

Real estate markets

Rent control - How big a risk to the apartment industry?

Chief Investment Office GWM | 11 June 2019 07:23 am EDT

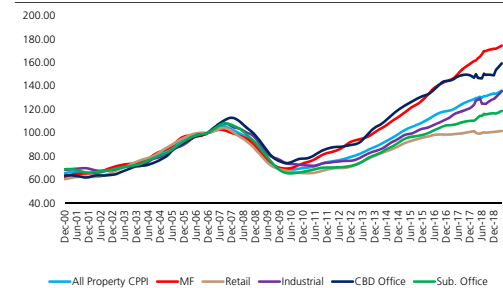
Jonathan Woloshin, CFA, Real Estate & Lodging Analyst Americas, jonathan.woloshin@ubs.com

- The apartment sector has been one of the strongest sub-sectors of the commercial real estate industry following the global financial crisis. Apartment rents in many cities have grown significantly, particularly those in more expensive, coastal cities.
- The substantial increase in apartment rents across the nation following the global financial crisis has, among other things, led to numerous rent control conversations, ballot initiatives and legislation (both enacted and proposed) in a number of states across the country.
- Oregon recently enacted statewide rent control. California and New York have a number of bills circulating through their respective legislatures. Based on current proposals we believe New York has the potential to enact the more unfavorable legislation for the apartment sector.
- We continue to believe rent control is an ineffective manner to address housing affordability as it will likely lead to decreased returns for apartment owners and developers and will ultimately lead to a decline in new construction, thus further exacerbating as opposed to ameliorating the affordability equation.
- We believe California and New York-focused REITs should be relatively insulated from rent control initiatives based on their property exposures and the nature proposed legislation, particularly in California.

The apartment sector has been one of the strongest sub-sectors of the commercial real estate (CRE) industry following the global financial crisis (GFC). As can be seen in Figures 1 and 2, since 2001 the apartment sector (also known as multifamily) has experienced the greatest increase in asset values among the major CRE asset classes (Figure 1) and the greatest compression in capitalization rates (Figure 2). Contributors to this strong performance include favorable demographics, solid operating fundamentals and strong rent growth, particularly post the GFC.

Figure 1: Moody's Commercial Property Price Index for Major CRE Asset Classes

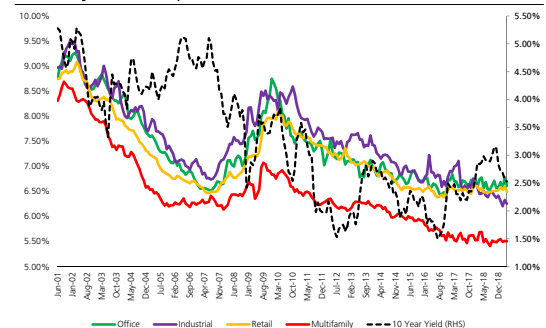
December 2000-April 2019



Source: Real Capital Analytics

Figure 2: Private Market Transaction Capitalization Rates for Major CRE Asset Classes

January 2001-April 2019



Source: Real Capital Analytics

Rents have experienced strong growth since 2010

Apartment rents in many cities has grown significantly following the GFC, particularly those more expensive, coastal cities. In Figure 3 we highlight the growth in rent for a one bedroom apartment between 2010-2018 for select, high cost coastal cities. In addition Figure 3 details monthly rent as a % of monthly household income. As can be seen the average for these cities exceeds the national average of 24% - with the exception of Portland, OR.

Rent control – a knee- jerk response

The substantial increase in apartment rents across the nation following the GFC has, among other things, led to numerous rent control conversations, ballot initiatives and legislation (both enacted and proposed) in a number of states across the country. Oregon was the first state in the US to enact statewide rent control earlier this year. In addition, despite the failure of Proposition 10 in California in 2018 the California legislature has proposed several rent control measures in 2019. Other states that are considering rent control include Colorado, Illinois, Washington, Massachusetts and New York.

We continue to believe rent control is an ineffective manner to address housing affordability as it will likely lead to decreased returns for apartment owners and developers and will ultimately lead to a decline in new construction, thus further exacerbating as opposed to ameliorating the affordability equation. That said we are mindful that there is a significant political component that must be factored into the calculus, particularly in the coastal states of California, Washington and New York where rents have risen quickly, can represent a substantial percentage of median household income and single party control of government exists.

