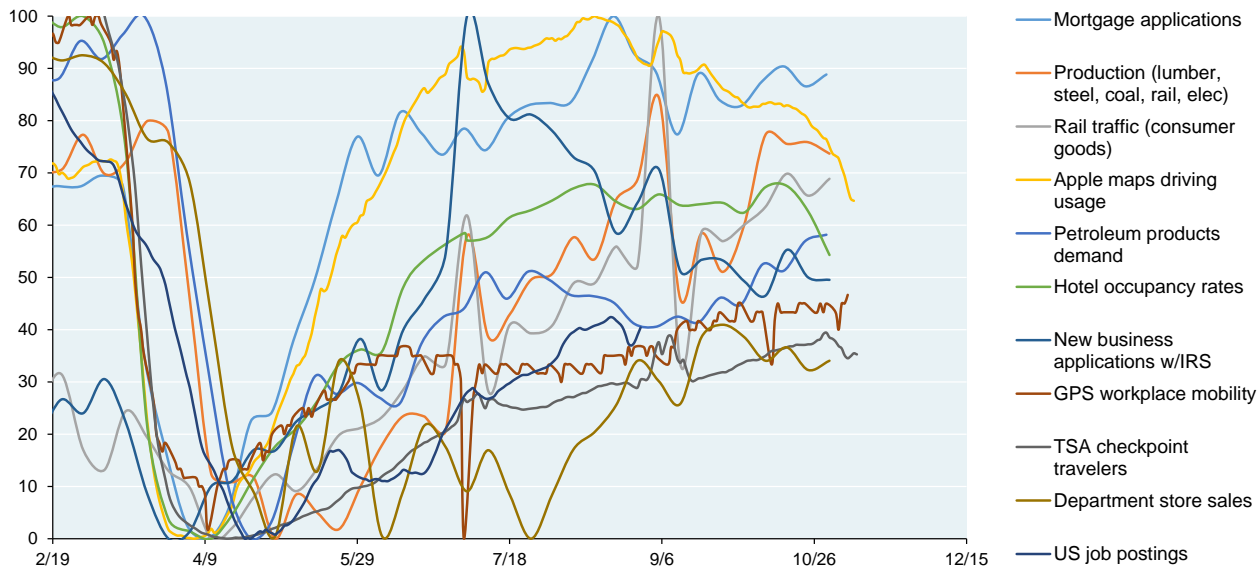




[1] The US reopens: reopening, mobility, production and spending

High frequency US data tracker

Index, with 0 = lowest observed value and 100 = highest observed value, Jan 1 2020 to present



Source: WWPA, EIA, AISI, EEI, AAR, Redbook, Census Bureau, TSA.gov, Apple, Smith Travel, MBA, Google, ThinkNum, JPMAM. November 10, 2020.

Contents

- High frequency recovery summary, national level (above)
- Credit and debit card spending: nationwide spending; social distancing spending by infection severity; close-up look at retail and oil spending; growth in e-commerce
- Mobility data: changes in movement by reopening status for transit, retail and stay-at-home
- Additional national data: US/NYC travel tracker, hotel occupancy rates, mortgage applications, manufacturing activity, shipping, demand for crude oil and floating storage, rail traffic for consumer goods, Weekly Economic Index

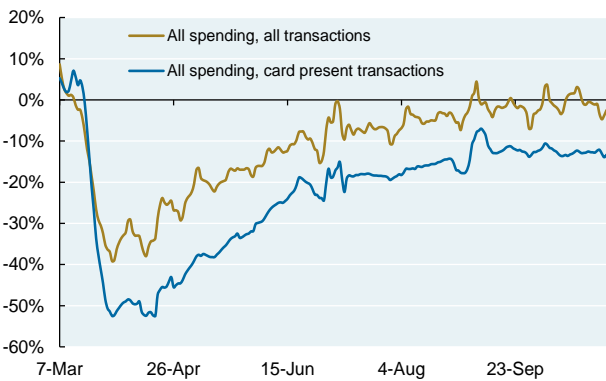


Credit and debit card spending trends

Here’s our new analysis on the US consumer based on select internal Chase transaction data¹. On a national level, consumer spending in our credit and debit card data set² is down ~5% vs 2019 (first chart). However, this aggregation includes a lot of e-commerce. When narrowing the focus to consumer transactions that took place with “cards present”, the y/y decline in spending is larger.

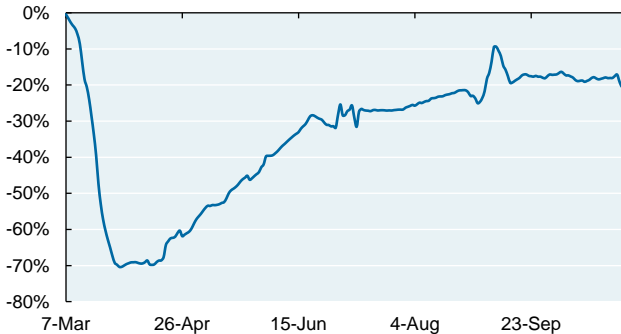
We’re also interested specifically in **discretionary “social distancing spending” (SDS)**. For our purposes, we define SDS as “card present” transactions for retail, lodging, restaurants, rental cars, ride hailing/taxis/limos, amusement parks, tourist attractions, theaters, night clubs and other recreational services. In other words, **discretionary spending that requires people to go someplace and not buy from home**. In our dataset, card-present SDS represented around one third of all consumer spending in 2019. The SDS decline this year is even sharper than the decline in total spending, since the latter includes food, healthcare, gasoline, recurring payments and other non-discretionary items.

