Daily consumer spending tracker

- On September 21, our tracker of Chase consumer card spending fell from -5.1% to -5.2%.
- The tracker fell -0.1%-pt over the prior week, and it is 35.6%-pt above its low of -40.8% on March 30.

The data in this report is based on transactions sourced from select Chase consumer credit and debit cards and is not representative of Chase’s overall credit and debit cardholder population. All cards included in the data were used for at least one transaction in each of 18 consecutive months, resulting in a panel of more than 30 million US cardholders. The data may differ from total US consumer spending for many reasons, including differences between cash and card spending patterns, geographic and demographic differences between the panel of Chase customers and the overall US population, and other factors. In this report, Millennial and Gen Z cardholders are defined as those with birth years in 1981 or later, Gen X as birth years from 1965 to 1980, and Baby Boomers as birth years in 1964 or earlier. Card-not-present transactions are those where the card information was not transmitted from the card itself at the time of the transaction and is thus a proxy for online, telephone or mail-order spending. States are identified using the address of the cardholder.

This report uses rigorous security protocols for selected data sourced from Chase credit and debit card transactions to ensure all information is kept confidential and secure. All selected data is highly aggregated and all unique identifiable information—including names, account numbers, addresses, dates of birth, and Social Security Numbers—is removed from the data before we receive it. We cannot distribute the underlying data behind the report.

We make this report available to the public every business day, Tuesday through Friday, at www.jpmorgan.com/global/research. Published: September 25, 2020.
Chase consumer credit and debit card spending details

Chase consumer card spending by category

Chase consumer card spending by generation

Chase consumer card spending by card presence

Source: J. P. Morgan. % change over-year ago in 7-day average.

Source: J. P. Morgan. % change over-year ago in 7-day average.

Source: J. P. Morgan. % of 7-day average of nonrecurring categories.

Source: J. P. Morgan. % of 7-day average of nonrecurring categories.
Chase consumer credit and debit card spending by state

Chase consumer card spending for selected states

Chase card spending by unemployment claims

Chase consumer card spending by state and generation

Chase consumer card spending by state and card presence

Source: J.P. Morgan. %oya of 7-day average of nonrecurring categories.


Source: J.P. Morgan. %oya of 7-day average of nonrecurring categories.
Chase consumer credit and debit card spending, additional states

Source: J. P. Morgan. %oya of 7-day average of nonrecurring categories.

J.P.Morgan
Chase consumer card spending, correlations with COVID-19 cases

Card spending vs. cumulative COVID-19 cases

Change in card spending vs. change in new cases

Growth in new cases vs. lagged restaurant spending

Rolling correlation with growth in new COVID-19 cases

Source: Johns Hopkins, J.P. Morgan

Source: J.P. Morgan. Correlation across states with growth in new cases over last 3 weeks.
Share of total consumer credit and debit card spending with card present

Share of total spend with card present

![Graph showing share of total spend with card present over time.](image)

Source: J.P. Morgan. % of total spend in nonrecurring categories with card present, 7-day average.

Share of total spend with card present by generation

![Graph showing share of total spend with card present by generation.](image)

Source: J.P. Morgan. % of total spend in nonrecurring categories with card present, 7-day average.

Share of total spend with card present by state

![Graph showing share of total spend with card present by state.](image)

Source: J.P. Morgan. % of total spend in nonrecurring categories with card present, 7-day average.

Share of total spend with card present by state and generation

![Graph showing share of total spend with card present by state and generation.](image)

Source: J.P. Morgan. % of total spend in nonrecurring categories with card present, 7-day average.
Share of total consumer credit and debit card spending with card present

Source: J.P. Morgan. % of total spend with card present, 7-day average.
Chase consumer card spending tracker: Alternate versions

Chase card spending tracker: Alternate transformations

- %oya from same day of week and week of year (-5.5%)
- 7-day avg., %oya from same day of week and week of year (-4.4%)
- 7-day avg., %oya from same day of year (-4.9%)

<table>
<thead>
<tr>
<th>Month</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
</tr>
</thead>
<tbody>
<tr>
<td>%oya</td>
<td>-5.5%</td>
<td>-4.4%</td>
<td>-4.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: J.P. Morgan. Total spending in nonrecurring categories. Orange dots are Sundays.

