specialty Finance</td>
<td>2016</td>
<td>120</td>
<td>27%</td>
<td>11%</td>
<td>3.7%</td>
<td>1.02x</td>
</tr>
<tr>
<td>New Loan Origination</td>
<td>Traditional</td>
<td>US Residential Mortgage Origination</td>
<td>2017</td>
<td>67</td>
<td>92%</td>
<td>3%</td>
<td>4.8%</td>
<td>1.03x</td>
</tr>
<tr>
<td>New Loan Origination</td>
<td>Traditional</td>
<td>US Middle Market Direct Lending</td>
<td>2017</td>
<td>173</td>
<td>0%</td>
<td>0%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>New Loan Origination</td>
<td>Non-Traditional</td>
<td>US Middle Market Direct Lending</td>
<td>2017</td>
<td>25</td>
<td>70%</td>
<td>14%</td>
<td>7.9%</td>
<td>1.07x</td>
</tr>
<tr>
<td>New Loan Origination</td>
<td>Non-Traditional</td>
<td>Litigation Finance</td>
<td>2013</td>
<td>79</td>
<td>100%</td>
<td>51%</td>
<td>10.3%</td>
<td>1.20x</td>
</tr>
<tr>
<td>New Loan Origination</td>
<td>Non-Traditional</td>
<td>Mine Finance</td>
<td>2015</td>
<td>74</td>
<td>26%</td>
<td>0%</td>
<td>7.1%</td>
<td>1.13x</td>
</tr>
<tr>
<td>New Loan Origination</td>
<td>Non-Traditional</td>
<td>Healthcare Finance</td>
<td>2016</td>
<td>51</td>
<td>10%</td>
<td>0%</td>
<td>-7.8%</td>
<td>0.95x</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>2,385</td>
<td>53%</td>
<td>38%</td>
<td>10.1%</td>
<td>1.12x</td>
</tr>
</tbody>
</table>
Why Private Credit?

Diversified Private Credit
Why Private Credit?

US Equities – Shiller PE Ratio

Source: Data courtesy of Robert Shiller
Why Private Credit?

Private Credit: An attractive alternative to public credit

Source: JP Morgan, Citi, JPMAM, as of January 31, 2017. The above is shown for illustrative and discussion purposes only. There may be other strategies that qualify as private and public credit which are not included on this slide. The inclusion of these in this presentation should not be interpreted as a recommendation.
US Middle Market Direct Lending

Robust Product but Deteriorating Trends
US Middle Market Direct Lending

Leverage

- Middle market buyout valuation multiples are very rich, even for smaller companies.
- As a result, PE sponsor equity contributions have increased over the past two years.
US Middle Market Direct Lending

**Leverage**

- Leverage is not noticeably higher over the last couple of years.

- However, quality of EBITDA represents a major concern as “add-backs” may understate true leverage.

- Anecdotally, market participants also note that many companies with poor quality earnings can now obtain leverage.
Yields

Middle market yields remain within their recent historic range while broadly syndicated loans and high yield bonds have recently seen considerable yield compression.
US Middle Market Direct Lending

Documentation / Covenants

- Covenant-lite represents 80% or more of the large institutional loan new issue markets today.
- Cov-lite remains a minority of middle market volume and has tended to be confined to larger middle market companies.
- However, market participants note cov-lite has recently made its way down into the lower middle market.
- “Cov-lame” or “Cov-wide” also a disturbing trend
The Broader Opportunity Set

Diversified Private Credit
JPMAAM evaluates a wide spectrum of private credit opportunities

Private credit investment landscape

<table>
<thead>
<tr>
<th>Asset Sales</th>
<th>New Loan Origination</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Distressed</strong></td>
<td><strong>Traditional</strong></td>
</tr>
<tr>
<td>Europe</td>
<td>Commercial Real Estate lending</td>
</tr>
<tr>
<td>Residential RE loans</td>
<td>Residential Real Estate lending</td>
</tr>
<tr>
<td>Commercial RE loans</td>
<td>Consumer specialty finance</td>
</tr>
<tr>
<td>Consumer unsecured debt</td>
<td>Corporate middle market direct lending</td>
</tr>
<tr>
<td>SME/Corporate loans</td>
<td></td>
</tr>
<tr>
<td><strong>Performing &amp; Non-Core</strong></td>
<td>Healthcare finance</td>
</tr>
<tr>
<td>Europe</td>
<td>Mine finance</td>
</tr>
<tr>
<td>Performing &quot;non-core&quot; loans</td>
<td>Litigation finance</td>
</tr>
<tr>
<td>Regulatory capital relief transactions</td>
<td>Corporate special situations</td>
</tr>
<tr>
<td>US</td>
<td>Film finance</td>
</tr>
<tr>
<td>Residential RE loans</td>
<td></td>
</tr>
<tr>
<td>Small balance CRE loans</td>
<td></td>
</tr>
<tr>
<td>Small balance CRE loans</td>
<td></td>
</tr>
<tr>
<td>Small balance CRE loans</td>
<td></td>
</tr>
</tbody>
</table>