National credit and debit card spending trends
Spending change 2020 vs 2019, 7 day smoothing



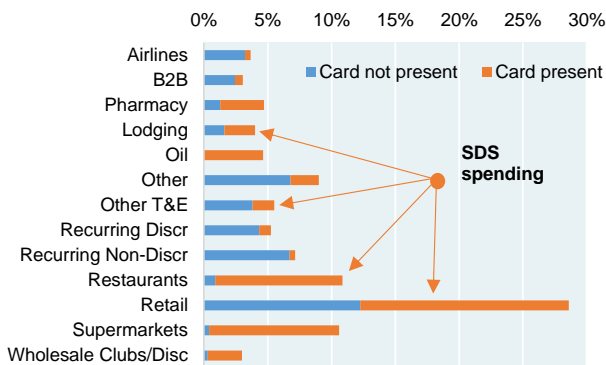
Source: Internal Chase data, JPMAM. Nov 02, 2020.

National credit and debit card spending trends
Social distancing spending, card present transactions
Spending change 2020 vs 2019, 7 day smoothing



Source: Internal Chase data, JPMAM. Social distancing: retail, lodging, restaurants, amusement parks, theaters and other recreational services. Nov 02, 2020.

Dataset spending categories by transaction type, 2019



Source: Internal Chase data, JPMAM, 2019.

¹ 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.

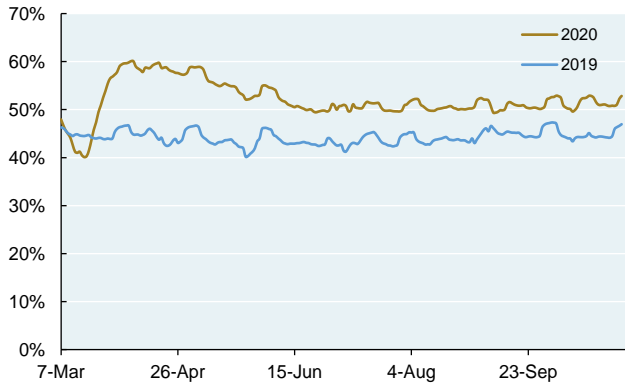
² Our data may not be representative of national spending trends. While it is based on a large number of cardholders, we have not normalized the data for age, gender, income or other factor differences vs the national average.



E-commerce monitor

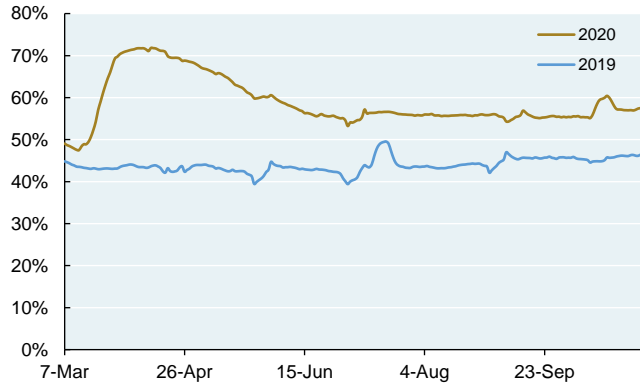
Lingering consumer preferences for e-commerce after the pandemic is over may be one of its more lasting legacies, with implications for a wide range of sectors and industries.

All spending e-commerce shares
Share of total spending via e-commerce



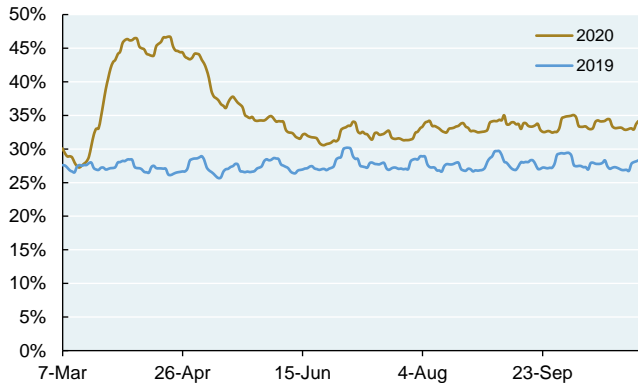
Source: Internal Chase data, JPMAM. Nov 02, 2020.

Retail spending e-commerce shares
Share of total spending via e-commerce



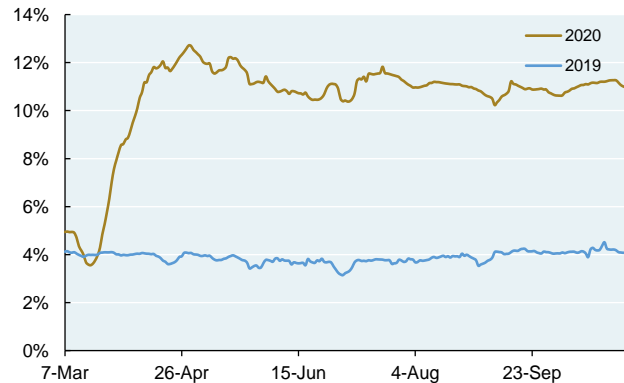
Source: Internal Chase data, JPMAM. Nov 02, 2020.

