

Real estate markets

UBS Luxury Property Focus 2019

Chief Investment Office GWM | 23 May 2019 05:00 am GMT+1:00 | Translation: 21 May 2019

Katharina Hofer, Economist, katharina.hofer@ubs.com; Matthias Holzhey, Economist, matthias.holzhey@ubs.com; Maciej Skoczek, CFA, CAIA, Economist, maciej.skoczek@ubs.com

- The most expensive locations in the Swiss luxury home market are located on Lake Geneva, Gstaad and St. Moritz.
- Last year, prices in the Swiss luxury segment grew faster than in both the overall Swiss market and the global luxury real estate market.

Prices highest on Lake Geneva and traditional mountain municipalities

The municipalities on Lake Geneva are among the most expensive locations for first homes in Switzerland. The most expensive is Cologny, where luxury properties are advertised for over CHF 35,000 per square meter. In contrast, prices for luxury properties on Lake Zurich and in Central Switzerland start at just under CHF 20,000 per square meter. The traditional tourist resorts of Gstaad and St. Moritz top the ranks for second home locations (starting at around CHF 32,000 per square meter).

First home market posts gains

Transaction prices for luxury properties went up over the past two years, averaging an increase of 4 percent last year and 1 percent the year before. In other words, the luxury segment grew faster than the overall market for owner-occupied homes in Switzerland. Transaction prices in the luxury segment increased more than twice as fast as the Swiss average.

This trend derived much of its momentum from the first home market. Asking prices for luxury real estate grew the fastest in the Lake Geneva region, where they rose around 9 percent a year on average over the past two years. Annualized growth on Lake Zurich and in Central Swiss municipalities was about 7 percent. Price development in the second home market was far from homogeneous. In Gstaad and Zermatt, prices increased at a low double-digit rate. In Oberengadin, Verbier and Crans-Montana, in contrast, asking prices declined slightly. A price drop was recorded in Ticino as well.

More transactions with higher prices

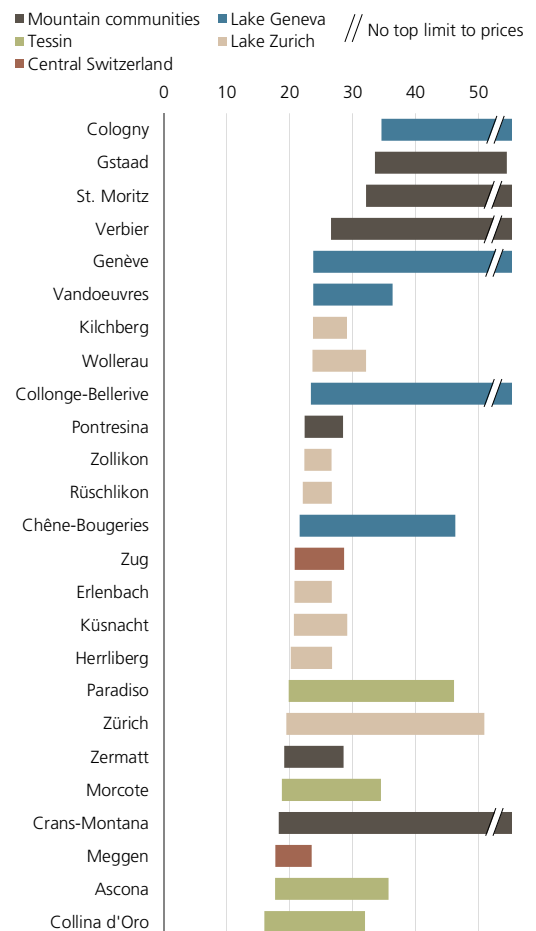
The aforementioned price increase in the luxury segment extends a recovery that began in 2016. It also trends in the opposite direction to the prior weak phase that bottomed out in 2016 when transaction prices dropped. The pricing softness had an impact: in 2014 and 2015, the number of transactions dropped by nearly one-quarter, falling well below the average seen since 2011. Selling a property required patience. Thankfully, the opportunity costs of doing so were kept low by the negative interest environment. The transaction "backlog" melted away once prices rose and the number of deals rose well past the average level.