Source: JPMAAM. For discussion and illustrative purposes only. The inclusion of the examples above should not be interpreted as a recommendation. Opinions, estimates, forecasts, and statements of financial market trends that are based on current market conditions constitute our judgment and are subject to change without notice. Investment Landscape may not be limited to the strategies described on this slide.
The Broader Opportunity Set: US New Loan Origination

- Non-agency, non-prime mortgage origination has not recovered from the financial crisis
- A large percentage of previously qualified U.S. borrowers are now underserved as banks have retreated from the market
- The opportunity now exists to originate very high quality mortgages at an attractive coupon to high FICO borrowers at low loan-to-value ("LTV") and debt-to-income ("DTI")

<table>
<thead>
<tr>
<th>US Non-Agency Residential Mortgage Origination</th>
<th>Private Label Mortgage Issuance since 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-agency, non-prime mortgage origination has not recovered from the financial crisis</td>
<td>$bn</td>
</tr>
<tr>
<td>A large percentage of previously qualified U.S. borrowers are now underserved as banks have retreated from the market</td>
<td>2011 2007 2005 2003 2001</td>
</tr>
<tr>
<td>The opportunity now exists to originate very high quality mortgages at an attractive coupon to high FICO borrowers at low loan-to-value (&quot;LTV&quot;) and debt-to-income (&quot;DTI&quot;)</td>
<td>2015 2013 2011 2009 2007</td>
</tr>
</tbody>
</table>

Sources: 1. J.P. Morgan
The Broader Opportunity Set: US New Loan Origination

**US Consumer Specialty Finance**

- U.S. household debt service as a percentage of income is at historical all-time lows, (albeit partly due to record low interest rates).

- Banks facing regulatory and cost pressure have cut back consumer credit, particularly in the near prime segment.

- Attractive opportunities exist to finance the origination of non-prime unsecured consumer credit.

**Household Debt Service Payments as a % of Disposable Income**

[Diagram showing household debt service payments as a percentage of disposable income from Jan-80 to Jan-16]
The Broader Opportunity Set: European Bank Asset Sales

Europe saw over €100bn of completed loan sales in 2016, with another €70bn of sales ongoing.

EU banks are still too large at c.3.0x EU GDP with €7.6tn of assets on their balance sheets that do not meet 8% RoE target.

Deloitte estimates that there remains over €2 trillion in unresolved non-core assets in Europe.

Market opportunity greater than €1.3tn in seasoned, performing non-core assets.

We expect the loan sale market to further expand in 2017, creating attractive opportunities to purchase both performing and non-performing loan pools.

Sources: 1. Deloitte. For discussion and illustrative purposes only. The inclusion of the examples above should not be interpreted as a recommendation. Opinions, estimates, forecasts, and statements of financial market trends that are based on current market conditions constitute our judgment and are subject to change without notice.
The Broader Opportunity Set: European Bank Asset Sales

<table>
<thead>
<tr>
<th>Example: Risk Sharing Transactions</th>
<th>Increasing Bilateral Synthetic Securitizations in Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>In a synthetic securitization, a bank transfers the credit risk of a portfolio of loans by purchasing credit protection from an investor.</td>
<td></td>
</tr>
<tr>
<td>When loans in the portfolio default, the investor or protection seller reimburses the bank for losses incurred on those loans up to the amount invested.</td>
<td></td>
</tr>
<tr>
<td>This investment amount is referred to as the 1st loss tranche while the bank typically retains the rest of the risk, referred to as the senior tranche.</td>
<td></td>
</tr>
<tr>
<td>Issuance over the past three years has increased as regulators have gained comfort and banks have sought to manage headline capital ratios</td>
<td></td>
</tr>
<tr>
<td>Underlying assets dominated by large corporate, SME and trade finance loan books</td>
<td></td>
</tr>
</tbody>
</table>

