Swiss real estate market

Buying property in Switzerland – a guide for foreigners

Chief Investment Office GWM | **24 June 2019** 1:20 pm BST
Katharina Hofer, Economist, katharina.hofer@ubs.com; **Matthias Holzhey**, Economist, matthias.holzhey@ubs.com; **Maciej Skoczek**, CFA, CAIA, Economist, maciej.skoczek@ubs.com

- Legal provisions, financing regulations, and fees and taxes have to be considered when buying real estate in Switzerland.
- Home prices vary among municipalities depending on the distance to their centers and income taxes, among other factors.
- Buy-to-let investments are currently less attractive than in the past due to high vacancy rates and no expectations of rising prices.

Source: Anita Affentranger

Switzerland is viewed as one of the most desirable countries in the world to live in. Three Swiss cities rank in the Top 10 of the Mercer's Quality of Living Ranking this year. Solid legal and political institutions and stable economic conditions make the purchase of Swiss property attractive. This report addresses the most pressing questions of prospective real estate buyers.

Legal considerations

Right to buy property depends on the residence permit

Foreigners from EU and EFTA countries domiciled in the country have the same rights regarding property purchase as Swiss citizens. Also foreigners holding residence permit type C are allowed to obtain any type of property. Non-EU or non-EFTA citizens with residence permit type B are limited to purchases of their primary residence or a holiday home. Non-domiciled foreigners are restricted to purchases of second homes and holiday residences. While only domiciled EU or EFTA nationals and foreigners with a C permit can purchase multi-family homes, there are no restrictions on buying commercial space. Fig. 1 summarizes the legal framework dubbed "Lex Koller."

Fig.1: Who can buy property in Switzerland?
Overview of the regulation ("Lex Koller")

Origin	Resid. permit	First home*	Second home**	Holiday home	Multi-family house	Commerc. spaces
Persons **domiciled** in Switzerland						
EU/EFTA	C I B					
Non-EU/EFTA	C					
Non-EU/EFTA	B	(1)		(2)		
Persons **not domiciled** in Switzerland						
EU/EFTA			(3)	(2)		
Non-EU/EFTA			(3)	(2)		

allowed | permit required | not allowed

Source: UBS. * Incl. construction land, construction required to begin within a year; ** A dwelling which is not intended for permanent residence; (1) For owner-occupied home only; can be kept if domicile changes; (2) Quota of max. 1,500 in Switzerland; (3) Only if close connection exists, not to rent out; has to be sold within two years if not needed

No need to sell when relocating

When moving within the country or leaving it permanently, owners are not required to sell their previous residence. They can use it as a secondary or holiday residence or rent it to third parties, even when purchasing another first home. But buyers who had no intention of living in their first home permanently violate the law, especially if they change domicile for the sole purpose of being able to purchase more dwellings. If the property was purchased legally and should the owner die, his or her heirs (in accordance with Swiss Federal Law) do not require any additional permit to own the home or land.

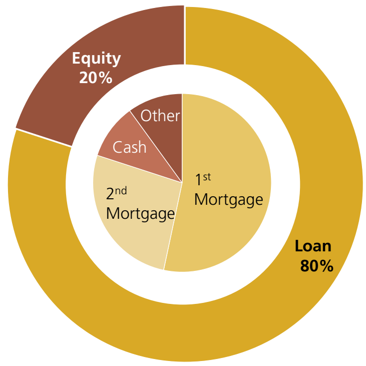
Financing

Mortgage is limited to 80% of property value

A home purchase in Switzerland is typically financed by mortgage and equity. Banks offer mortgages in Swiss francs that cover up to 80% of the property value. The first mortgage, often accounting for two-thirds of the value, usually has an indefinite repayment period. The second mortgage accounts for the remaining sum and has to be repaid linearly over 15 years. The repayment time for buyers expected to retire within the next 15 years can be shorter.

Equity is required to make up at least 20% of the property's collateral value. Half of it (corresponding to 10% of collateral value) has to be put down in cash (from a savings account, private pension plans like the Third Pillar, gifts, inheritance). The remaining half of equity can be arranged by using pension funds from the Second Pillar. Again, if a buyer is expected to retire within 15 years of purchase, the required equity share can exceed 20% of property value (Fig. 2).