Source: gettyimages

Lake Geneva most expensive first home market

Range of prices in luxury segment, in thousands of CHF per square meter in selected municipalities, the most expensive five percent of advertised real estate, 2016-2018 average



Muted outlook

One of the main drivers of demand for luxury real estate is growth in top-tier incomes (the top 1 percent). Large declines in this income bracket in 2012 and 2015 helped to push down prices. The downward trend was exacerbated by below-average growth in net worth in 2015. High incomes and net worths are correlated with economic growth. That means Switzerland's current economic slowdown could temporarily curb price growth in the luxury segment.

Exchange rates matter to buyers who hold their equity in a foreign currency. This is far from a trivial consideration: three out of every four buyers of luxury Swiss properties have a foreign passport, although most are Swiss residents. If these buyers held their equity in euros, they would have seen home prices rise 20 percent the moment the Swiss National Bank abandoned its EUR/CHF exchange rate floor at the start of 2015. However, exchange rates are not currently expected to fluctuate as much as they did in 2015.

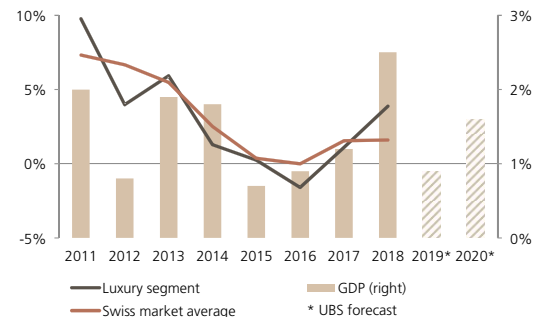
Impact of relative cantonal tax attractiveness

One possible consequence of the latest Swiss tax reform (known as "STAF") is that it may encourage companies and their senior managers to relocate, which could drive regional shifts in demand for luxury properties. Foreign demand in the luxury segment could increase if Switzerland becomes fiscally even more attractive than other countries.

Cantons' relative tax attractiveness within Switzerland is changing. The cantons of Zurich and Zug have long been highly competitive business locations, according to the *UBS Cantonal Competitiveness Indicator*. Steep profit tax cuts will make the canton of Geneva more attractive in relative terms after the tax reform. However, it's not clear whether top managers will move to new corporate locations. It will likely depend on what happens with income taxes: if they will be increased to pay for profit tax cuts, top earners will be less inclined to relocate.

Price increase on the verge of ending?

Change in transaction prices in the luxury segment and the overall Swiss market as well as growth in gross domestic product



Sources: FSO, Fahländer Partner Raumentwicklung, IAZI, Wüest Partner, UBS

Explanation for figure:

Price trends in the real estate market are normally estimated by analyzing comparable properties. In the luxury segment, however, no two properties are alike. In addition, relatively few transactions occur each year. A price index based on this kind of data would measure not just the actual price trends, but also the differences between the characteristics of the properties sold in the various years. This problem can be avoided by comparing transaction prices for luxury properties that have changed hands several times. Their characteristics should stay relatively stable over time.

Swiss luxury property – origins

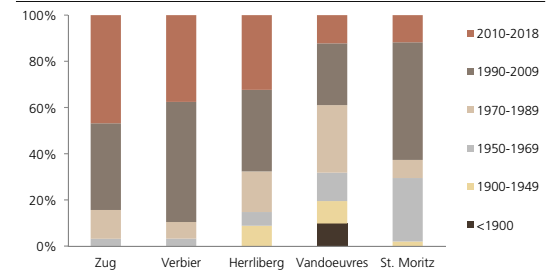
A high price and extreme scarcity are two determinants of luxury. For many years, this privilege was restricted to an exclusive social class. Palaces and castles are the luxury properties of days gone by: many of today's museums used to be nothing more than homes for the rich.

The wealthy began to make up a larger slice of the populace following the industrial revolution. Luxury brands began to emerge; 19th century mansions and manors were built. Around 10 percent of all luxury real estate in Zurich and in Geneva and its environs hark back to this era of construction. Other regions didn't see this segment emerge until much later – often shortly after a reduction in income tax rates that attracted high earners. For example, over 80 percent of all luxury real estate in Zug was built after 1990.

The differences between mountainous regions are similar. While nearly one-third of the housing stock in the traditional tourist resorts of St. Moritz and Gstaad dates back to the period before 1970, many luxury properties in Verbier and Crans-Montana weren't built until around the turn of the millennium.