Sources: 1. EBA, Bloomberg Finance LP, Deutsche Bank Research
The Broader Opportunity Set: US Bank Asset Sales

- Commercial real estate loan delinquency rates are near the lowest levels seen during the past 20 years. However, $1.2 trillion of commercial mortgage maturities in 2016-2018 period
- Moody’s projects a sharp increase in the volume of newly delinquent CMBS loans, estimating that only 50 percent to 60 percent of outstanding CMBS loans maturing next year will find refinancing
- We expect increased opportunities to both purchase stressed CRE loans as well as refinance borrowers on attractive terms

Sources: 1. Deloitte; 2. Deutsche Bank MBS and Securitization Research, FDIC, Federal Reserve, MBA. For discussion and illustrative purposes only. The inclusion of the examples above should not be interpreted as a recommendation. Opinions, estimates, forecasts, and statements of financial market trends that are based on current market conditions constitute our judgment and are subject to change without notice.
Putting it All Together

Building a Diversified Private Credit Portfolio
What should investors look for in private credit opportunities?

### Price Dislocation & Sustainable Supply
- Favorable supply and demand imbalance
- Sustainable supply of the asset

### Barriers to Entry
- High barriers to entry which limit competition

### Top Quality Managers
- Well resourced managers with long history and great expertise

### Diversifying Exposures
- Diversified mix by geography, asset class, vintage and loan status

### Downside Protection and Self-liquidating Exit

### Downside Protection
- Focus on 1st lien secured position
- Secured by an asset where possible

### Medium-term Duration with Self-Liquidating Exit
- Target 4 – 7 year time horizon
- Investments that amortize or have a maturity date and do not rely on IPO or asset sale exit

Source: JPMAM. For discussion and illustrative purposes only. The items described above are for information only. JPMAM may look at a subset of the characteristics described above and at other characteristics than the ones described above. The characteristics described are subject to change without notice.
Constructing a diverse portfolio to take advantage of a variety of opportunities

**STRATEGY**
- Distressed and Performing Asset Sales
- Traditional and Non-Traditional Loan Origination

**COLLATERAL TYPE**
- Corporate
- Residential RE
- Commercial RE
- Consumer

**LOAN STATUS**
- Performing
- Re-performing
- Non-performing

**GEOGRAPHY**
- North America
- Europe

Information as of March 2017. Source: JPMAM. Shown for illustrative and discussion purposes only. The above are examples of potential opportunities and are not meant to be exhaustive. The inclusion of these examples does not imply that JPMAM HFS will exploit all these opportunities and should not be interpreted as a recommendation.
Risks to consider when making investments

- **Limited liquidity**
  - invested capital is generally accessible for redemption only on a quarterly or annual basis

- **Volatility**
  - investment strategies used by the investment adviser and/or portfolio managers, utilizing futures, options and short sales, can be highly volatile

- **Loss of capital**
  - investors can lose up to the full amount of their invested capital

- **Leverage**
  - hedge funds often use leverage, sometimes at significant levels, to enhance potential returns

- **Dependence on manager**
  - the Fund’s success is dependent on the investment manager to develop and successfully implement investment strategies that meet investment objectives

- **Limited transparency**
  - with little or no public market coverage, investors must rely on the investment manager for periodic information

- **Conflicts of interest**
  - the investment adviser and/or portfolio managers could be subject to various conflicts of interest, which could influence how those portfolio managers invest the Fund’s assets
Important Notes

This material is confidential, contains proprietary information of J.P. Morgan Alternative Asset Management, and is for informational purposes only and may not be reproduced, shown or distributed. It is intended solely for the recipient and may not be shared with any third parties without written consent from J.P. Morgan Alternative Asset Management, Inc.

This document is a general communication being provided for informational purposes only. It is educational in nature and not designed to be recommendation for any specific investment product, strategy, plan feature or other purposes. By receiving this communication you agree with the intended purpose described above. Any examples used in this material are generic, hypothetical and for illustration purposes only. None of J.P. Morgan Asset Management, its affiliates or representatives is suggesting that the recipient or any other person take a specific course of action or any action at all. Communications such as this are not impartial and are provided in connection with the advertising and marketing of products and services. Prior to making any investment or financial decisions, an investor should seek individualized advice from a personal financial, legal, tax and other professional advisors that take into account all of the particular facts and circumstances of an investor's own situation.