Fig. 2: At least 20% of house value has to be financed with equity
Sources of financing, assuming the maximum possible loan amount, in %



Source: UBS

Gross income determines amount of mortgage loan

The lending volume is pegged to the borrower's gross income. The income of a partner can only be considered if both partners are jointly liable for the mortgage. As a rule of thumb, the total gross income should be at least three times the total annual imputed running costs of a property. The latter sum up to roughly 7% of collateral value and consists of: maintenance costs and amortization (about 1% of the collateral value respectively) and imputed interest rate payments (about 5% of the loan amount). This procedure ensures that debt does not exceed five to six times gross annual income. Exceptions are possible to a certain degree, depending on wealth and personal circumstances.

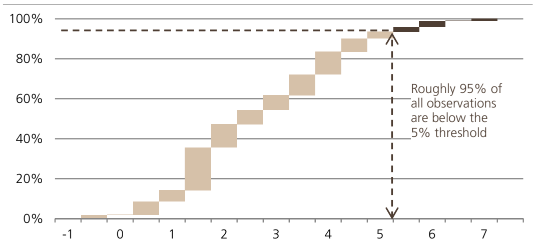
Short or long-term financing

Over the last 20 years, borrowers in the money market were nearly always better off than long-term fixed financed ones. Today, too, money market mortgages are the cheapest financing method, according to market interest rate expectations. But the added costs of long-term fixed interest rates compared to money market financing remain low compared to the long-term average.

The choice of the mortgage scheme should not only be based on interest rate expectations, but also on the borrower's risk appetite. The following points should be considered:

- *Can I afford far higher interest rate payments (interest rate risk)?*
  Despite the seemingly low probability of much higher interest rates (Fig. 3), even if they rise to 5%, housing costs should not exceed one-third of total gross income.
- *What are the costs if I need to terminate my mortgage agreement early (prepayment risk)?*
  The early termination of a mortgage contract can be expensive. The prepayment penalty depends on the reinvestment opportunities at the moment of termination. The penalty increases in periods of falling interest rates but decreases when interest rates are rising (in which case a borrower can even be rewarded for early termination).

Fig. 3: Rarely above 5%
Frequency distribution of bank rates 1907–2000 / LIBOR 2001–2016



Sources: SNB, UBS

- *What is the risk that I will have to renew the mortgage in a high interest rate period (refinancing risk)?*
  Renewing a mortgage contract when interest rates are relatively high leads to higher new mortgage costs. To minimize the risk of renewing his long-term mortgage at an unfavorable moment, a safety-oriented borrower should diversify his mortgage portfolio at different time intervals. The refinancing risk is less relevant for cost-oriented borrowers with short-term mortgages.

Taxes and fees

Notary and deed registering fees and property transfer taxes should not be underestimated. Total costs depend on the canton where the property is purchased.

Imputed rent as taxable income
The imputed rent is subject to taxation as part of the homeowner's income (called "Eigenmietwert" or "valeur locative"). It is derived from the hypothetical rent that owners would receive if he were to rent out his property. Conversely, the owner can deduct the mortgage interest payments and maintenance costs from taxable income. In the current low interest rate environment, the imputed rent exceeds potential deductions. Discussion in the Swiss parliament about abandoning the taxation of imputed rents is ongoing, but no final decision has been reached. Moreover, owners of Swiss properties are obliged to pay annual property taxes (only in some cantons).

Once the property is sold, two types of taxes accrue. Property gains taxes can be considerable if the land value appreciates during the holding period. As this tax aims to cut housing market speculation, it is highest for short holding periods and decreases with longer ones. For example, in the canton of Zurich a capital gain of 100,000 Swiss francs generates a tax liability of roughly 44,000 francs given a holding period of less than a year. The amount drops to 28,000 francs if the property has been held for five years, and to 15,000 after 20 years. Moreover, the taxation will be suspended if the proceeds of the sale of the owner-occupied property are used to buy a substitute owner-occupied property. The property transfer tax can amount to up to 3% of the purchase price and is paid at the transaction time by either buyer, seller or both, depending on the canton.