Tradition or new construction

Percentage of luxury real estate stock from each construction period in selected municipalities



Source: UBS.

All a question of definition?

Luxury real estate can be defined by total price or square meter price. A total price definition tends to view large estates with expansive grounds as luxuries but ignores smaller properties that are still upmarket. A square meter price definition, in contrast, automatically adjusts for the size of the real estate.

Once the price definition has been chosen, the next step is to select a threshold. There are two different types of thresholds. An *absolute* threshold is a concrete price (CHF 4 million or CHF 20,000 per square meter, for example). A *relative* threshold starts at a certain percentage of the most expensive real estate (such as the most expensive 5 percent of real estate by total price or square meter price).

These thresholds produce different results for different municipalities. If the threshold is set at a square meter price of, say, CHF 20,000, it would cover 15 percent of the real estate in Kilchberg but only 4 percent of all homes in Zurich. In contrast, if you set the cut-off at the most expensive 5 percent of real estate, qualifying properties would start at CHF 24,000 per square meter in Kilchberg but only CHF 19,000 per square meter in Zurich.

Both absolute and relative definitions of luxury have their place. Whichever definition is used, the analytical consequences of this choice should be considered. *UBS Luxury Property Focus* uses a relative definition: we analyze the most expensive 5 percent of real estate advertised in each municipality based on the square meter price.

Luxury locations in Switzerland

In our analysis, we restrict ourselves to 25 Swiss municipalities in six regions (Lake Zurich, Central Switzerland, Lake Geneva, Oberengadin, Bernese and Valais Alps, and Ticino) that are viewed as luxury locations. Then, we examine the most expensive 5 percent of advertised real estate in terms of square meter price. The summary table is organized by region and then by price within each region. It is not a complete list of properties. Luxury real estate is peppered throughout other Swiss municipalities; a single neighborhood can be very upmarket even if the label doesn't apply to the entire town.

Luxury locations in Switzerland

By region and price (95th quantile of advertised prices)

Region	Rank 2019, by region	Luxury location	Market characteristics		Cost environment		Location characteristics	
			Price range**, in 1,000 CHF/m ²	Luxury proportion	Tax burden	Lump-sum taxation	Accessibility	Shopping / restaurants
Lake Zurich	1	Kilchberg	24-29	★★★★	★★★	×	★★★★	★★★★
	2	Wollerau (SZ)	24-32	★★★	★★★★	✓	★★★★	★★★
	3	Zollikon	22-27	★★	★★★	×	★★★★	★★★★
	4	Rüschlikon	22-27	★★	★★★	×	★★★★	★★★★
	5	Erlenbach	21-27	★★	★★★	×	★★★★	★★★★
	6	Küsnacht	21-29	★★	★★★	×	★★★★	★★★★
	7	Herrliberg	20-27	★★	★★★	×	★★★★	★★★★
	8	Zürich	19-51	★★	★★	×	★★★★	★★★★
Central Switzerland	1	Zug	21-29	★★	★★★★	✓	★★★★	★★★
	2	Meggen (LU)	18-23	★	★★★★	✓	★★★★	★★
Lake Geneva	1	Cologny	35-55*	★★★★	★★	✓	★★★★	★★★★
	2	Genève	24-55*	★★	★	✓	★★★★	★★★★
	3	Vandoeuvres	24-36	★★★	★	✓	★★★★	★★★★
	4	Collonge-Bellerive	23-55*	★★	★★	✓	★★★★	★★★
	5	Chêne-Bougeries	22-46	★★	★	✓	★★★★	★★★★
Oberengadin	1	St. Moritz	32-55*	★★★★	★★★★	✓	★★	★★★
	2	Pontresina	22-28	★★	★★★	✓	★★	★★★
Bernese & Valais Alps	1	Gstaad (BE)	34-55	★★★★	★	✓	★★★	★★
	2	Verbier (VS)	27-55*	★★★★	★★	✓	★★★	★
	3	Zermatt (VS)	19-29	★★	★★	✓	★	★★
	4	Crans-Montana (VS)	18-55*	★	★★	✓	★★★	★★
Ticino	1	Paradiso	20-46	★★	★★★	✓	★★★★	★★
	2	Morcote	19-34	★	★★	✓	★★★★	★★
	3	Ascona	18-36	★	★★	✓	★★★★	★★
	4	Collina d'Oro	16-32	★	★★★	✓	★★★★	★★

★★★★ Well above average ★★★ Above average ★★★★★ Average ★★ Below average ★ Well below average

* No top limit to prices.