Any examples used in this material are generic, hypothetical and for illustration purposes only. None of J.P. Morgan Asset Management, its affiliates or representatives is suggesting that the recipient or any other person take a specific course of action or any action at all. Communications such as this are not impartial and are provided in connection with the advertising and marketing of products and services. Prior to making any investment or financial decisions, an investor should seek individualized advice from a personal financial, legal, tax and other professional advisors that take into account all of the particular facts and circumstances of an investor's own situation.

Target Return: The annual target return and other fund objectives have been established by JPMAMHFS based on its assumptions and calculations using data available to it and in light of current market conditions and available investment opportunities and are subject to the risks set forth herein and set forth more fully in the applicable offering document or investment management agreement. These portfolio objectives are for illustrative purposes only and are subject to significant limitations. An investor should not expect to achieve actual returns similar to the annual target return shown herein. Because of the inherent limitations of the target returns, potential investors should not rely on them when making a decision on whether to invest in the portfolio. These objectives cannot account for the impact of economic, market, and other factors that could impact the future returns of the portfolio. JPMAMHFS’ ability to achieve the target return and fund objectives is subject to risk factors over which JPMAMHFS may have no or limited control. There can be no assurance that the portfolio will achieve its investment objectives, the annual target return, or any other portfolio objectives. The actual returns achieved may be more or less than the annual target return shown herein.

Past performance is not indicative of future results. These materials are strictly confidential and may not be reproduced or redistributed in whole or in part nor may their contents be disclosed to any other person. The securities described herein are not deposits or obligations of, or guaranteed or endorsed in any way by J.P. Morgan, or any other bank and are not insured by the FDIC, the Federal Reserve Board, or any other governmental agency. These securities will not be listed on or traded under the rules of any exchange and it may therefore be difficult to sell or obtain reliable information about its value or the extent of the risks to which it is exposed. The value of the investment may fall as well as rise and investors may get back less than they invested. Where securities are issued in a currency other than the investors’ currency of reference, changes in exchange rates may have an adverse effect on the value of the investment. Further information is available on request. Indices presented, if any, are representative of various broad base asset classes. They are unmanaged and shown for illustrative purposes only.

This document is intended solely to report on various investment views held by J.P. Morgan Asset Management. Opinions, estimates, forecasts, and statements of financial market trends that are based on current market conditions constitute our judgment and are subject to change without notice. We believe the information provided here is reliable but we do not warrant its accuracy or completeness. The views and strategies described may not be suitable for all investors. References to specific securities, asset classes and financial markets are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations. Indices do not include fees or operating expenses and are not available for actual investment. The information contained herein employs proprietary projections of expected returns as well as estimates of their future volatility. During the ordinary course of its business, J.P. Morgan may seek to perform investment banking services and other services for, and to receive customary compensation from companies in which any investment is made, including acting as underwriter for public offerings for these companies.

© 2017 J.P. Morgan Chase & Co.
Important Notes (Continued)

NOT FOR RETAIL DISTRIBUTION: This communication has been prepared exclusively for institutional, wholesale, professional clients and qualified investors only, as defined by local laws and regulations.

This document is a general communication being provided for informational purposes only. It is educational in nature and not designed to be recommendation for any specific investment product, strategy, plan feature or other purposes. By receiving this communication you agree with the intended purpose described above. Any examples used in this material are generic, hypothetical and for illustration purposes only. None of J.P. Morgan Asset Management, its affiliates or representatives is suggesting that the recipient or any other person take a specific course of action or any action at all. Communications such as this are not impartial and are provided in connection with the advertising and marketing of products and services. Prior to making any investment or financial decisions, an investor should seek individualized advice from a personal financial, legal, tax and other professional advisors that take into account all of the particular facts and circumstances of an investor’s own situation.

This is a promotional document and is intended to report solely on investment strategies and opportunities identified by J.P. Morgan Asset Management. This document is confidential and intended only for the person or entity to which it has been provided. Reliance upon information in this material is at the sole discretion of the reader. The material was prepared without regard to specific objectives, financial situation or needs of any particular receiver. Any research in this document has been obtained and may have been acted upon by J.P. Morgan Asset Management for its own purpose. The results of such research are being made available as additional information and do not necessarily reflect the views of J.P. Morgan Asset Management. This presentation is qualified in its entirety by the offering memorandum, which should be carefully read prior to any investment in a fund. The purchase of shares of a fund is suitable only for sophisticated investors for whom an investment in such fund does not constitute a complete investment program and who fully understand and are willing to assume the risks involved in such fund’s investment program. An investment in the funds involves a number of risks. For a description of the risk factors associated with an investment in a fund, please refer to the section discussing risk factors in the offering memorandum (available upon request). Shares of the funds are not deposits, obligations of, or endorsed or guaranteed by, JPMorgan Chase Bank, NA or any other bank and are not insured by the FDIC, the Federal Reserve Board or any other government agency.