Chase spending tracker: Comparison to official data

- Chase consumer card spending tracker, daily %oya (-5.5%)
- Chase consumer card spending tracker, monthly %oya (-10.1%)
- PCE ex MV, Housing & Utilities, Financial svcs, Nonprofits, %oya (-6.2%)

<table>
<thead>
<tr>
<th>Month</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
</tr>
</thead>
<tbody>
<tr>
<td>%oya</td>
<td>-5.5%</td>
<td>-10.1%</td>
<td>-6.2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: BEA, J.P. Morgan.

Chase consumer card spending: Alternate aggregates

- Nonrecurring categories (-5.2%)
- All categories (-3.9%)
- All categories, %oya from same day of week and week of year (-2.6%)

<table>
<thead>
<tr>
<th>Month</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
</tr>
</thead>
<tbody>
<tr>
<td>%oya</td>
<td>-5.2%</td>
<td>-3.9%</td>
<td>-2.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: J.P. Morgan. %oya in 7-day average.

Job tracker based on alternative data: Total employment

- BLS nonfarm payroll employment (140914)
- Tracker based on alternative data (142998)

<table>
<thead>
<tr>
<th>Month</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Various sources, J. P. Morgan. Units are thousands of jobs.
## Job trackers based on alternative data by state

<table>
<thead>
<tr>
<th></th>
<th>02/20</th>
<th>03/22</th>
<th>04/22</th>
<th>05/23</th>
<th>06/23</th>
<th>07/24</th>
<th>08/24</th>
<th>09/24</th>
<th>1mth Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New England</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CT</td>
<td>-0.0</td>
<td>-11.0</td>
<td>-11.5</td>
<td>-16.6</td>
<td>-10.8</td>
<td>-10.0</td>
<td>-9.2</td>
<td>-8.4</td>
<td></td>
</tr>
<tr>
<td>MA</td>
<td>-0.0</td>
<td>-12.0</td>
<td>-12.9</td>
<td>-16.4</td>
<td>-11.7</td>
<td>-10.9</td>
<td>-10.8</td>
<td>-10.3</td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>0.1</td>
<td>-11.2</td>
<td>-13.6</td>
<td>-9.6</td>
<td>-8.8</td>
<td>-7.9</td>
<td>-7.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NH</td>
<td>0.0</td>
<td>-10.6</td>
<td>-16.7</td>
<td>-13.6</td>
<td>-10.7</td>
<td>-9.9</td>
<td>-8.9</td>
<td>-8.4</td>
<td></td>
</tr>
<tr>
<td>RI</td>
<td>0.3</td>
<td>-12.0</td>
<td>-18.3</td>
<td>-10.7</td>
<td>-10.0</td>
<td>-8.3</td>
<td>-8.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VT</td>
<td>0.4</td>
<td>-13.3</td>
<td>-19.9</td>
<td>-14.1</td>
<td>-11.2</td>
<td>-10.5</td>
<td>-9.7</td>
<td>-9.2</td>
<td></td>
</tr>
<tr>
<td><strong>Midwest</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MN</td>
<td>0.6</td>
<td>-9.3</td>
<td>-13.9</td>
<td>-12.0</td>
<td>-9.2</td>
<td>-8.6</td>
<td>-7.6</td>
<td>-7.6</td>
<td></td>
</tr>
<tr>
<td>NY</td>
<td>-0.2</td>
<td>-13.4</td>
<td>-20.3</td>
<td>-18.1</td>
<td>-15.8</td>
<td>-13.0</td>
<td>-11.5</td>
<td>-11.2</td>
<td></td>
</tr>
<tr>
<td>OH</td>
<td>-0.0</td>
<td>-13.5</td>
<td>-19.3</td>
<td>-16.8</td>