Prices: Where to buy

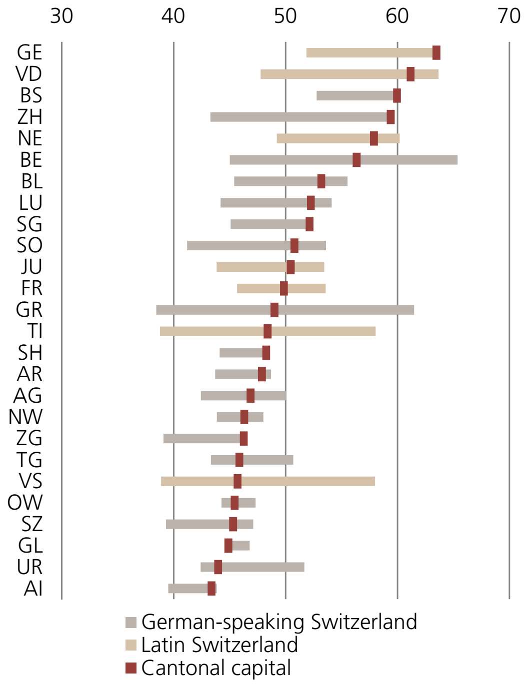
The highest prices for owner-occupied homes are paid in the Lake Zurich area, the Lake Geneva region and in the main tourist destinations in the Alps (Fig. 4). In those regions, prices of good-quality homes can easily reach 13,000 to 15,000 francs per square meter. In the luxury segment, prices often exceed 20,000 francs per square meter.

In the agglomerations of the larger cities, prices of good-quality homes hit 7,000 to 8,000 francs per square meter, depending on the accessibility to the next central business district and other factors. A rule of thumb says that prices fall 1% from those in the business district for every minute of commuting time it takes to reach it.

The income tax burden, health insurance premiums and property prices make up the bulk of location-related costs and vary greatly depending on the municipality. In the most expensive one they reach an average of almost 66,000 francs for condominiums, and are over 30% lower in the cheapest areas (Fig. 5). Property prices in low-tax municipalities tend to be higher than in high-tax ones – this may cancel out possible tax savings, especially for low-income households. For high-income households the income tax is the decisive portion of location-related costs, such that low-tax municipalities are the most attractive choices for such households.

Fig. 4: Comparison of location-related annual costs (user-costs of a condominium, taxes and health insurance)

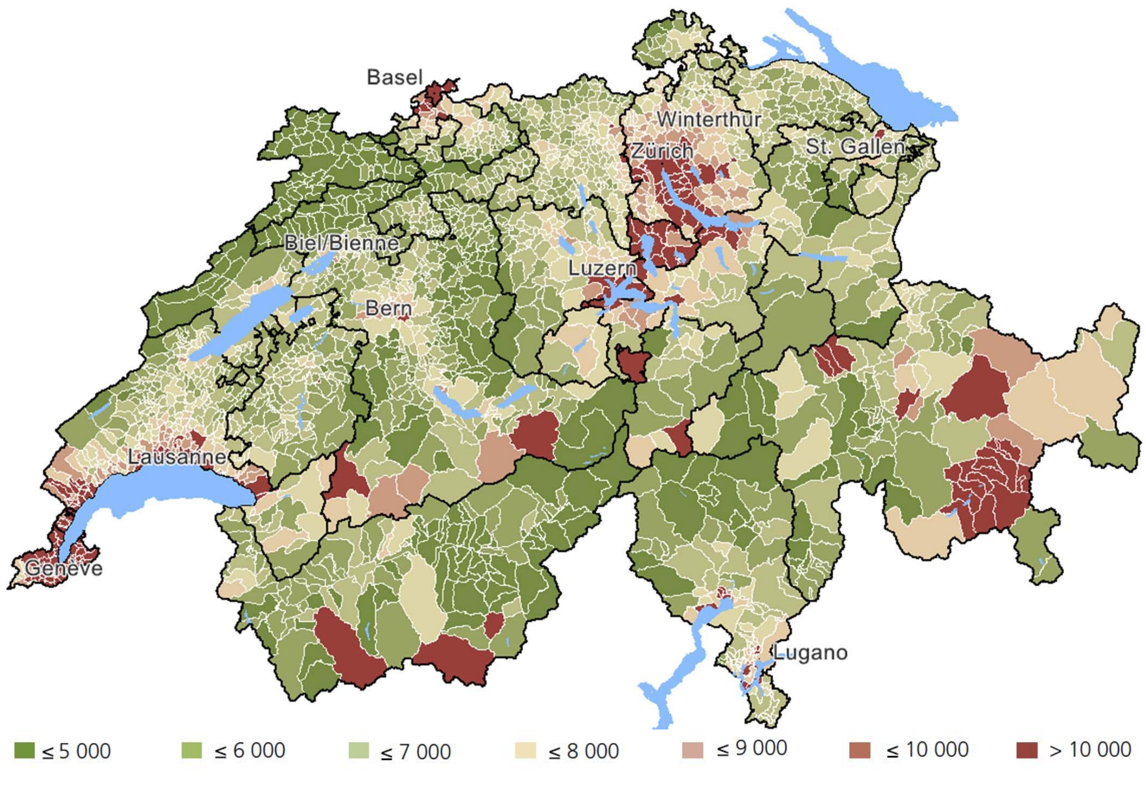
Bandwidth of all municipalities, in thousand CHF