Healthcare/Pharmacy spending e-commerce shares
Share of total spending via e-commerce



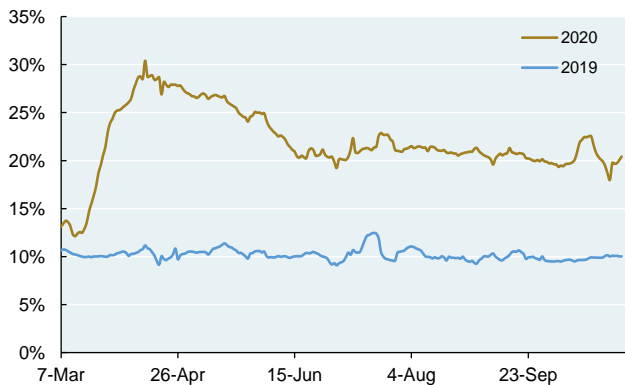
Source: Internal Chase data, JPMAM. Nov 02, 2020.

Supermarket spending e-commerce shares
Share of total spending via e-commerce



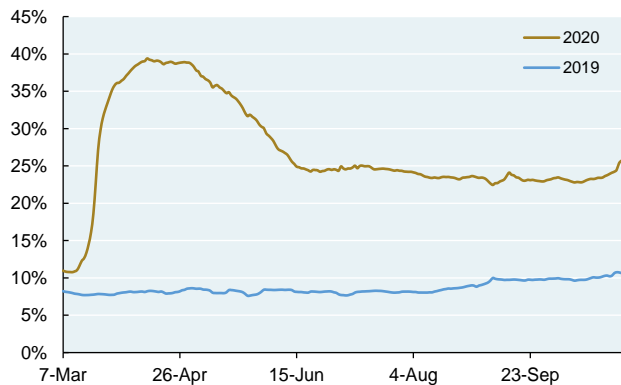
Source: Internal Chase data, JPMAM. Nov 02, 2020.

Wholesale/Discount clubs spending e-commerce shares
Share of total spending via e-commerce



Source: Internal Chase data, JPMAM. Nov 02, 2020.

Restaurant spending e-commerce shares
Share of total spending via e-commerce

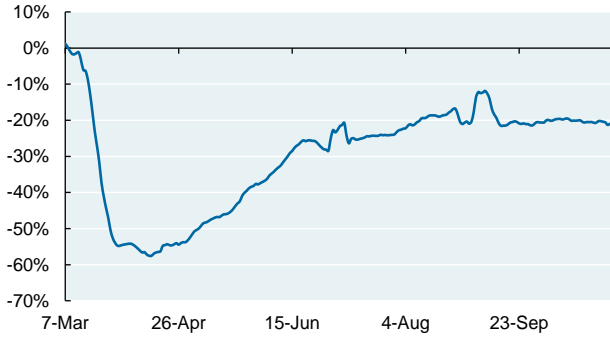


Source: Internal Chase data, JPMAM. Nov 02, 2020.



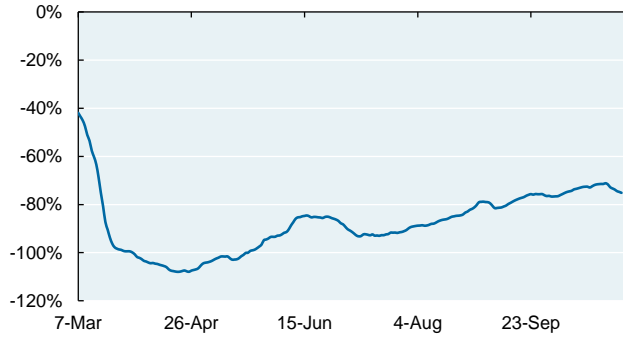
Other spending trends: airlines, oil and recurring spending

National credit and debit card spending trends
Oil spending, all transactions
Spending change 2020 vs 2019, 7 day smoothing



Source: Internal Chase data, JPMAM. Nov 02, 2020.

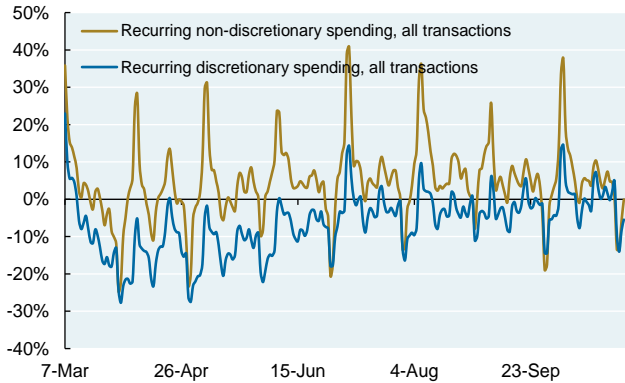
National credit and debit card spending trends
Airline spending, all transactions
Spending change 2020 vs 2019, 7 day smoothing



Source: Internal Chase data, JPMAM. Nov 02, 2020.

Recurring payments are either discretionary (cable TV/internet, gyms, equipment and furniture leasing and member organizations) or non-discretionary (utilities, child care, telecom services and insurance).