<td>-12.7</td>
<td>-11.4</td>
<td>-10.1</td>
<td>-9.6</td>
<td></td>
</tr>
<tr>
<td>PA</td>
<td>0.0</td>
<td>-12.0</td>
<td>-17.5</td>
<td>-14.4</td>
<td>-10.2</td>
<td>-9.8</td>
<td>-9.7</td>
<td>-9.7</td>
<td></td>
</tr>
<tr>
<td><strong>Great Lakes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WI</td>
<td>0.1</td>
<td>-11.1</td>
<td>-15.6</td>
<td>-12.5</td>
<td>-8.7</td>
<td>-8.4</td>
<td>-7.4</td>
<td>-7.0</td>
<td></td>
</tr>
<tr>
<td>MI</td>
<td>-0.2</td>
<td>-14.3</td>
<td>-22.7</td>
<td>-17.8</td>
<td>-11.9</td>
<td>-11.4</td>
<td>-10.3</td>
<td>-9.3</td>
<td></td>
</tr>
<tr>
<td>IL</td>
<td>0.2</td>
<td>-9.4</td>
<td>-12.8</td>
<td>-11.5</td>
<td>-8.4</td>
<td>-7.7</td>
<td>-6.9</td>
<td>-6.9</td>
<td></td>
</tr>
<tr>
<td>IN</td>
<td>0.4</td>
<td>-8.9</td>
<td>-12.3</td>
<td>-9.1</td>
<td>-5.5</td>
<td>-5.6</td>
<td>-4.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Plains</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS</td>
<td>0.6</td>
<td>-6.1</td>
<td>-9.5</td>
<td>-7.3</td>
<td>-5.7</td>
<td>-5.9</td>
<td>-4.9</td>
<td>-4.8</td>
<td></td>
</tr>
<tr>
<td>MO</td>
<td>0.1</td>
<td>-8.7</td>
<td>-12.5</td>
<td>-11.4</td>
<td>-8.6</td>
<td>-8.1</td>
<td>-7.1</td>
<td>-6.8</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>0.5</td>
<td>-7.6</td>
<td>-11.1</td>
<td>-8.6</td>
<td>-6.2</td>
<td>-6.3</td>
<td>-5.1</td>
<td>-5.1</td>
<td></td>
</tr>
<tr>
<td><strong>Rocky Mountain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>0.1</td>
<td>-9.3</td>
<td>-13.0</td>
<td>-8.5</td>
<td>-7.1</td>
<td>-6.7</td>
<td>-6.2</td>
<td>-5.7</td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td>0.1</td>
<td>-9.6</td>
<td>-12.6</td>
<td>-9.3</td>
<td>-7.7</td>
<td>-6.8</td>
<td>-6.6</td>
<td>-6.6</td>
<td></td>
</tr>
<tr>
<td>UT</td>
<td>0.1</td>
<td>-8.2</td>
<td>-10.0</td>
<td>-9.2</td>
<td>-8.4</td>
<td>-8.6</td>
<td>-8.0</td>
<td>-8.0</td>
<td></td>
</tr>
<tr>
<td>WY</td>
<td>0.0</td>
<td>-9.6</td>
<td>-13.0</td>
<td>-8.5</td>
<td>-7.1</td>
<td>-6.7</td>
<td>-6.2</td>
<td>-5.7</td>
<td></td>
</tr>
<tr>
<td><strong>Far West</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>0.1</td>
<td>-11.1</td>
<td>-15.5</td>
<td>-13.3</td>
<td>-10.3</td>
<td>-10.4</td>
<td>-9.8</td>
<td>-9.2</td>
<td></td>
</tr>
<tr>
<td>HI</td>
<td>0.2</td>
<td>-12.1</td>
<td>-19.8</td>
<td>-16.7</td>
<td>-13.9</td>
<td>-14.7</td>
<td>-15.6</td>
<td>-16.3</td>
<td></td>
</tr>
<tr>
<td>NV</td>
<td>0.7</td>
<td>-15.5</td>
<td>-19.6</td>
<td>-15.6</td>
<td>-11.2</td>
<td>-11.1</td>
<td>-9.8</td>
<td>-9.4</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td>-0.1</td>
<td>-9.5</td>
<td>-13.5</td>
<td>-11.5</td>
<td>-8.7</td>
<td>-8.1</td>
<td>-7.7</td>
<td>-7.9</td>
<td></td>
</tr>
<tr>
<td>WA</td>
<td>0.5</td>
<td>-10.3</td>
<td>-14.7</td>
<td>-12.9</td>
<td>-9.7</td>
<td>-9.0</td>
<td>-8.3</td>
<td>-8.7</td>
<td></td>
</tr>
</tbody>
</table>