** Price range: 95th quantile to top asking price, average 2016-2018.

Source: UBS

Market characteristics: luxury proportion

Market size depends on the stock of luxury real estate in each municipality. While all the municipalities in this study have a high proportion of high-priced real estate, the actual proportion varies significantly from one municipality to the next. For that reason, market size is defined as the portion of advertised properties in each municipality that have square meter prices above CHF 20,000.

Prices above this threshold are most common in Cologny on Lake Geneva, where they make up 20 percent of the market. The mountain towns of St. Moritz, Verbier and Gstaad also put in an impressive showing at 15 to 17 percent. Geneva, however, had the largest absolute number of high-priced properties.

Cost environment: tax burden and lump-sum taxation

Personal taxes affect disposable household income and vary from one municipality and canton to the next. Wollerau and Zug, for example, have the lowest municipal and cantonal personal tax rates for ultra-high earners. German-speaking Switzerland tends to have lower taxes than Ticino and French-speaking Switzerland. While Zurich and Geneva have a relatively high level of taxation, other luxury locations on Lake Zurich and Lake Geneva boast some of the lowest tax burdens in their cantons.

The availability of lump-sum taxes often plays a role for wealthy foreign residents of Switzerland. This type of tax is levied by all the cantons except Zurich, the two Basel cantons, Schaffhausen and Appenzell Ausserrhoden.

Location characteristics

Accessibility

Proximity to regional and international airports makes business and personal travel faster and easier. Municipalities near metropolitan regions and regional centers have better access to urban infrastructure and public goods. Accessibility is measured as travel time on private transportation.

The municipalities adjoining Zurich and Geneva are highly accessible. Travel times to Wollerau and to the municipalities on Lake Zug and Lake Lucerne are somewhat longer. Among the mountain municipalities, Crans-Montana, Gstaad and Verbier are relatively well accessible. Zermatt, in contrast, is less accessible.

Shopping / restaurants

A town's attractiveness is partly a function of the depth and diversity of its high-end leisure scene. That includes white-tablecloth restaurants and world-class shopping opportunities. This indicator is measured by the number of Michelin-starred restaurants and luxury boutiques within a half hour's drive by car; the calculation assigns smaller weights to more remote locations.

Zurich and Geneva evidently have the most qualifying restaurants and stores. Their leisure scenes benefit small towns located nearby, too. Among the mountain regions, Oberengadin has by far the best selection of shops and eateries. In Ticino, the municipalities clustered around Lugano tend to tap into its high-end leisure segment.



Top 5:

1. Cologny
2. St. Moritz
3. Verbier
4. Kilchberg
5. Gstaad



Top 5:

1. Zug / Wollerau
3. Meggen
4. St. Moritz
5. Kilchberg



Top 5:

1. Geneva
2. Zurich
3. Chêne-Bougeries
4. Vandoeuvres
5. Cologny



Top 5:

1. Zurich
2. Geneva
3. Rüschlikon
4. Vandoeuvres
5. Cologny

Luxury segment in global real estate markets

The highest square meter prices are found in Monaco and Hong Kong, according to Knight Frank. Each square meter costs around USD 63,000 in Monaco and about USD 46,000 in Hong Kong. New York, London and Singapore also have districts where prices are much higher than in Switzerland. Prices in Geneva's luxury segment are comparable to those in Paris. Among top winter destinations, St. Moritz has somewhat lower prices than Aspen, Colorado.