Any forecasts, figures, opinions, statements of financial market trends or investment techniques and strategies expressed are those of J.P. Morgan Asset Management, unless otherwise stated, as of the date of issuance. They are considered to be reliable at the time of production, but no warranty as to the accuracy and reliability or completeness in respect of any error or omission is accepted, and may be subject to change without reference or notification to you.

Investments in Alternative Investment Funds (AIFs) involves a high degree of risks, including the possible loss of the original amount invested. The value of investments and the income from them may fluctuate in accordance with market conditions and taxation agreements. Changes in exchange rates may have an adverse effect on the value, price or income of the products or underlying investment. Past performance and yield are not a reliable indicator of current and future results. There is no guarantee that any forecast will come to pass.

Any investment decision should be based solely on the basis of any applicable local offering documents such as the prospectus, annual report, semi-annual report, private placement or offering memorandum. For further information, any questions and for copies of the offering material you can contact your usual J.P. Morgan Asset Management representative.

Any reproduction, retransmission, dissemination or other unauthorized use of this document or the information contained herein by any person or entity without the express prior written consent of J.P. Morgan Asset Management is strictly prohibited.

In the United Kingdom, the Funds are categorized as a Non-Mainstream Pooled Investment as defined by the Financial Conduct Authority (FCA). The Funds are not available to the general public and may only be promoted in the UK to limited categories of persons pursuant to the exemption to Section 238 of the Financial Services and Markets Act 2000 (FSMA 2000). This information is only directed to persons believed by JPMorgan Asset Management (UK) Limited to be an eligible counterparty or a professional client as defined by the FCA. Persons who do not have professional experience in matters relating to investments should not rely on it and any other person should not act on such information.

Institutional clients in Europe are directed to the following local contact telephone numbers for product information:

- JPMorgan Funds (Europe) Limited, 60 Gresham Street, London, EC2V 7JE, +44 (0)20 3862 0030 (UK), 100 Plainview Drive, Suite 900, Old Bethpage, NY 11804, +1-877-852-8638 (US)
- JPMorgan Asset Management (Europe) S.A., 5 rue Albert 1er, Luxembourg SC5399, +352 22 88 88 88
- JPMorgan Asset Management (Europe) S.C.A., 5 rue Albert 1er, Luxembourg SC5399, +352 22 88 88 88
- JPMorgan Asset Management (Europe) S.C.A., 100 Plainview Drive, Suite 900, Old Bethpage, NY 11804, +1-877-852-8638
- JPMorgan Asset Management (Europe) S.C.A., 60 Gresham Street, London, EC2V 7JE, +44 (0)20 3862 0030

Investors should note that there is no right to cancel an agreement to purchase shares under the Rules of the Financial Conduct Authority and that the normal protections provided by the UK regulatory system do not apply and compensation under the Financial Services Compensation Scheme is not available.

J.P. Morgan Asset Management and/or any of its affiliates and employees may hold positions or act as a market maker in the financial instruments of any issuer discussed herein or act as the underwriter, placement agent or lender to such issuer. The investments and strategies discussed herein may not be suitable for all investors and may not be authorized or its offering may be restricted in your jurisdiction. It is the responsibility of every reader to satisfy himself as to the full observance of the laws and regulations of the relevant jurisdictions. Prior to any application investors are advised to take all necessary legal, regulatory and tax advice on the consequences of an investment in the products.

Securities products, if presented in the U.S., are offered by J.P. Morgan Institutional Investments, Inc., member FINRA/SIPC.

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 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.A. (in Hong Kong by JF Asset Management 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. 1976108K), or JPMorgan Asset Management Real Assets (Singapore) Pte Ltd (Co. Reg. No. 201120355E), 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 I 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 6514383208) (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 JPMorgan Distribution Services Inc. and J.P. Morgan Institutional Investments, Inc., both members of FINRA/SIPC; and J.P. Morgan Investment Management Inc.

Copyright 2017 JPMorgan Chase & Co. All rights reserved.