*Figures are percent decline from baseline employment.*
Swing state job trackers

Trump polling average vs. job tracker

Change in Trump polling average vs. job tracker

Job tracker based on alternative data: Florida

Job tracker based on alternative data: Pennsylvania

Source: FiveThirtyEight, Various Sources, J.P. Morgan

Source: BLS, FiveThirtyEight, Various sources, J.P. Morgan
Swing state job trackers

Job trackers based on alternative data: Swing states

- United States (93.0%)
- Pennsylvania (91.3%)
- Florida (93.6%)
- Wisconsin (92.5%)
- Arizona (94.3%)
- Michigan (90.7%)

Source: Various sources, J.P. Morgan. % of baseline employment.

Trump polling average vs. job tracker: Swing states

- Florida
- Pennsylvania
- Michigan

Source: FiveThirtyEight, Various Sources, J.P. Morgan. Dots are most recent observations.

Job tracker and Trump polling: Swing state weighted average

- Job tracker, % of baseline employment (92.6%, lbs)
- Trump polling average (44.7%, lbs)

Source: Various sources, J.P. Morgan. Electoral vote-weighted average of AZ, FL, MI, PA, and WI.
Disclosures

Chase card spending data: The data in this report is based on transactions sourced from select Chase consumer credit and debit cards and is not representative of Chase’s overall credit and debit cardholder population. All cards included in the data were used for at least one transaction in each of 18 consecutive months, resulting in a panel of more than 30 million US cardholders. The data may differ from total US consumer spending for many reasons, including differences between cash and card spending patterns, geographic and demographic differences between the panel of Chase customers and the overall US population, and other factors. In this report, Millennial and Gen Z cardholders are defined as those with birth years in 1981 or later, Gen X as birth years from 1965 to 1980, and Baby Boomers as birth years in 1946 or earlier. Card-not-present transactions are those where the card information was not transmitted from the card itself at the time of the transaction and is thus a proxy for online, telephone or mail-order spending. States are identified using the address of the cardholder.

This report uses rigorous security protocols for selected data sourced from Chase credit and debit card transactions to ensure all information is kept confidential and secure. All selected data is highly aggregated and all unique identifiable information—including names, account numbers, addresses, dates of birth, and Social Security Numbers—is removed from the data before the report’s author receives it.

Source: Unless otherwise noted, Internal Chase Data or Select Chase Credit and Debit Card Transaction Data.

Analysts’ Compensation: The research analysts responsible for the preparation of this report receive compensation based upon various factors, including the quality and accuracy of research, client feedback, competitive factors, and overall firm revenues. Other Disclosures J.P. Morgan is a marketing name for investment banking businesses of JPMorgan Chase & Co. and its subsidiaries and affiliates worldwide.

Any data discrepancies in this report could be the result of different calculations and/or adjustments. Any long form nomenclature for references to China; Hong Kong; Taiwan; and Macau within this research report are Mainland China; Hong Kong SAR, China; Taiwan, China; Macau SAR, China. Changes to Interbank Offered Rates (IBORs) and other benchmark rates: Certain interest rate benchmarks are, or may in the future become, subject to ongoing international, national and other regulatory guidance, reform and proposals for reform. For more information, please consult: https://www.jpmorgan.com/global/disclosures/interbank_offered_rates

Private Bank Clients: Where you are receiving research as a client of the private banking businesses offered by JPMorgan Chase & Co. and its subsidiaries (“J.P. Morgan Private Bank”), research is provided to you by J.P. Morgan Private Bank and not by any other division of J.P. Morgan, including but not limited to the J.P. Morgan corporate and investment bank and its research division.

