

### UBS Swiss Real Estate Bubble Index 3Q 2015

### 4 November 2015

### Translation:

### **Chief Investment Office WM**

Matthias Holzhey, economist, matthias.holzhey@ubs.com; Claudio Saputelli, economist, claudio.saputelli@ubs.com

- The UBS Swiss Real Estate Bubble Index remained practically unchanged in the third quarter at 1.38.
- Stagnant nominal home prices and declining investment demand for condominiums kept it in check.
- The positive effect of negative interest rates on home-buying demand appears to be fading.

The UBS Swiss Real Estate Bubble Index remained in the risk zone in the third guarter but moved only marginally guarter on guarter, up 0.01 point to 1.38. Stagnating nominal house prices and declining demand for buy-tolet investments kept it flat. Third-quarter mortgage loan volume rose 3.4% year on year, however, a relatively strong showing. Relative to incomes, growth remains well above the long-term average.

Stagnant house prices signal that the market is calming down, but in view of current disinflation and nominal household income falling 0.3% (measured in terms of economic output), the imbalances have not vet narrowed. Adjusted for inflation (or the lack of it), house prices have still risen 3.1% year on year.

#### Methodology

The UBS Swiss Real Estate Bubble Index comprises six sub-indices that track: the relationship between purchase and rental prices, the relationship between house prices and household income, the relationship between house prices and inflation, the relationship between mortgage debt and income, the relationship between construction and gross domestic product (GDP) and the proportion of credit applications by UBS clients for residential property not intended for owner occupancy. The UBS Swiss Real Estate Bubble Index is calculated as the average of trend-adjusted and standardized indicators weighted using a principal component analysis. The index level shows the deviation in standard deviations from the average, which is normalized to zero.

The index value is categorized into one of five levels: slump (below -1), balance (between -1 and 0), boom (between 0 and 1), risk (between 1 and 2) and bubble (above 2).

**UBS Swiss Real Estate Bubble Index** 



### Index performance

|      |           | Index |
|------|-----------|-------|
| 2012 | Quarter 1 | 0.66  |
|      | Quarter 2 | 0.70  |
|      | Quarter 3 | 0.81  |
|      | Quarter 4 | 0.88  |
| 2013 | Quarter 1 | 0.96  |
|      | Quarter 2 | 1.03  |
|      | Quarter 3 | 1.03  |
|      | Quarter 4 | 1.07  |
| 2014 | Quarter 1 | 1.03  |
|      | Quarter 2 | 1.06  |
|      | Quarter 3 | 1.16  |
|      | Quarter 4 | 1.20  |
| 2015 | Quarter 1 | 1.26  |
|      | Quarter 2 | 1.37  |
|      | Quarter 3 | 1.38  |
|      |           |       |

Source: UBS

The index values may be slightly adjusted each quarter as a result of data revisions and varying weights of the sub-indices.

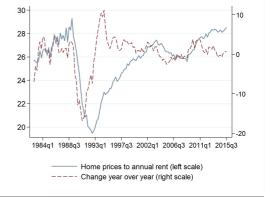
### Sub-indices of the UBS Swiss Real Estate Bubble Index

### Owner-occupied house prices relative to annual rents

Purchase prices were unchanged quarter on quarter, while rents declined 0.6% as vacancies rose. The purchase price-to-rent ratio rose slightly to 28.5, and remains well above the long-term equilibrium of about 25.

### Home prices relative to annual rent

Level and change year-over-year in percent



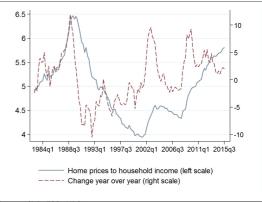
Source: SNB; UBS

### Owner-occupied house prices relative to household income

House prices were unchanged in the 3rd quarter 2015 while household income declined slightly. Measured in terms of economic output, household incomes dropped by a nominal 0.3%. So it still took 5.8 annual household incomes to purchase a home in the medium price segment. The long-term average is five annual incomes.

### Home prices relative to household income

Level and change year-over-year in percent



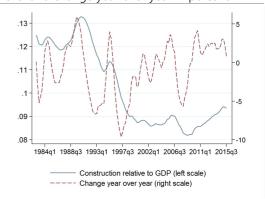
Source: SNB; FSO; UBS

### Construction relative to gross domestic product (GDP)

Nominal construction investment fell slightly, though relative to economic output there was little change. Relative to gross domestic product, construction investment remains under 10% with no significant upward trend. The long-term average value lies at 10.3%.

### Construction relative to gross domestic product

Level and change year-over-year in percent



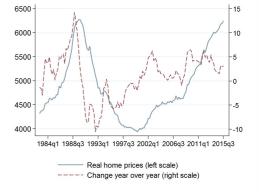
Source: seco; FSO; UBS

### Owner-occupied home prices relative to consumer prices

Nominal house prices, as a mean value of prices for single-family homes and condominiums, were unchanged relative to the previous quarter. Year-on-year prices are 1.6% higher and, adjusted for inflation, they have risen a considerable 3.1%. If real prices continue to increase, they will exceed the peaks of the 1990 real estate bubble by year end.