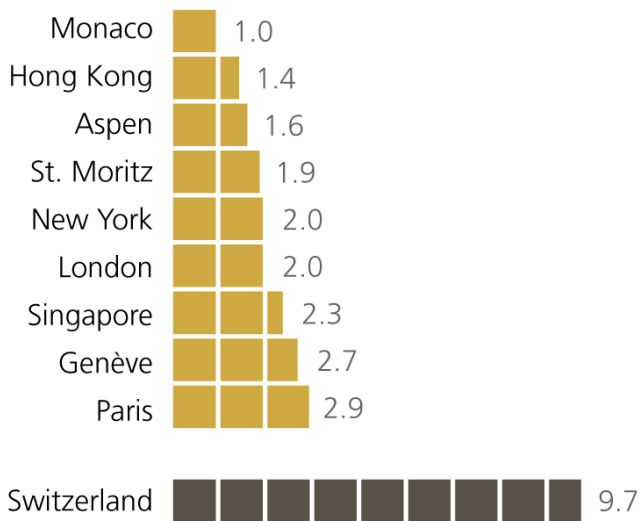
However, global luxury real estate markets are cooling off somewhat. The aggregate price increase was only 1.3 percent last year, according to Knight Frank – the lowest level since 2012. Growth has been so tepid because of stricter real estate market regulations (such as in Singapore) and higher financing costs amid rising global interest rates. Prices in some markets are also affected by local risks, such as the uncertainty associated with Brexit, which has depressed luxury real estate prices in Dublin and London.



Source: Zak Mauger

How much living space can you get for USD 63,000?

Living space per square meter that can be purchased for USD 63,000 in the luxury segment of selected cities, compared to the Swiss average for all owner-occupied homes



Source: Fahrländer Partner Raumentwicklung, Knight Frank, Zillow, UBS

List of sources

Variable	Sources
Real estate prices (current and past)	Fahrländer Partner Raumentwicklung, IAZI, Wüest Partner, UBS
Transactions	UBS
Gross national product	Swiss Federal Statistical Office (FSO)
Private household wealth	Swiss National Bank (SNB)
Share of luxury real estate stock	Fahrländer Partner Raumentwicklung, UBS
Tax burden	Swiss Federal Tax Administration (FTA)
Accessibility with private transport	TranSol, Federal Office of Civil Aviation, UBS
Shopping: luxury brands	Interbrand, websites of the luxury brands
Restaurants	Guide Michelin 2019
Real estate prices in select global destinations	Knight Frank, Zillow, UBS

Appendix

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.**

Generic 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. 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.