Sources: FTA, FSO, Wüest Partner, UBS; Assumptions: gross income CHF 150,000, assets CHF 250,000, married (without children), condominium with 100m^2 of living space

Fig. 5: How much does a home cost in Switzerland?

Prices in francs per square meter of good-quality homes (70%-quantile), 2019Q1



Sources: Wüest Partner, UBS

Price outlook

Buying is cheaper than renting

Low mortgage rates underpin the owner-occupied housing market, supporting demand and prices. Currently, buying an owner-occupied property rather than renting an equivalent apartment is cheaper on average. We estimate that total savings add up to 20% of annual costs. For a flat of 100 square meters, they could amount to 4,000 francs per year (Fig. 6).

Because absolute purchase prices limit affordability, small apartments are in demand, and the relative willingness of buyers to pay for properties of lower quality remains high. So we expect another slight price rise of single-family homes while the prices of condominiums, which are exposed to greater competition as a result of falling rents, are likely to stagnate.

Prices at the peak of this cycle

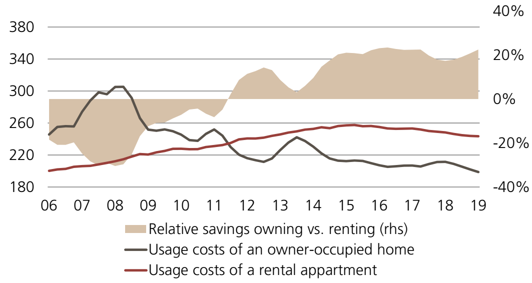
Real estate prices have been increasing in Switzerland for almost 20 years (Fig. 7). Further house price appreciation requires rising household incomes. The low interest rate environment is key to sustaining current prices. If mortgage rates increase by 1 to 2 percentage points, house prices would likely decline by 10% to 20%.

Best locations tend to be overvalued

The major economic hubs and their closest metropolitan areas were winners in the housing boom. But prices at the best locations are especially prone to exaggeration in boom periods and look inflated. Overall, given the small size of Switzerland, we do not expect a persistent divergence of centers and periphery – prices in peripheral regions have already been catching up since 2012.