National credit and debit card spending trends
Spending change 2020 vs 2019, 7 day smoothing



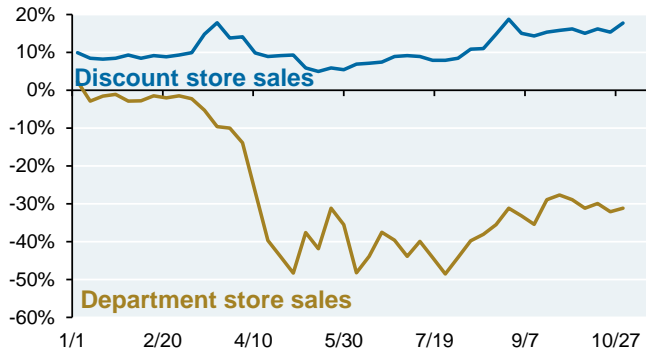
Source: Internal Chase data, JPMAM. Nov 02, 2020.



Nationwide consumer, mobility and manufacturing trackers

US retail sales

y/y % change, weekly data



Source: Redbook Research. October 31, 2020

New business applications with the IRS

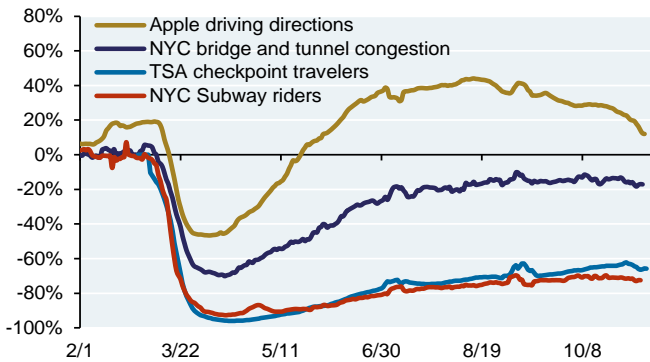
% of 2019 level, weekly data



Source: US Census Bureau. October 31, 2020

United States and New York City travel tracker

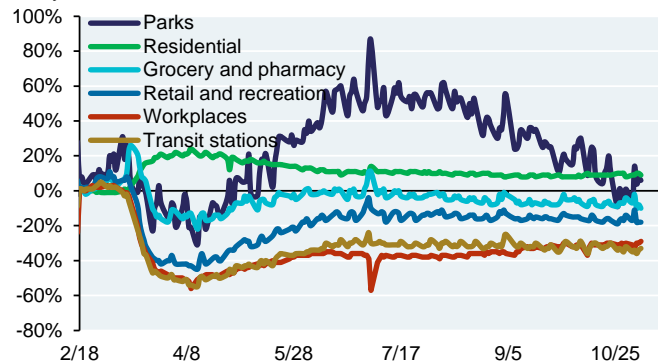
% decline from baseline level, daily data



Source: NYC MTA, TSA, Apple. November 10, 2020.

% change in Google user locations vs Jan baseline

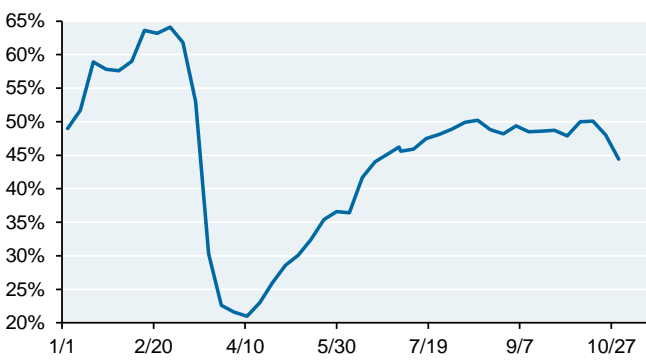
Daily data



Source: Google COVID-19 Community Mobility Reports. November 6, 2020.

US hotel occupancy rate

Weekly data



Source: STR. October 31, 2020

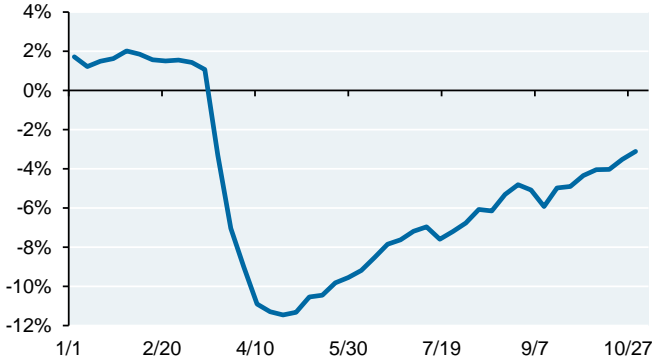
US mortgage applications for purchases of single-family homes, y/y % change, weekly data



Source: Mortgage Bankers Association. October 30, 2020



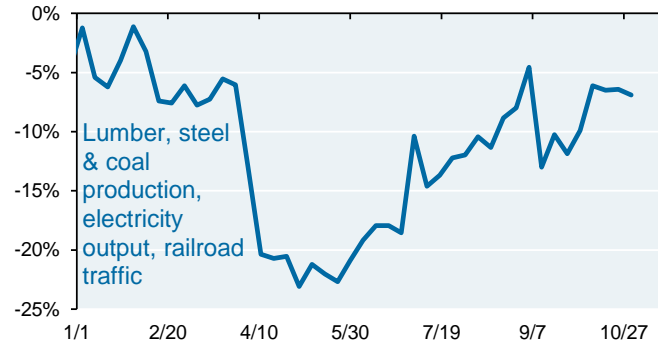
Estimated year over year % change in US GDP growth based on Weekly Economic Index conditions