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 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 Mobiliários 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. **Austria:** This publication is not intended to constitute a public offer under Austrian law, but might be distributed for information purposes to clients of UBS Europe SE, Niederlassung Österreich, with place of business at Wächtergasse 1, A-1010 Wien. UBS Europe SE, Niederlassung Österreich is a branch of UBS Europe SE, a credit institution constituted under German law in the form of a Societas Europaea, duly authorized by the German Federal Financial Services Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht), to which this publication has not been submitted for approval. **Bahrain:** UBS is a Swiss bank not licensed, supervised or regulated in Bahrain by the Central Bank of Bahrain and does not undertake banking or investment business activities in Bahrain. Therefore, clients have no protection under local banking and investment services laws and regulations. **Brazil:** Distributed by UBS Brasil Administradora de Valores Mobiliários Ltda. and/or by UBS Consenso Investimentos Ltda., entities regulated by Comissão de Valores Mobiliários ("CVM"). **Canada:** In Canada, this publication is distributed to clients of UBS Wealth Management Canada by UBS Investment Management Canada Inc.. **China:** This report is prepared by UBS AG or its offshore subsidiary or affiliate (collectively as "UBS Offshore"). UBS Offshore is an entity incorporated out of China and is not licensed, supervised or regulated in China to carry out banking or securities business. The recipient should not contact the analysts or UBS Offshore which produced this report for advice as they are not licensed to provide securities investment advice in China. UBS Investment Bank (including Research) has its own wholly independent research and views which at times may vary from the views of UBS Global Wealth Management. This report shall not be regarded as providing specific securities related analysis. The recipient should not use this document or otherwise rely on any of the information contained in this report in making investment decisions and UBS takes no responsibility in this regard. **Czech Republic:** UBS is not a licensed bank in the Czech Republic and thus is not allowed to provide regulated banking or investment services in the Czech Republic. Please notify UBS if you do not wish to receive any further correspondence. **Denmark:** This publication is not intended to constitute a public offer under Danish law, but might be distributed by UBS Europe SE, Denmark Branch, filial af UBS Europe SE, with place of business at Sankt Annae Plads 13, 1250 Copenhagen, Denmark, registered with the Danish Commerce and Companies Agency, under the No. 38 17 24 33. UBS Europe SE, Denmark Branch, filial af UBS Europe SE is a branch of UBS Europe SE, a credit institution constituted under German law in the form of a Societas Europaea, duly authorized by the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin). UBS Europe SE, Denmark Branch, filial af UBS Europe SE is subject to the joint supervision of the BaFin, the central bank of Germany (Deutsche Bundesbank) and the Danish Financial Supervisory Authority (DFSA) (Finanstilsynet), to which this document has not been submitted for approval. **France:** This publication is distributed by UBS (France) S.A., French "société anonyme" with share capital of € 132.975.556, 69, boulevard Haussmann F-75008 Paris, R.C.S. Paris B 421 255 670, to its clients and prospects. UBS (France) S.A. is a provider of investment services duly authorized according to the terms of the "Code Monétaire et Financier", regulated by French banking and financial authorities as the "Autorité de Contrôle Prudentiel et de Résolution". **Germany:** This publication is distributed to clients of UBS Europe SE, with registered office at Bockenheimer Landstrasse 2-4, 60323 Frankfurt am Main, an entity supervised by the Bundesanstalt für Finanzdienstleistungsaufsicht. **Greece:** UBS Switzerland AG and its affiliates (UBS) are not licensed as a bank or financial institution under Greek legislation and do not provide banking and financial services in Greece. Consequently, UBS provides such services from branches outside of Greece, only. This document may not be considered as a public offering made or to be made to residents of Greece. **Hong Kong:** This publication is distributed to clients of UBS AG Hong Kong Branch by UBS AG Hong Kong Branch, a licensed bank under the Hong Kong Banking Ordinance and a registered institution under the Securities and Futures Ordinance. **India:** Distributed by UBS Securities India Private Ltd. 2/F, 2 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra (East), Mumbai (India) 400051. Phone: +912261556000. SEBI Registration Numbers: NSE (Capital Market Segment): INB230951431, NSE (F&O Segment) INF230951431, BSE (Capital Market Segment) INB010951437. **Indonesia, Malaysia, Philippines, Thailand:** This material was provided to you as a result of a request received by UBS from you and/or persons entitled to make the request on your behalf. Should you have received the material erroneously, UBS asks that you kindly destroy/delete it and inform UBS immediately. Any and all advice provided and/or trades executed by UBS pursuant to the material will only have been provided upon your specific request or executed upon your specific instructions, as the case may be, and may be deemed as such by UBS and you. The material may not have been reviewed, approved, disapproved or endorsed by any financial or regulatory authority in your jurisdiction. The relevant investments will be subject to restrictions and obligations on transfer as set forth in the material, and by receiving the material you undertake to comply fully with such restrictions and obligations. You should carefully study and ensure that you understand and exercise due care and discretion in considering your investment objective, risk appetite and personal circumstances against the risk of the investment. You are advised to seek independent professional advice in case of doubt. **Italy:** This publication is distributed to clients of UBS Europe SE, Succursale Italia, Via del Vecchio Politecnico, 3 - 20121 Milano, branch of UBS Europe SE, a German bank duly authorized by the "Bundesanstalt für Finanzdienstleistungsaufsicht" (BaFin) to the provision of financial services, supervised by both BaFin and "Consob". **Jersey:** AnchorUBS AG, Jersey Branch, is regulated and authorized by the Jersey Financial Services Commission for the conduct of banking, funds and investment business. Where services are provided from outside Jersey, they will not be covered by the Jersey regulatory regime. UBS AG, Jersey Branch is a branch of UBS AG a