Although rent control may sound like a panacea to tenants, we believe artificial constraints to rent growth, expense recovery and new development will ultimately lead to decreased investment in existing structures and development as well as reduced transaction volume of existing assets. In Figure 4 we highlight the YOY change in quarterly multifamily transaction volume for a select group of cities in the US between 1Q 2018-1Q 2019. We recognize that many factors impact the flow of investment capital into a given market and asset classes. That said we are intrigued that the markets that have either enacted or are far down the road with various rent control measures (NY, LA, SF, Portland) all witnessed declining transaction volumes over the past several quarters. As we are fond of saying - capital seeks it highest risk adjusted return. It is certainly reasonable to conclude the prospect of rent control has shifted investment capital to more attractive regions.

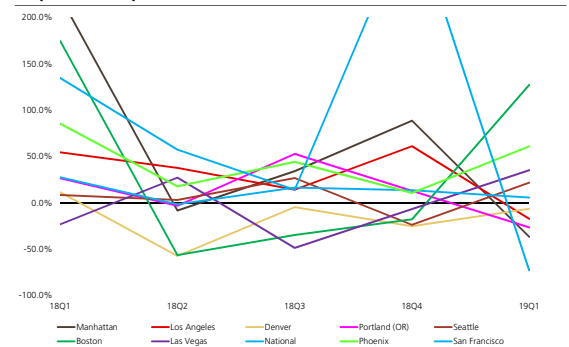
We are particularly concerned about one specific proposal in New York that would limit a landlords ability to recoup the costs of significant building and individual unit improvements - respectively know as MCIs and IAs. If landlords are not permitted to have rents reflect these costs there is increased risk of declining investment and quality of rent controlled/rent stabilized units in New York. This could also have a multiplicative effect in that these capital expenditures have historically generated substantial economic activity and job growth in the city.

Figure 3: Apartment Rent Growth for Select Regions 2010-2018

Region	1 Bedroom Apt. Rent Growth 2010-2018	1 Bedroom Apt. As A % of Median Household Income
San Francisco	78.0%	33.2%
Portland	67.2%	19.7%
Los Angeles	49.6%	38.4%
Boston	46.2%	25.2%
NY City	34.6%	29.6%

Source: CBRE, FFEIC

Figure 4: Multifamily Transaction Volume for Select Cities 1Q2018-1Q 2019



Source: Real Capital Analytics

How might the Multifamily REITs be impacted?

In Figure 5, we highlight the exposure for a group of multifamily REITs to markets that have enacted or proposed rent control initiatives. In New York where we believe the greatest potential currently exists for adverse legislation AvalonBay (AVB, Bellwether), Equity Residential (EQR, Bellwether) and UDR Inc. (UDR, Most Preferred) have the most exposure to NYC based on net operating income (NOI) exposure. However, all three companies exposure to potential rent control/stabilization is significantly lower given their lower exposure to tax abatement-benefitted buildings. The aforementioned notwithstanding we believe unfavorable legislation would likely lead to decreased investment activity by these REITs.

In California, Essex Property (ESS, Bellwether) has the greatest exposure at 82% of revenues (NOI figure not available). Other REITs with significant exposure to California include AVB, EQR and UDR. As we discuss below we believe the proposed bills in the California legislature are significantly less onerous than originally feared. Assuming the final outcome is substantially similar to what is currently being proposed we believe the California-focused multifamily REITs should be relatively well positioned.

Rent control – the potential slippery slope

As we discuss below the rent control measure passed in Oregon and the measures being proposed in California are more benign than originally feared. However one concern is that this becomes a slippery slope where the regulations become increasingly more stringent over time, particularly if the affordability situation deteriorates further.

Below we provide an overview of the recently enacted Oregon law as well as highlights of the proposals in California and New York. The New York rent control/rent stabilization laws in particular are very complex, running hundreds of pages. As such our overview is likely not all encompassing as the NY legislature is grappling with a number of proposals from various constituencies and an imminent expiration date of existing regulations - 15 June 2019.

California and Oregon – It could have been worse

On 28 February 2019, Governor Brown signed Senate Bill 608 making **Oregon** the first state in the US to enact statewide rent control. All in all we believe the bill struck a reasonable balance for tenants and owners/developers. Significant aspects of the bill include the following.