Fig. 6: Low-usage costs of owner-occupied homes

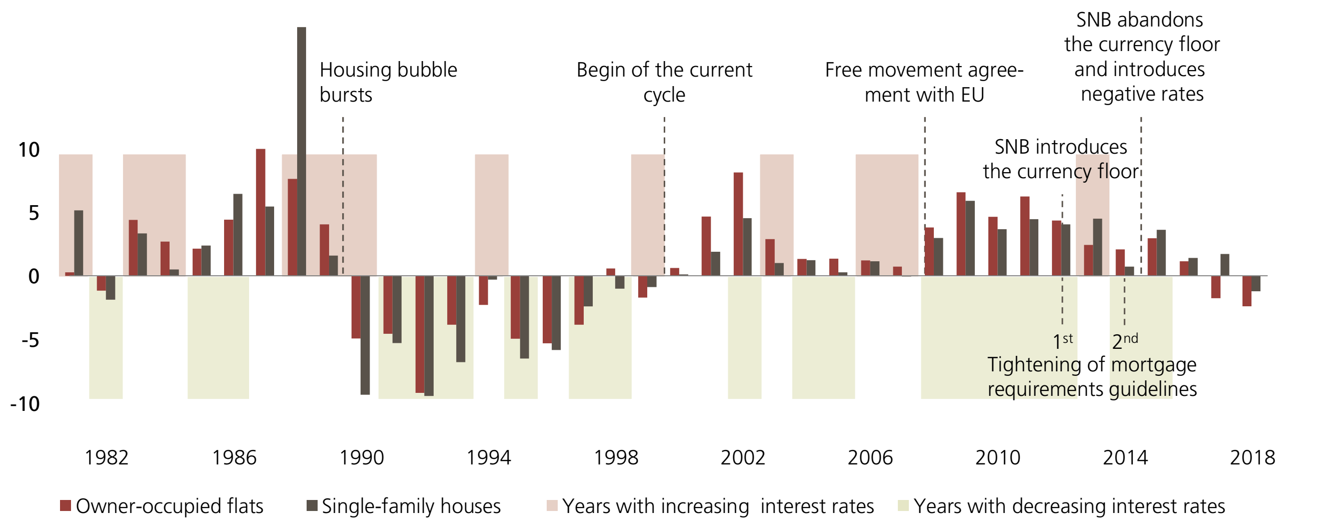
Nominal usage costs of an owner-occupied home* and a comparable rental apartment, smoothed in CHF per m^2 and year (lhs); difference in usage costs of an owner-occupied home and rental apartment per year in % (rhs)



Sources: Wüest Partner, UBS. *Mortgage interest payments on a long-term mortgage, provisions for maintenance and cost of imputed rental value tax

Fig. 7: Uncertainty before the turning point

Changes in inflation-adjusted offered prices, year-on-year, in %



Sources: Wüest Partner, SNB, UBS

Buy-to-let investments

Low financing costs and declining returns on other investments make buying condominiums to rent them out (buy-to-let) seem like an attractive option. But demand for buy-to-let investments has weakened over the last few quarters.

Rental income

Average initial yields in the largest Swiss municipalities will reach only 3%, in our view. After deducting allowances and costs, investors are left with roughly 2%, which is subject to local income tax. So income returns fall to 1.3%. The most attractive locations for buy-to-let investments are those with low vacancy rates in low-tax cantons. While returns are high on paper in peripheral regions, high vacancy rates and low rents depress returns there.

Outlook

In the past, capital returns made investing in condominiums particularly profitable as condominium prices rose 80% between 2005 and 2015. Buy-to-let investments are now likely to loose appeal on average. Vacancy rates are at historical highs and are expected to keep rising, making rental income less safe. Fiercer competition for tenants is depressing rents. Condominium prices have stagnated for the past three years, making future price returns unlikely – especially in the urban centers. For the rest of the year we expect asking rents to fall and condominium prices to stagnate.

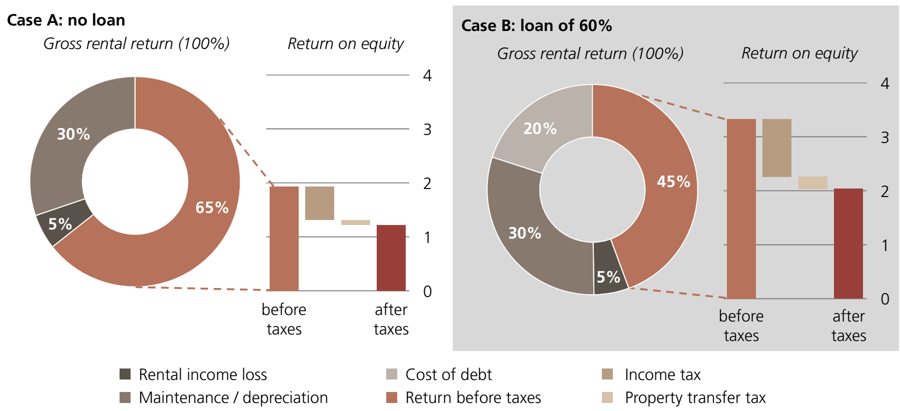
Financing

Buy-to-let investments are frequently financed with loans as higher leverage tends to increase returns. But to increase after-tax net return from 1.3% (without loans) to 2.2%, we estimate that a loan of 60% of the property value is required (Fig. 8). So high returns can only be achieved with relatively high loan-to-value ratios and accordingly high risk. New regulation for investment properties is currently on the way that will make high loan-to-value ratios even less attractive. While the details are not yet set in stone, the regulation is likely to take effect on 1 January, 2020.