Appendix

public company limited by shares, incorporated in Switzerland whose registered offices are at Aeschenvorstadt 1, CH-4051 Basel and Bahnhofstrasse 45, CH 8001 Zurich. UBS AG, Jersey Branch's principal place business is 1, IFC Jersey, St Helier, Jersey, JE2 3BX. **Luxembourg:** This publication is not intended to constitute a public offer under Luxembourg law, but might be distributed for information purposes to clients of UBS Europe SE, Luxembourg Branch, with place of business at 33A, Avenue J. F. Kennedy, L-1855 Luxembourg. UBS Europe SE, Luxembourg Branch is a branch of UBS Europe SE, a credit institution constituted under German law in the form of a Societas Europaea, duly authorized by the German Federal Financial Services Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin), and is subject to the joint supervision of BaFin, the central bank of Germany (Deutsche Bundesbank), as well as of the Luxembourg supervisory authority, the Commission de Surveillance du Secteur Financier (the "CSSF"), to which this publication has not been submitted for approval. **Mexico:** This information is distributed by UBS Asesores México, S.A. de C.V. ("UBS Asesores"), an affiliate of UBS Switzerland AG, incorporated as a non-independent investment advisor under the Securities Market Law due to the relation with a Foreign Bank. UBS Asesores is a regulated entity and it is subject to the supervision of the Mexican Banking and Securities Commission ("CNBV"), which exclusively regulates UBS Asesores regarding the rendering of portfolio management, as well as on securities investment advisory services, analysis and issuance of individual investment recommendations, so that the CNBV has no surveillance faculties nor may have over any other service provided by UBS Asesores. UBS Asesores is registered before CNBV under Registry number 30060. You are being provided with this UBS publication or material because you have indicated to UBS Asesores that you are a Sophisticated Qualified Investor located in Mexico. The compensation of the analyst(s) who prepared this report is determined exclusively by research management and senior management of any entity of UBS Group to which such analyst(s) render services. **Nigeria:** UBS Switzerland AG and its affiliates (UBS) are not licensed, supervised or regulated in Nigeria by the Central Bank of Nigeria (CBN) or the Nigerian Securities and Exchange Commission (SEC) and do not undertake banking or investment business activities in Nigeria. **Portugal:** UBS Switzerland AG is not licensed to conduct banking and financial activities in Portugal nor is UBS Switzerland AG supervised by the portuguese regulators (Bank of Portugal "Banco de Portugal" and Portuguese Securities Exchange Commission "Comissão do Mercado de Valores Mobiliários"). **Singapore:** This material was provided to you as a result of a request received by UBS from you and/or persons entitled to make the request on your behalf. Should you have received the material erroneously, UBS asks that you kindly destroy/delete it and inform UBS immediately. Clients of UBS AG Singapore branch are asked to please contact UBS AG Singapore branch, an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110) and a wholesale bank licensed under the Singapore Banking Act (Cap. 19) regulated by the Monetary Authority of Singapore, in respect of any matters arising from, or in connection with, the analysis or report. **Spain:** This publication is distributed to its clients by UBS Europe SE, Sucursal en España, with registered office at Calle María de Molina 4, C.P. 28006, Madrid, entity supervised by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and Banco de España, to which this publication has not been submitted for approval. Additionally it is authorized to provide investment services on securities and financial instruments, regarding which it is supervised by the Comisión Nacional del Mercado de Valores (CNMV) as well. UBS Europe SE, Sucursal en España is a branch of UBS Europe SE, a credit institution constituted under German law in the form of a Societas Europaea duly authorized and regulated by BaFin. **Sweden:** This publication is not intended to constitute a public offer under Swedish law, but might be distributed by UBS Europe SE, Sweden Bankfilial with place of business at Regeringsgatan 38, 11153 Stockholm, Sweden, registered with the Swedish Companies Registration Office under the Reg. No 516406-1011. UBS Europe SE, Sweden Bankfilial is a branch of UBS Europe SE, a credit institution constituted under German law in the form of a Societas Europaea, duly authorized by the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin). UBS Europe SE, Sweden Bankfilial is subject to the joint supervision of the BaFin, the central bank of Germany (Deutsche Bundesbank) and the Swedish financial supervisory authority (Finansinspektionen), to which this document has not been submitted for approval. **Taiwan:** This material is provided by UBS AG, Taipei Branch in accordance with laws of Taiwan, in agreement with or at the request of clients/prospects. **UAE:** UBS is not licensed in the UAE by the Central Bank of UAE or by the Securities & Commodities Authority. The UBS AG Dubai Branch is licensed in the DIFC by the Dubai Financial Services Authority as an authorised firm. **UK:** Approved by UBS Switzerland AG, authorised and regulated by the Financial Market Supervisory Authority in Switzerland. In the United Kingdom, UBS Switzerland AG is authorised by the Prudential Regulation Authority and 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. A member of the London Stock Exchange. This publication is distributed to retail clients of UBS London in the UK. Where products or services are provided from outside the UK, they will not be covered by the UK regulatory regime or the Financial Services Compensation Scheme.

Version 04/2019. CIO82652744

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