- Annual rent increases are generally limited to 7% + CPI. There is an exemption for some smaller and newer buildings.
- Landlords are prohibited from terminating month-month leases without cause after 12 months of occupancy. In addition rent increases are limited to once per year.
- Rent increases are uncapped if renters vacate voluntarily;
- Rentals built after 28 February 2004 are not subject to rent increase limitations;

Figure 5: REIT Net Operating Income Exposure to Markets Implementing or Debating Rent Control Measures

	NY	CA	CO	FL	OR	IL
AVB (a,c)	7.8%	42.0%	0.0%	0.0%	0.0%	0.0%
EQR (b,c)	9.7%	47.0%	1.0%	0.0%	0.0%	0.0%
UDR' (c)	9.8%	35.6%	1.1%	7.5%	0.7%	0.0%
AIV	4.1%	37.1%	4.0%	6.8%	0.0%	4.9%
CPT	0.0%	12.8%	5.8%	17.8%	0.0%	0.0%
ESS	0.0%	82.1%	0.0%	0.0%	0.0%	0.0%

a) Total NY area exposure for AVB is 22.2%. NYC represents 7.8% of NOI.

b) Total NY area exposure for AVB is 15.3%. NYC represents 9.7% of NOI.

c) AVB, EQR and UDR estimate their NYC NOI exposed to rent control is 1.8%, 4.8% and 2.0% respectively

Source: Company Documents, UBS

Note: The data for ESS are a % of Revenue

- Landlords may evict tenants for non-payment of rent or lease agreement violations. In addition, the bill allows landlords to evict tenants in the case of significant upgrades or planned demolition;
- Landlords who evict a tenant for no fault must pay the relocation fee;
- Landlords who own four or less rental units are not required to pay the relocation fee if the landlord wishes to move into, sell or significantly upgrade the property;
- Landlords who violate the regulations may be liable to tenants for up to three months rent and damages.

California has several bills pending in the legislature addressing rent control and creating incentives for additional development. Although nothing is firm yet it appears that what is being proposed would be more benign for landlords than what was contemplated under the failed 2018 Proposition 10 ballot initiative.

- Assembly Bill 1482 would impose a statewide cap on annual rent increases of 7% +CPI (with a hard cap of 10%). These caps would not apply to affordable units, apartments less than 10 years old, single-family rents (assuming the owner owns 10 or less units) and college dormitories. In addition the bill would expire in three years.
- Assembly Bill 1279 would ease the permitting process for low-density unit construction in what are known as high resource areas. The bill's goal is to ease the permitting and development process for affordable units (affordability to be defined) allowing up to four units to be built in areas zoned for single-family residences. In addition buildings with as many as 40 units may be built in areas zoned for any residential use. Further, as many as 100 units may be built in areas zoned for either residential or commercial use. The quid pro quo for developers would be the requirement to either include an affordable component or contribute to an affordable housing fund (presumably set up by the state).
- Assembly Bill 1486 would require counties to maintain a database of surplus, or unused public land that could be available for public bid starting in 2021. In addition to expanding the definition of public land, the proposed bill would eliminate the current bidding priority for developers of low-income, disabled and senior housing. The proposed bill alters the bidding process by removing the previously mentioned priorities and opens the bidding for low and moderate income housing development. In addition land that was previously zoned for commercial use would be eligible for residential development provided the entire development meets the requirements of affordable.
- Senate Bill 330 seeks to spur additional development by limiting each municipality's ability to restrict/delay permitting and new developments. Highlights of the proposed bill would prevent municipalities from a number of items including:

- Lowering maximum density rules;
- Capping the total number of housing permits issued;
- Enacting moratoriums on new residential development;
- Allowing commercial development on land previously zoned for residential use;
- Establishing minimum-parking ratios in densely populated urban areas that are within one quarter of a mile from a train station. For areas not considered dense urban settings municipalities could not require minimum parking/unit requirements greater than 0.5 spaces/unit.

New York City – A tangled web of laws with a short expiration date

New York City (NYC) has some of the most complex rent control and rent regulation laws in the US. Among the complexities in NYC is the differentiation between rent controlled and rent stabilized units. We estimate that a relatively small percentage of the apartment units are rent controlled (approximately 1% of the 1.97 million units in NYC). Rent control only applies to building built prior to 1947 and have been continuously occupied by a tenant or tenant's family member since 1971.