### Home prices relative to consumer prices

Real home prices (CHF/m²) and change year-overyear in percent



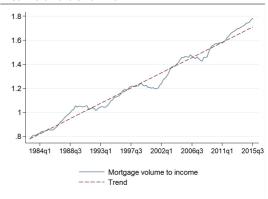
Source: SNB; FSO; UBS

### Mortgage volume relative to disposable household income

Mortgage loan volume growth slowed slightly again in the last three months. But the indicator climbed again in the quarter on declining nominal economic output. However, household debt is still rising at a faster pace – 3.4% – than it was before negative interest rates were introduced.

### Mortgage volume relative to income

Mortgage debt of private households relative to income and trend line



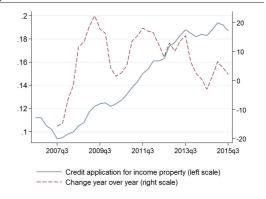
Source: SNB; FSO; UBS

### UBS loan applications for real estate intended for leasing

The number of loan applications for non-owner-occupied real estate fell, as 18.7% of all credit applications were for properties not intended for self-occupancy. Investment demand for condominiums remains high, due chiefly to negative interest rates.

## Credit applications for residential property not intended for self-occupancy

Share of total and change year-over-year in percent



Source: UBS

### Regions with risk potential for the residential real estate market

The regional risk map remained unchanged in the third quarter 2015.

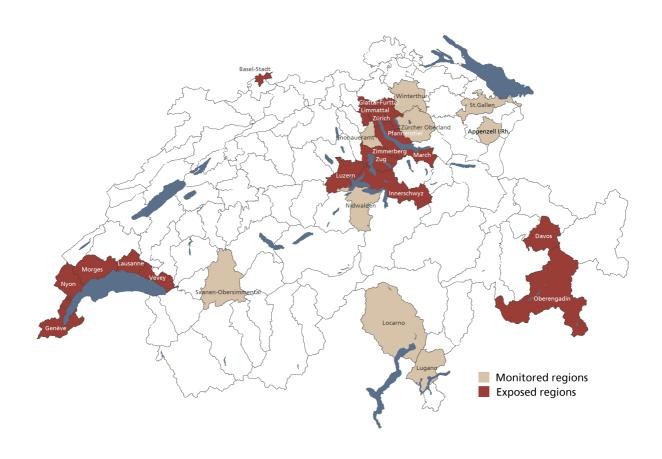
### Methodology

Our selection of exposed regions is tied to the level of the UBS Swiss Real Estate Bubble Index and is based on a multi-level selection process utilizing regional population and property price data.

| Exposed regions | Monitored regions    |
|-----------------|----------------------|
| Zürich          | Knonaueramt          |
| Glattal-Furttal | Zürcher Oberland     |
| Limmattal       | Winterthur           |
| Zimmerberg      | Saanen-Obersimmental |
| Pfannenstiel    | Nidwalden            |
| Innerschwyz     | St.Gallen            |
| March           | Locarno              |
| Zug             | Lugano               |
| Luzern          | Appenzell I.Rh.      |
| Basel-Stadt     |                      |
| Davos           |                      |
| Oberengadin     |                      |
| Lausanne        |                      |
| Morges          |                      |
| Nyon            |                      |
| Vevey           |                      |
| Genève          | ·                    |

### Regional risk map - 3Q 2015

Exposed and monitored regions for the Swiss residential real estate market



Source: UBS

### **Appendix**

UBS Chief Investment Office WM's investment views are prepared and published by Wealth Management and Retail & Corporate or Wealth Management Americas, Business Divisions of UBS AG (regulated by FINMA in Switzerland), its subsidiary or affiliate ("UBS"). In certain countries UBS AG is referred to as UBS SA. This material 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 motive specific product. 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 material 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 disclosure relating to UBS). All information and opinions as wella as any prices indicated are current as of the date of this report, and are subject to change without notice. The market prices provided in performance charts and tables are closing prices on the respective principal stock exchange. The analysis contained herein is based on numerous assumptions. Different assumptions could result in materially different results. 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. 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 five the issuer, the insuer, the investment instrument itself or to/for any company, commercially or financially affiliated to such issuers. At any time, investment and the read analysis of the investment decisions (inclu