Legal entity responsible for the production of research: The legal entity identified below the name of the Reg AC research analyst who authored this report is the legal entity responsible for the production of this research. Where multiple Reg AC research analysts authored this report with different legal entities identified below their names, these legal entities are jointly responsible for the production of this research.

Legal Entities Disclosures and Country-/Region-Specific Disclosures: Argentina: JPMorgan Chase Bank N.A Sucursal Buenos Aires is regulated by Banco Central de la Republica Argentina (“BCRA”- Central Bank of Argentina) and Comision Nacional de Valores (“CNV”- Argentinian Securities Commission)* - ALYC y AN Integral N 51). Australia: J.P. Morgan Securities Australia Limited (“JPMASL”) (ABN 61 003 245 234/AFS Licence No: 238066) is regulated by the Australian Securities and Investments Commission and is a Market, Clearing and Settlement Participant of ASX Limited and Chi-X. This material is issued and distributed in Australia by or on behalf of JPMASL only to “wholesale clients” (as defined in section 761G of the Corporations Act 2001). A list of all financial products covered can be found by visiting https://www.jpm.com/research/disclosures. J.P. Morgan seeks to cover companies of relevance to the domestic and international investor base across all Global Industry Classification Standard (GICS) sectors, as well as across a range of market capitalisation sizes. If applicable, in the course of conducting public side due diligence on the subject company(ies), the Research Analyst team may at times perform such diligence through corporate engagements such as site visits, discussions with company representatives, management presentations, etc. Research issued by JPMASL has been prepared in accordance with J.P. Morgan Australia’s Research Independence Policy which can be found at the following link: J.P. Morgan Australia - Research Independence Policy. Brazil: Banco J.P. Morgan S.A. is regulated by the Comissao de Valores Mobiliarios (CVM) and by the Central Bank of Brazil. Ombudsman J.P. Morgan: 0800-7700847 / ouvidoria.jp.morgan@jpmorgan.com. Canada: J.P. Morgan Securities Canada Inc is a registered investment dealer, regulated by the Investment Industry Regulatory Organization of Canada and the Ontario Securities Commission and is the participating member on Canadian exchanges. This material is distributed in Canada by or on behalf of J.P. Morgan Securities Canada Inc. China: J.P. Morgan Securities (China) Company Limited has been approved by CSRC to conduct the securities investment consultancy business. Dubai: JPMorgan Chase Bank N.A., Dubai Branch is regulated by the Dubai Financial Services Authority (DFSA) and its registered address is Dubai International Financial Centre - The Gate, West Wing, Level 3 and 9 PO Box 506551, Dubai, UAE. This material has been distributed to persons regarded as professional clients or market counterparties as defined under the DFSA rules. Germany: This material is distributed in Germany by J.P. Morgan Securities plc, Frankfurt Branch, which is regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht and also by J.P. Morgan AG (“JPM AG”), which is a member of the Frankfurt Stock Exchange, is authorised by the European Central Bank (“ECB”) and is regulated by the Federal Financial Supervisory Authority (BaFin). JPM AG is a company incorporated in the Federal Republic of Germany with a registered office at Tautnusstr 1, 60310 Frankfurt am Main, the Federal Republic of Germany. Hong Kong: J.P. Morgan Securities (Asia Pacific) Limited (CE number AAJ312) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission in Hong Kong, and J.P. Morgan Broking (Hong Kong) Limited (CE number AAB027) is regulated by the Securities and Futures Commission in Hong Kong. J.P. Morgan Chase Bank, N.A., Hong Kong is organized under the laws of the United States with limited liability. India: J.P. Morgan India Private Limited (Corporate Identity Number - U67120MH1992FTC068724), having its registered office at J.P. Morgan Tower, Off. C.S.T. Road, Kalina, Santacruz - East, Mumbai - 400098, is registered with the Securities and Exchange Board of India (SEBI) as a ‘Research Analyst’ having registration number INH000001873. J.P. Morgan India Private Limited is also registered with SEBI as a member of the National Stock Exchange of India Limited and the Bombay Stock Exchange Limited (SEBI Registration Number - INZ000239730) and as a Merchant Banker (SEBI Registration Number - MB/INM000002970). Website: www.jpm.com. For non-local research material, this material is not distributed in India by J.P. Morgan India Private Limited. Indonesia: PT J.P. Morgan Sekuritas Indonesia is a member of the Indonesia Stock Exchange and is regulated by the OJK a.k.a. BAPEPAM LK. Korea: This material is issued and distributed in Korea by or through J.P. Morgan Securities (Far East) Limited, Seoul Branch, which is a member of the Korea Exchange (KRX) and is regulated by the Financial Services Commission (FSC) and the Financial Investment Service (FSS).