However we estimate that more than 45% of the units in NYC are subject to rent stabilization, something that is overseen by the Rent Guidelines Board (RGB). The RGB is appointed by the Mayor of NYC and consists nine people: two landlords, two tenant representatives and five other individuals. In general rent stabilization guidelines apply to building constructed between 1947 and 1974. However, newer buildings that were constructed under tax abatement programs are also subject to rent stabilization guidelines during the period of the tax abatement. Once the tax abatement period expires the previous stabilized units may become market rate units.

Historically the process of approving percentage increases allowed under rent stabilization has been contentious given the competing dynamics of landlords and tenants. The current process is further complicated by two additional factors: 1) the current guidelines expire on 15 June 2019 and 2) the political climate in New York State and NYC has shifted significantly to the left. The Democrats control the Governor's and Mayor's mansion, the Senate and Assembly in NY State and the NYC Council. Tenants have brought significant political pressure on the various entities to significantly limit any increases and eliminate some landlord protections. Below we discuss some of the proposals being debated in the New York legislature. In all we believe there are nine separate proposals being debated by the Senate and Assembly on the topic.

- AB-A5030A/SB-2892A – The proposals would prohibit annual rent increases on renewals greater than 150% of the local CPI on units not currently under the aegis of rent regulation. This proposal would not apply to buildings with less than 4 units that are also owner-occupied. Under this proposal landlords would be

permitted to increase rents to current market rates pursuant to tenant turnover.

- AB-2351/SB-185 – The proposals would prohibit landlords from significantly increasing rents on vacant units. The current laws allow for as much as a 20% increase on vacant units. The proposals would allow rent increases on vacant unit to be in line with those increases authorized by the RGB.
- AB-1198/SB-2591A - The proposals would eliminate a landlord's ability to deregulate a unit once the unit's rent exceeded USD 2,774.76/month or if the tenant annual income exceeded USD 200,000/year. We do not believe this provision would apply to units governed by tax abatement programs.
- AB-4348/SB-2845 – The proposals would prohibit landlords from adjusting the amount of preferential rent, rent charged and paid by the tenant which is less than the legal regulated rent for the housing accommodation, upon the renewal of a lease. In addition landlords would only be allowed to make such adjustments upon a vacancy, which is not the result of the failure of the owner to maintain a habitable residence.
- AB-6322/SB-4312 – The proposals would require a regulatory framework for the approval of rent increases to rent regulated property as a result of major capital improvements (MCIs). Currently, the expenses for MCIs are recovered over seven years. This bill codifies the MCI as a surcharge to the legal regulated rent, which is separately designated and billed as such, and mandates that the surcharge for authorized MCIs ceases after the cost of the improvement is recouped. Finally, this bill prevents landlords from receiving a financial windfall by charging MCIs to tenants, if the New York State Energy and Development Authority funds an MCI. In addition the proposals would govern rent increases allowed for individual apartment improvements (IAIs). Currently landlords are permitted to increase the monthly rent of a unit by a small percentage of the improvements. The percentage varies by building size.

Appendix

Statement of Risk

Equities - Stock market returns are difficult to forecast because of fluctuations in the economy, investor psychology, geopolitical conditions and other important variables.

Required Disclosures

Analyst Certification

Each research analyst primarily responsible for the content of this research report, in whole or in part, certifies that with respect to each security or issuer that the analyst covered in this report: (1) all of the views expressed accurately reflect his or her personal views about those securities or issuers; and (2) no part of his or her compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by that research analyst in the research report.

Companies mentioned in this report (11 June 2019):

AvalonBay Communities Inc. (AVB - Bellwether, \$209.36), Equity Residential (EQR - Bellwether, \$77.83), Essex Property Trust Inc. (ESS - Bellwether, \$296.01), UDR Inc. (UDR - Most Preferred, \$46.09)

CIO Americas, Wealth Management equity selection system

Equity sector strategists provide three equity selections: Most Preferred (MP), Least Preferred (LP) and Bellwether designation.

Rating definitions

Most Preferred*: The equity sector strategist expects the stock to outperform the relevant benchmark in the next 12 months.

Least Preferred*: The equity sector strategist expects the stock to underperform the relevant benchmark in the next 12 months.

Bellwether: Stocks that are of high importance or relevance to the sector and which the equity sector strategist expects the stock to perform broadly in line with the sector benchmark in the next 12 months.

*A stock cannot be selected as Most Preferred if UBS Investment Research rates it a Sell, while a UBS Investment Research Buy rated stock cannot be selected as Least Preferred.