Source: The Federal Reserve Bank of New York. October 31, 2020

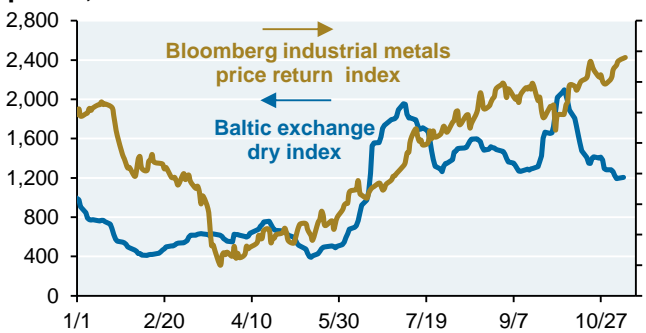
US 2020 high frequency manufacturing tracker

y/y % change, weekly data



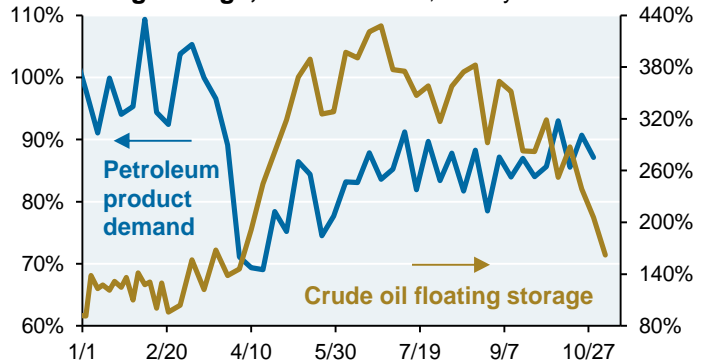
Source: WWPA, EIA, AISI, AAR, EEI, Haver. JPMAM. October 31, 2020.

Baltic exchange dry index vs industrial commodity prices, Index level



Source: Bloomberg. November 10, 2020. Bloomberg's Industrial Metals Index reflects price changes in Copper, Aluminum, Zinc, and Nickel

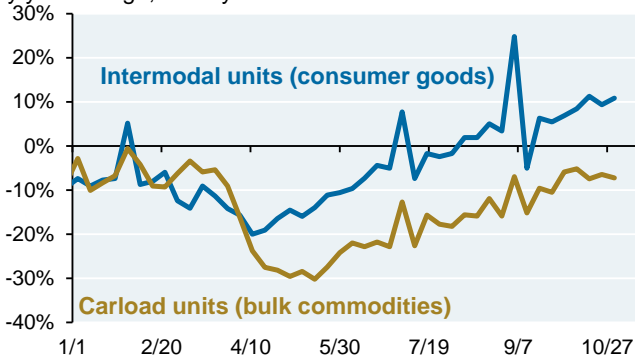
US demand for petroleum products vs global crude oil floating storage, % of 2019 level, weekly data



Source: EIA, Vortexa LTD. November 06, 2020

US railroad traffic

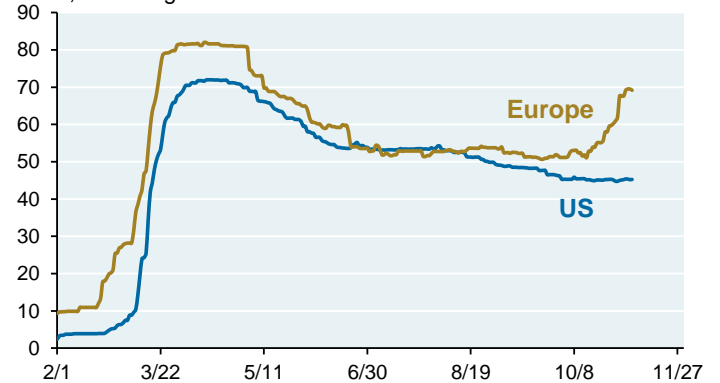
y/y % change, weekly data



Source: Association of American Railroads. October 31, 2020

Lockdown stringency index: US vs Europe

Index, 100 = highest level of lockdown strictness



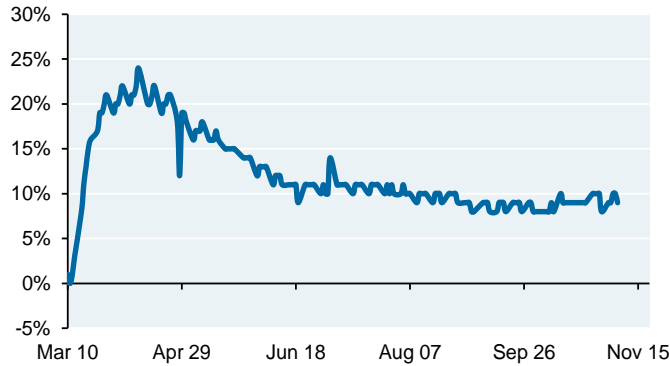
Source: University of Oxford, JPMAM. November 5, 2020.