Buy-to-let: 10 facts

(1) Concentration risk must be taken into consideration when purchasing an individual property.
(2) Invested capital is tied up on a long-term basis, as the sale of an apartment often takes time.
(3) Performance depends on real estate prices and rental income.
(4) Rental income not only depends on the property but on the attractiveness of the economic region.
(5) Sufficient liquidity must be put aside for unforeseen repair or renovation work.
(6) The financial burden increases with interest rates, especially in the event of high debt financing.
(7) Property management involves either the owner's own time or, if commissioned externally, added costs.
(8) Rental income is taxable after deducting financing and maintenance costs.
(9) For financing, using funds from occupational and restricted private retirement savings (pillars 2 and 3a) is not permitted.
(10) Condominium ownership may give rise to conflicts of interest in multi-party buildings.

Fig. 8: Low returns after costs
Example of returns, average of 150 largest municipalities (according to population size)



Source: UBS

UBS Real Estate Local Fact Sheets

Being new to a country can make choosing a place of residence a challenge. The *UBS Real Estate Local Fact Sheets* can make the decision easier by providing detailed information on real estate prices, population prospects, building activity, employment and taxation for all Swiss municipalities (Fig. 9 and Fig. 10).

Fig. 9: UBS Real Estate Local Fact Sheets
A comprehensive source of information for all Swiss municipalities

Source: UBS

Fig. 10: The housing markets in Swiss agglomerations – a comparison
25 biggest cities (according to population size) in Switzerland

City	Canton	Price[1] Level	Price[1] Change	Population[2] Level	Population[2] Change	Tax burden[3]
Zürich	ZH	15,000	2.1	409,000	1.5	17.1
Genève	GE	14,400	-0.1	201,000	1.0	21.5
Basel	BS	10,300	8.1	172,000	0.6	21.0
Lausanne	VD	11,300	2.6	139,000	1.2	22.3
Bern	BE	9,200	0.1	134,000	1.0	21.4
Winterthur	ZH	8,600	1.8	111,000	1.3	17.7
Luzern	LU	10,100	4.0	81,000	0.1	17.3
St. Gallen	SG	7,500	0.7	76,000	0.1	22.1
Lugano	TI	9,600	1.6	63,000	-0.1	18.3
Biel/Bienne	BE	6,300	4.5	55,000	0.6	21.9
Thun	BE	6,700	-1.1	44,000	0.3	22.2
Köniz	BE	7,500	3.0	42,000	1.2	21.3
La Chaux-de-Fonds	NE	4,400	1.5	39,000	-0.3	**24.4**
Fribourg	FR	6,600	2.4	39,000	0.2	21.6
Schaffhausen	SH	7,400	4.0	36,000	0.4	19.9
Vernier	GE	10,200	-3.4	35,000	0.6	21.9
Chur	GR	9,100	-1.4	35,000	0.5	18.3
Sion	VS	6,000	-1.5	35,000	1.0	21.3
Uster	ZH	9,700	10.6	35,000	1.1	16.5
Neuchâtel	NE	7,600	2.6	34,000	-0.2	23.4
Lancy	GE	10,600	0.3	32,000	1.1	21.6
Emmen	LU	7,000	-3.2	31,000	1.6	18.2
Yverdon-les-Bains	VD	8,000	1.5	30,000	0.8	22.1
Zug	ZG	13,200	0.2	30,000	1.8	**12.4**
Dübendorf	ZH	9,500	1.6	28,000	2.3	16.3

Source: UBS. [1] Price in CHF/m^2 for newly-built homes (70%-quantile) in 2019Q1 and annualized growth rate since 2016Q1; [2] Population in 2017 and annualized growth rate since 2014; [3] Single person with annual gross income of CHF 150,000

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 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. **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 regulatedAnchor 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 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,

Appendix

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 Commission 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