Restricted: Issuing of research on a company by CIO Americas, WM can be restricted due to legal, regulatory, contractual or best business practice obligations which are normally caused by UBS Investment Bank's involvement in an investment banking transaction in regard to the concerned company.

Equity selection: An assessment relative to a benchmark

Equity selections in Equity Preferences lists (EPLs) are relative assessments versus a sector/industry, country/regional or thematic benchmark. The chosen benchmark is disclosed on the front page of each EPL.

Stocks can be selected for several EPLs. To keep consistency, a stock can only be selected as either Most Preferred or Least Preferred, but not both simultaneously. As benchmarks differ between lists, stocks need not be included on every list to which they could theoretically be added.

UBS Investment Research: Global Equity Rating Definitions

For information on the ways in which UBS manages conflicts and maintains independence of its research product; historical performance information; and certain additional disclosures concerning UBS research recommendations, please visit www.ubs.com/disclosures.

Global Equity 12- Month Rating Definitions

Buy: FSR is > 6% above the MRA. **Neutral**: FSR is between -6% and 6% of the MRA. **Sell**: FSR is > 6% below the MRA.

Key Definitions

Forecast Stock Return (FSR) is defined as expected percentage price appreciation plus gross dividend yield over the next 12 months.

Market Return Assumption (MRA) is defined as the one-year local market interest rate plus 5% (a proxy for, and not a forecast of, the equity risk premium).

Appendix

Under Review (UR) Stocks may be flagged as UR by the analyst, indicating that the stock's price target and/or rating are subject to possible change in the near term, usually in response to an event that may affect the investment case or valuation.

Exceptions and Special Cases

Core Banding Exceptions (CBE): Exceptions to the standard +/-6% bands may be granted by the Investment Review Committee (IRC). Factors considered by the IRC include the stock's volatility and the credit spread of the respective company's debt. As a result, stocks deemed to be very high or low risk may be subject to higher or lower bands as they relate to the rating. When such exceptions apply, they will be identified the Companies Mentioned or Company Disclosure table in the relevant research piece.

Disclosures (11 June 2019)

AvalonBay Communities Inc. 1, 2, 3, 4, 5, 6, 7, Equity Residential 1, 2, 3, 4, 5, 7, 8; Essex Property Trust Inc. 2, 5, UDR Inc. 5,

1. Within the past 12 months, UBS AG, its affiliates or subsidiaries has received compensation for investment banking services from this company/entity or one of its affiliates.
2. UBS AG, its affiliates or subsidiaries has acted as manager/co-manager in the underwriting or placement of securities of this company/entity or one of its affiliates within the past 12 months.
3. Within the past 12 months, UBS Securities LLC and/or its affiliates have received compensation for products and services other than investment banking services from this company/entity.
4. This company/entity is, or within the past 12 months has been, a client of UBS Securities LLC, and investment banking services are being, or have been, provided.
5. UBS Securities LLC makes a market in the securities and/or ADRs of this company.
6. This company/entity is, or within the past 12 months has been, a client of UBS Securities LLC, and non-securities services are being, or have been, provided.
7. This company/entity is, or within the past 12 months has been, a client of UBS Securities LLC, and non-investment banking securities-related services are being, or have been, provided.
8. UBS AG, its affiliates or subsidiaries expect to receive or intend to seek compensation for investment banking services from this company/entity within the next three months.

Current CIO Americas, WM global rating distribution (as of last month- end)

Rating*	% of companies under coverage*	% for which IB services have been provided**
Most Preferred	39.66	21.74
Bellwether	59.48	23.91
Least Preferred	0.86	0.00

*Under our industry sector relative stock view system, outperform most closely corresponds with a "buy" recommendation, bellwether most closely corresponds with a "hold" recommendation and underperform most closely corresponds with a "sell" recommendation.

**Percentage of companies within this rating for which investment banking services were provided by UBS AG or UBS Securities LLC or its affiliates within the past 12 months.

Source: UBS Financial Services Inc., its subsidiaries and affiliate, as of Jun 11 2019.

Appendix

AvalonBay Communities Inc. Rating History as of 06/10/2019



Most Preferred (MPR); Bellwether (BW); Least Preferred (LPR); Outperform (OP); Marketperform (MP); Underperform (UP); Not Rated (NR); Price target not available (NA)
 On 14 Aug 2015, CIOA WM discontinued Outperform, Marketperform, Underperform ratings. On 17 Aug 2015, CIOA WM introduced Most Preferred, Bellwether, Least Preferred recommendations.