US Mobility data

US residential mobility data

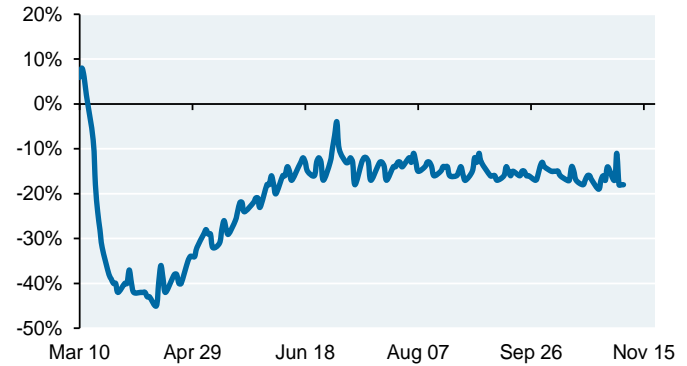
% change from baseline



Source: Google, JPMAM. Nov 06, 2020.

US retail, restaurants and recreation mobility data

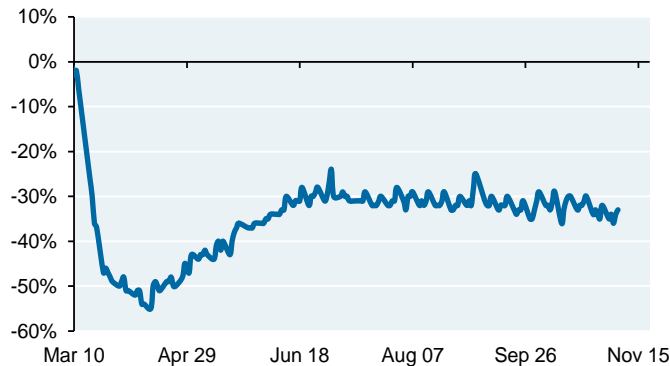
% change from baseline



Source: Google, JPMAM. Nov 06, 2020.

US transit stations mobility data

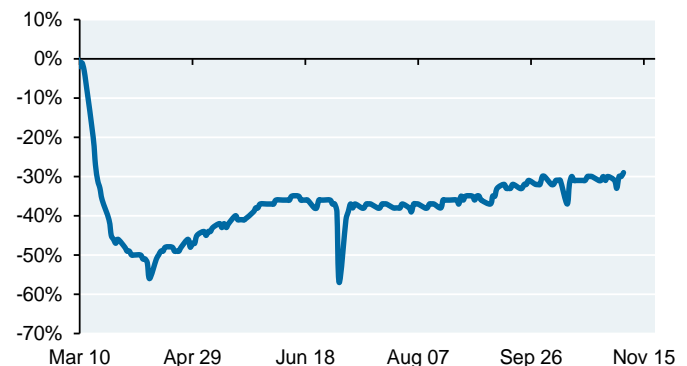
% change from baseline



Source: Google, JPMAM. Nov 06, 2020.

US workplaces mobility data

% change from baseline

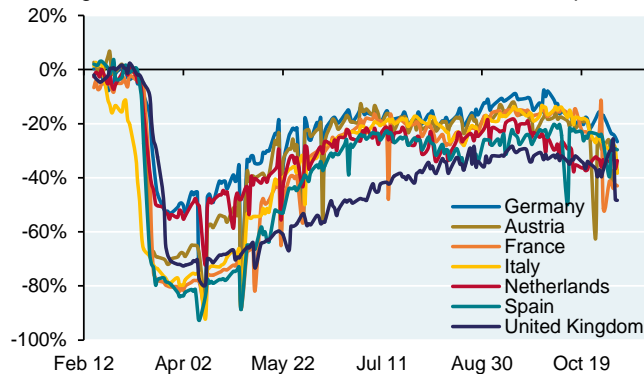


Source: Google, JPMAM. Nov 06, 2020.

International mobility data

Regional mobility data: Europe

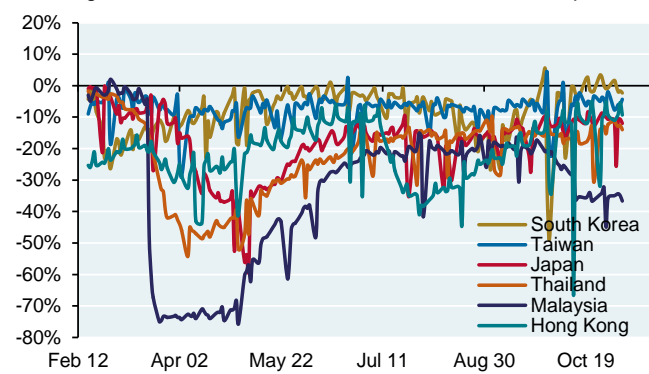
% change from baseline: retail, restaurants, transit & workplace



Source: Google, JPMAM. November 06, 2020.

Regional mobility data: Asia

% change from baseline: retail, restaurants, transit & workplace



Source: Google, JPMAM. November 06, 2020.



IMPORTANT INFORMATION

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. The data in this report is not representative of Chase's overall credit and debit cardholder population.

The views, opinions and estimates expressed herein constitute Michael Cembalest's judgment based on current market conditions and are subject to change without notice. Information herein may differ from those expressed by other areas of J.P. Morgan. This information in no way constitutes J.P. Morgan Research and should not be treated as such.

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

Non-affiliated entities mentioned are for informational purposes only and should not be construed as an endorsement or sponsorship of J.P. Morgan Chase & Co. or its affiliates.