12
Disclosures

General: Additional information is available upon request. The information in this material has been obtained from sources believed to be reliable. While all reasonable care has been taken to ensure that the facts stated in this material are accurate and that the forecasts, opinions and expectations contained herein are fair and reasonable, JPMorgan Chase & Co. or its affiliates and/or subsidiaries (collectively J.P. Morgan) make no representations or warranties whatsoever to the completeness or accuracy of the material provided, except with respect to any disclosures relative to J.P. Morgan and the Research Analyst's involvement with the issuer that is the subject of the material. Accordingly, no reliance should be placed on the accuracy, fairness or completeness of the information contained in this material.

Any data discrepancies in this material could be the result of different calculations and/or adjustments. J.P. Morgan accepts no liability whatsoever for any loss arising from any use of this material or its contents, and neither J.P. Morgan nor any of its respective directors, officers or employees, shall be in any way responsible for the contents hereof, apart from the liabilities and responsibilities that may be imposed on them by the relevant regulatory authority in the jurisdiction in question, or the regulatory regime thereunder. Opinions, forecasts or projections contained in this material represent J.P. Morgan's current opinions or judgment as of the date of the material only and are therefore subject to change without notice. Periodic updates may be provided on companies/industries based on company-specific developments or announcements, market conditions or any other publicly available information. There can be no assurance that future results or events will be consistent with any such opinions, forecasts or projections, which represent only one possible outcome. Furthermore, such opinions, forecasts or projections are subject to certain risks, uncertainties and assumptions that have not been verified, and future actual results or events could differ materially. The value of, or income from, any investments referred to in this material may fluctuate and/or be affected by changes in exchange rates. All pricing is indicative as of the close of market for the securities discussed, unless otherwise stated. Past performance is not indicative of future results. Accordingly, investors may receive back less than originally invested. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients. The recipients of this material must make their own independent decisions regarding any securities or financial instruments mentioned herein and should seek advice from such independent financial, legal, tax or other adviser as they deem necessary. J.P. Morgan may trade as a principal on the basis of the Research Analysts' views and research, and it may also engage in transactions for its own account or for its clients' accounts in a manner inconsistent with the views taken in this material, and J.P. Morgan is under no obligation to ensure that such other communication is brought to the attention of any recipient of this material. Others within J.P. Morgan, including Strategists, Sales staff and other Research Analysts, may take views that are inconsistent with those taken in this material. Employees of J.P. Morgan not involved in the preparation of this material may have investments in the securities (or derivatives of such securities) mentioned in this material and may trade them in ways different from those discussed in this material.

"Other Disclosures" last revised September 12, 2020.

Copyright 2020 JPMorgan Chase & Co. All rights reserved. This report or any portion hereof may not be reprinted, sold or redistributed without the written consent of J.P. Morgan.