Equity Residential Rating History as of 06/10/2019



Most Preferred (MPR); Bellwether (BW); Least Preferred (LPR); Outperform (OP); Marketperform (MP); Underperform (UP); Not Rated (NR); Price target not available (NA)
 On 14 Aug 2015, CIOA WM discontinued Outperform, Marketperform, Underperform ratings. On 17 Aug 2015, CIOA WM introduced Most Preferred, Bellwether, Least Preferred recommendations.

Appendix

Essex Property Trust Inc. Rating History as of 06/10/2019



Most Preferred (MPR); Bellwether (BW); Least Preferred (LPR); Outperform (OP); Marketperform (MP); Underperform (UP); Not Rated (NR); Price target not available (NA)
 On 14 Aug 2015, CIOA WM discontinued Outperform, Marketperform, Underperform ratings. On 17 Aug 2015, CIOA WM introduced Most Preferred, Bellwether, Least Preferred recommendations.

UDR Inc. Rating History as of 06/10/2019



Most Preferred (MPR); Bellwether (BW); Least Preferred (LPR); Outperform (OP); Marketperform (MP); Underperform (UP); Not Rated (NR); Price target not available (NA)
 On 14 Aug 2015, CIOA WM discontinued Outperform, Marketperform, Underperform ratings. On 17 Aug 2015, CIOA WM introduced Most Preferred, Bellwether, Least Preferred recommendations.

Appendix

Disclaimer

UBS Chief Investment Office's ("CIO") investment views are prepared and published by the Global Wealth Management business of UBS Switzerland AG (regulated by FINMA in Switzerland) or its affiliates ("UBS").

The investment views have been prepared in accordance with legal requirements designed to promote **the independence of investment research**.

Instrument/issuer- specific investment research – Risk information:

This publication is **for your information only** and is not intended as an offer, or a solicitation of an offer, to buy or sell any investment or other specific product. The analysis contained herein does not constitute a personal recommendation or take into account the particular investment objectives, investment strategies, financial situation and needs of any specific recipient. It is based on numerous assumptions. Different assumptions could result in materially different results. Certain services and products are subject to legal restrictions and cannot be offered worldwide on an unrestricted basis and/or may not be eligible for sale to all investors. All information and opinions expressed in this document were obtained from sources believed to be reliable and in good faith, but no representation or warranty, express or implied, is made as to its accuracy or completeness (other than disclosures relating to UBS). All information and opinions as well as any forecasts, estimates and market prices indicated are current as of the date of this report, and are subject to change without notice. This publication is not intended to be a complete statement or summary of the securities, markets or developments referred to in the report. Opinions expressed herein may differ or be contrary to those expressed by other business areas or divisions of UBS as a result of using different assumptions and/or criteria.

In no circumstances may this document or any of the information (including any forecast, value, index or other calculated amount ("Values")) be used for any of the following purposes (i) valuation or accounting purposes; (ii) to determine the amounts due or payable, the price or the value of any financial instrument or financial contract; or (iii) to measure the performance of any financial instrument including, without limitation, for the purpose of tracking the return or performance of any Value or of defining the asset allocation of portfolio or of computing performance fees. By receiving this document and the information you will be deemed to represent and warrant to UBS that you will not use this document or otherwise rely on any of the information for any of the above purposes. UBS and any of its directors or employees may be entitled at any time to hold long or short positions in investment instruments referred to herein, carry out transactions involving relevant investment instruments in the capacity of principal or agent, or provide any other services or have officers, who serve as directors, either to/for the issuer, the investment instrument itself or to/for any company commercially or financially affiliated to such issuers. At any time, investment decisions (including whether to buy, sell or hold securities) made by UBS and its employees may differ from or be contrary to the opinions expressed in UBS research publications. Some investments may not be readily realizable since the market in the securities is illiquid and therefore valuing the investment and identifying the risk to which you are exposed may be difficult to quantify. UBS relies on information barriers to control the flow of information contained in one or more areas within UBS, into other areas, units, divisions or affiliates of UBS. Futures and options trading is not suitable for every investor as there is a substantial risk of loss, and losses in excess of an initial investment may occur. Past performance of an investment is no guarantee for its future performance. Additional information will be made available upon request. Some investments may be subject to sudden and large falls in value and on realization you may receive back less than you invested or may be required to pay more. Changes in foreign exchange rates may have an adverse effect on the price, value or income of an investment. The analyst(s) responsible for the preparation of this report may interact with trading desk personnel, sales personnel and other constituencies for the purpose of gathering, synthesizing and interpreting market information.