For J.P. Morgan Asset Management Clients:

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

To the extent permitted by applicable law, we may record telephone calls and monitor electronic communications to comply with our legal and regulatory obligations and internal policies. Personal data will be collected, stored and processed by J.P. Morgan Asset Management in accordance with our privacy policies at <https://am.jpmorgan.com/global/privacy>.

ACCESSIBILITY

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.

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. 197601586K), 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 Firm) 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 55143832080) (AFSL 376919). For all other markets in APAC, to intended recipients only.

For J.P. Morgan Private Bank Clients:

ACCESSIBILITY

J.P. Morgan is committed to making our products and services accessible to meet the financial services needs of all our clients. Please direct any accessibility issues to the Private Bank Client Service Center at 1-866-265-1727.

LEGAL ENTITY, BRAND & REGULATORY INFORMATION

In the **United States**, bank deposit accounts and related services, such as checking, savings and bank lending, are offered by **JPMorgan Chase Bank, N.A.** Member FDIC. **JPMorgan Chase Bank, N.A.** and its affiliates (collectively "JPMCB") offer investment products, which may include bank-managed investment accounts and custody, as part of its trust and fiduciary services. Other investment products and services, such as brokerage and advisory accounts, are offered through **J.P. Morgan Securities LLC** ("JPMS"), a member of FINRA and SIPC. Annuities are made available through Chase Insurance Agency, Inc. (CIA), a licensed insurance agency, doing business as Chase Insurance Agency Services, Inc. in Florida. JPMCB, JPMS and CIA are affiliated companies under the common control of JPMorgan Chase & Co. Products not available in all states.

In **Luxembourg**, this material is issued by **J.P. Morgan Bank Luxembourg S.A. (JPMBL)**, with registered office at European Bank and Business Centre, 6 route de Treves, L-2633, Senningerberg, Luxembourg. R.C.S Luxembourg B10.958. Authorised and regulated by Commission de Surveillance du Secteur Financier (CSSF) and jointly supervised by the European Central Bank (ECB) and the CSSF. J.P. Morgan Bank Luxembourg S.A. is authorized as a credit institution in accordance with the Law of 5th April 1993. In the **United Kingdom**, this material is issued by **J.P. Morgan Bank Luxembourg S.A.– London Branch**. Prior to Brexit, (Brexit meaning that the UK leaves the European Union under Article 50 of the Treaty on European Union, or, if later, loses its ability to passport financial services between the UK and the remainder of the EEA), J.P. Morgan Bank Luxembourg S.A.– London Branch is subject to limited regulation by the Financial Conduct Authority and the Prudential Regulation Authority. Details about the extent of our regulation by the Financial Conduct Authority and the Prudential Regulation Authority are available from us on request. In the event of Brexit, in the UK, J.P. Morgan Bank Luxembourg S.A.– London Branch is authorised by the Prudential Regulation Authority, subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details about the extent of our regulation by the Prudential Regulation Authority are available from us on request. In **Spain**, this material is distributed by **J.P. Morgan Bank**



Luxembourg S.A., Sucursal en España, with registered office at Paseo de la Castellana, 31, 28046 Madrid, Spain. J.P. Morgan Bank Luxembourg S.A., Sucursal en España is registered under number 1516 within the administrative registry of the Bank of Spain and supervised by the Spanish Securities Market Commission (CNMV). In **Germany**, this material is distributed by **J.P. Morgan Bank Luxembourg S.A., Frankfurt Branch**, registered office at Taunustor 1 (TaunusTurm), 60310 Frankfurt, Germany, jointly supervised by the Commission de Surveillance du Secteur Financier (CSSF) and the European Central Bank (ECB), and in certain areas also supervised by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin). In **Italy**, this material is distributed by **J.P. Morgan Bank Luxembourg S.A.– Milan Branch**, registered office at Via Catena Adalberto 4, Milan 20121, Italy and regulated by Bank of Italy and the Commissione Nazionale per le Società e la Borsa (CONSOB). In the **Netherlands**, this material is distributed by **J.P. Morgan Bank Luxembourg S.A., Amsterdam Branch**, with registered office at World Trade Centre, Tower B, Strawinskylaan 1135, 1077 XX, Amsterdam, The Netherlands. J.P. Morgan Bank Luxembourg S.A., Amsterdam Branch is authorised and regulated by the Commission de Surveillance du Secteur Financier (CSSF) and jointly supervised by the European Central Bank (ECB) and the CSSF in Luxembourg; J.P. Morgan Bank Luxembourg S.A., Amsterdam Branch is also authorised and supervised by De Nederlandsche Bank (DNB) and the Autoriteit Financiële Markten (AFM) in the Netherlands. Registered with the Kamer van Koophandel as a branch of J.P. Morgan Bank Luxembourg S.A. under registration number 71651845. In **Denmark**, this material is distributed by **J.P. Morgan Bank Luxembourg, Copenhagen Br**, filial af J.P. Morgan Bank Luxembourg S.A. with registered office at Kalvebod Brygge 39-41, 1560 København V, Denmark. J.P. Morgan Bank Luxembourg, Copenhagen Br, filial af J.P. Morgan Bank Luxembourg S.A. is authorised and regulated by Commission de Surveillance du Secteur Financier (CSSF) and jointly supervised by the European Central Bank (ECB) and the CSSF. J.P. Morgan Bank Luxembourg, Copenhagen Br, filial af J.P. Morgan Bank Luxembourg S.A. is also subject to the supervision of Finanstilsynet (Danish FSA) and registered with Finanstilsynet as a branch of J.P. Morgan Bank Luxembourg S.A. under code 29009. In **Sweden**, this material is distributed by **J.P. Morgan Bank Luxembourg S.A. - Stockholm Bankfilial**, with registered office at Hamngatan 15, Stockholm, 11147, Sweden. J.P. Morgan Bank Luxembourg S.A. - Stockholm Bankfilial is authorised and regulated by Commission de Surveillance du Secteur Financier (CSSF) and jointly supervised by the European Central Bank (ECB) and the CSSF. J.P. Morgan Bank Luxembourg S.A., Stockholm Branch is also subject to the supervision of Finansinspektionen (Swedish FSA). Registered with Finansinspektionen as a branch of J.P. Morgan Bank Luxembourg S.A.. In **France**, this material is distributed by **JPMorgan Chase Bank, N.A. (“JPMCB”), Paris branch**, which is regulated by the French banking authorities Autorité de Contrôle Prudentiel et de Résolution and Autorité des Marchés Financiers. In **Switzerland**, this material is distributed by **J.P. Morgan (Suisse) SA**, which is regulated in Switzerland by the Swiss Financial Market Supervisory Authority (FINMA).