Research publications from **CIO** are written by UBS Global Wealth Management. **UBS Global Research** is written by UBS Investment Bank. Except for economic forecasts, the research process of **CIO is independent of UBS Global Research**.

As a consequence research methodologies applied and assumptions made by **CIO and UBS Global Research** may differ, for example, in terms of investment horizon, model assumptions, and valuation methods. Therefore investment recommendations independently provided by the two UBS research organizations can be different. The compensation of the analyst(s) who prepared this report is determined exclusively by research management and senior management (not including investment banking). Analyst compensation is not based on investment banking, sales and trading or principal trading revenues, however, compensation may relate to the revenues of UBS as a whole, of which investment banking, sales and trading and principal trading are a part.

Tax treatment depends on the individual circumstances and may be subject to change in the future. UBS does not provide legal or tax advice and makes no representations as to the tax treatment of assets or the investment returns thereon both in general or with reference to specific client's circumstances and needs. We are of necessity unable to take into account the

Appendix

particular investment objectives, financial situation and needs of our individual clients and we would recommend that you take financial and/or tax advice as to the implications (including tax) of investing in any of the products mentioned herein. This material may not be reproduced or copies circulated without prior authority of UBS. Unless otherwise agreed in writing UBS expressly prohibits the distribution and transfer of this material to third parties for any reason. UBS accepts no liability whatsoever for any claims or lawsuits from any third parties arising from the use or distribution of this material. This report is for distribution only under such circumstances as may be permitted by applicable law. For information on the ways in which CIO manages conflicts and maintains independence of its investment views and publication offering, and research and rating methodologies, please visit www.ubs.com/research. Additional information on the relevant authors of this publication and other CIO publication(s) referenced in this report; and copies of any past reports on this topic; are available upon request from your client advisor.

Important Information About Sustainable Investing Strategies: Incorporating environmental, social and governance (ESG) factors or Sustainable Investing considerations may inhibit the portfolio manager's ability to participate in certain investment opportunities that otherwise would be consistent with its investment objective and other principal investment strategies. The returns on a portfolio consisting primarily of ESG or sustainable investments may be lower than a portfolio where such factors are not considered by the portfolio manager. Because sustainability criteria can exclude some investments, investors may not be able to take advantage of the same opportunities or market trends as investors that do not use such criteria. Companies may not necessarily meet high performance standards on all aspects of ESG or sustainable investing issues; there is also no guarantee that any company will meet expectations in connection with corporate responsibility, sustainability, and/or impact performance.

Distributed to US persons by UBS Financial Services Inc. or UBS Securities LLC, subsidiaries of UBS AG. UBS Switzerland AG, UBS Europe SE, UBS Bank, S.A., UBS Brasil Administradora de Valores Mobiliarios Ltda, UBS Asesores Mexico, S.A. de C.V., UBS Securities Japan Co., Ltd, UBS Wealth Management Israel Ltd and UBS Menkul Degerler AS are affiliates of UBS AG. UBS Financial Services Incorporated of Puerto Rico is a subsidiary of UBS Financial Services Inc. **UBS Financial Services Inc. accepts responsibility for the content of a report prepared by a non- US affiliate when it distributes reports to US persons. All transactions by a US person in the securities mentioned in this report should be effected through a US- registered broker dealer affiliated with UBS, and not through a non- US affiliate. The contents of this report have not been and will not be approved by any securities or investment authority in the United States or elsewhere. UBS Financial Services Inc. is not acting as a municipal advisor to any municipal entity or obligated person within the meaning of Section 15B of the Securities Exchange Act (the "Municipal Advisor Rule") and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of the Municipal Advisor Rule.**

External Asset Managers / External Financial Consultants: In case this research or publication is provided to an External Asset Manager or an External Financial Consultant, UBS expressly prohibits that it is redistributed by the External Asset Manager or the External Financial Consultant and is made available to their clients and/or third parties. For country disclosures, [click here](#).

Version 04/2019. CIO82652744

© UBS 2019. The key symbol and UBS are among the registered and unregistered trademarks of UBS. All rights reserved.