In Hong Kong, this material is distributed by **JPMCB, Hong Kong branch**. JPMCB, Hong Kong branch is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission of Hong Kong. In Hong Kong, we will cease to use your personal data for our marketing purposes without charge if you so request. In **Singapore**, this material is distributed by **JPMCB, Singapore branch**. JPMCB, Singapore branch is regulated by the Monetary Authority of Singapore. Dealing and advisory services and discretionary investment management services are provided to you by JPMCB, Hong Kong/Singapore branch (as notified to you). Banking and custody services are provided to you by JPMCB Singapore Branch. The contents of this document have not been reviewed by any regulatory authority in Hong Kong, Singapore or any other jurisdictions. This advertisement has not been reviewed by the Monetary Authority of Singapore. JPMorgan Chase Bank, N.A., a national banking association chartered under the laws of the United States, and as a body corporate, its shareholder’s liability is limited.

JPMorgan Chase Bank, N.A. (JPMCBNA) (ABN 43 074 112 011/AFS Licence No: 238367) is regulated by the Australian Securities and Investment Commission and the Australian Prudential Regulation Authority. Material provided by JPMCBNA in Australia is to “wholesale clients” only. For the purposes of this paragraph the term “wholesale client” has the meaning given in section 761G of the Corporations Act 2001 (Cth). Please inform us if you are not a Wholesale Client now or if you cease to be a Wholesale Client at any time in the future.

JPMS is a registered foreign company (overseas) (ARBN 109293610) incorporated in Delaware, U.S.A. Under Australian financial services licensing requirements, carrying on a financial services business in Australia requires a financial service provider, such as J.P. Morgan Securities LLC (JPMS), to hold an Australian Financial Services Licence (AFSL), unless an exemption applies. **JPMS is exempt from the requirement to hold an AFSL under the Corporations Act 2001 (Cth) (Act) in respect of financial services it provides to you, and is regulated by the SEC, FINRA and CFTC under US laws, which differ from Australian laws.** Material provided by JPMS in Australia is to “wholesale clients” only. The information provided in this material is not intended to be, and must not be, distributed or passed on, directly or indirectly, to any other class of persons in Australia. For the purposes of this paragraph the term “wholesale client” has the meaning given in section 761G of the Act. Please inform us immediately if you are not a Wholesale Client now or if you cease to be a Wholesale Client at any time in the future.

This material has not been prepared specifically for Australian investors. It:
 may contain references to dollar amounts which are not Australian dollars;
 may contain financial information which is not prepared in accordance with Australian law or practices;
 may not address risks associated with investment in foreign currency denominated investments; and
 does not address Australian tax issues.

With respect to countries in **Latin America**, the distribution of this material may be restricted in certain jurisdictions. We may offer and/or sell to you securities or other financial instruments which may not be registered under, and are not the subject of a public offering under, the securities or other financial regulatory laws of your home country. Such securities or instruments are offered and/or sold to you on a private basis only. Any communication by us to you regarding such securities or instruments, including without limitation the delivery of a prospectus, term sheet or other offering document, is not intended by us as an offer to sell or a solicitation of an offer to buy any securities or instruments in any jurisdiction in which such an offer or a solicitation is unlawful. Furthermore, such securities or instruments may be subject to certain regulatory and/or contractual restrictions on subsequent transfer by you, and you are solely responsible for ascertaining and complying with such restrictions. To the extent this content makes reference to a fund, the Fund may not be publicly offered in any Latin American country, without previous registration of such fund’s securities in compliance with the laws of the corresponding jurisdiction. Public offering of any security, including the shares of the Fund, without previous registration at Brazilian Securities and Exchange Commission—CVM is completely prohibited. Some products or services contained in the materials might not be currently provided by the Brazilian and Mexican platforms.

References to “J.P. Morgan” are to JPM, its subsidiaries and affiliates worldwide. “J.P. Morgan Private Bank” is the brand name for the private banking business conducted by JPM.

This material is intended for your personal use and should not be circulated to or used by any other person, or duplicated for non-personal use, without our permission. If you have any questions or no longer wish to receive these communications, please contact your J.P. Morgan representative.

© 2020 JPMorgan Chase & Co. All rights reserved.