in this report; and copies of any past reports on this topic; are available upon request from your client advisor. **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. **Australia:** 1) Clients of UBS Wealth Management Australia Ltd: This notice is issued by UBS Wealth Management Australia Ltd ABN 50 005 311 937 (Holder of Australian Financial Services Licence No. 231127): This Document is general in nature and does not constitute personal financial product advice. The Document does not take into account any person's objectives, financial situation or needs, and a recipient should obtain advice from an independent financial adviser and consider any relevant offer or disclosure document prior to making any investment decisions. 2) Clients of UBS AG: This notice is issued by UBS AG ABN 47 088 129 613 (Holder of Australian Financial Services Licence No 231087): This Document is issued and distributed by UBS AG. This is the case despite anything to the contrary in the Document. The Document is intended for use only by "Wholesale Clients" as defined in section 761G ("Wholesale Clients") of the Corporations Act 2001 (Cth) ("Corporations Act"). In no circumstances may the Document be made available by UBS AG to a "Retail Client" as defined in section 761G of the Corporations Act. UBS AG's research services are only available to Wholesale Clients. The Document is general information only and does not take into account any person's investment objectives, financial and taxation situation or particular needs. Bahamas: This publication is distributed to private clients of UBS (Bahamas) Ltd and is not intended for distribution to persons designated as a Bahamian citizen or resident under the Bahamas Exchange Control Regulations. **Bahrain:** UBS AG 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. Belgium: This publication is not intended to constitute a public offering or a comparable solicitation under Belgian law, but might be made available for information purposes to clients of UBS Belgium, branch of UBS (Luxembourg) SA, registered with the National Bank of Belgian and authorized by the "Financial Services and Markets Authority", to which this publication has not been submitted for approval. **Brazil:** Prepared by UBS Brasil Administradora de Valores Mobiliários Ltda, entity 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.. Dubai: Research is issued by UBS AG Dubai Branch within the DIFC, is intended for professional clients only and is not for onward distribution within the United Arab Emirates. **France:** This publication is distributed by UBS (France) S.A., French "société anonyme" with share capital of € 125.726.944, 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:** The issuer under German Law is UBS Deutschland AG, Bockenheimer Landstrasse 2-4, 60306 Frankfurt am Main. UBS Deutschland AG is authorized and regulated by the "Bundesanstalt für Finanzdienstleistungsaufsicht". **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: This research or publication is not intended and not prepared for purposes of public offering of securities under the Indonesian Capital Market Law and its implementing regulations. Securities mentioned in this material have not been, and will not be, registered under the Indonesian Capital Market Law and Regulations. Israel: UBS AG is registered as a Foreign Dealer in cooperation with UBS Wealth Management Israel Ltd, a wholly owned UBS subsidiary. UBS Wealth Management Israel Ltd is a licensed Portfolio Manager which engages also in Investment Marketing and is regulated by the Israel Securities Authority. This publication shall not replace any investment advice and/or investment marketing provided by a relevant licensee which is adjusted to your personal needs. **Italy:** This publication is distributed to the clients of UBS (Italia) S.p.A., via del vecchio politecnico 3, Milano, an Italian bank duly authorized by Bank of Italy to the provision of financial services and supervised by "Consob" and Bank of Italy. UBS Italia has not participated in the production of the publication and of the research on investments and financial analysis herein contained. **Jersey:** UBS AG, Jersey Branch, is regulated and authorized by the Jersey Financial Services Commission for the conduct of banking, funds and investment business. **Luxembourg:** This publication is not intended to constitute a public offer under Luxembourg law, but might be made available for information purposes to clients of UBS (Luxembourg) S.A., 33A avenue J.F. Kennedy, L-1855 Luxembourg, R.C.S. Luxembourg B 11142, a regulated bank under the supervision of the "Commission de Surveillance du Secteur Financier" (CSSF), to which this publication has not been submitted for approval. Mexico: This document has been distributed by UBS Asesores México, S.A. de C.V., a company which is not part of UBS Grupo Financiero, S.A. de C.V. or of any other Mexican financial group and whose obligations are not guaranteed by any third party. UBS Asesores México, S.A. de C.V. does not guarantee any yield whatsoever. **Netherlands:** This publication is not intended to constitute a public offering or a comparable solicitation under Dutch law, but might be made available for information purposes to clients of UBS Bank (Netherlands) B.V., a regulated bank under the supervision of "De Nederlansche Bank" (DNB) and "Autoriteit Financiële Markten" (AFM), to which this publication has not been submitted for approval. **New Zealand:** This notice is distributed to clients of UBS Wealth Management Australia Limited ABN 50 005 311 937 (Holder of Australian Financial Services Licence No. 231127), Chifley Tower, 2 Chifley Square, Sydney, New South Wales, NSW 2000, by UBS Wealth Management Australia Ltd. You are being provided with this UBS publication or material because you have indicated to UBs that you are a client certified as a wholesale investor and/or an eligible investor ("Certified Client") located in New Zealand. This publication or material is not intended for clients who are not Certified Clients ("Non-Certified Clients"), and if you are a Non-Certified Client you must not rely on this publication or material. If despite this warning you nevertheless rely on this publication or material, you hereby (i) acknowledge that you may not rely on the content of this publication or material and that any recommendations or opinions in this publication or material are not made or provided to you, and (ii) to the maximum extent permitted by law (a) indemnify UBS and its associates or related entities (and their respective directors, officers, agents and advisers (each a "Relevant Person") for any loss, damage, liability or claim any of them may incur or suffer as a result of, or in connection with, your unauthorised reliance on this publication or material and (b) waive any rights or remedies you may have against any Relevant Person for (or in respect of) any loss, damage, liability or claim you may incur or suffer as a result of, or in connection with, your unauthorised reliance on this publication or material. Saudi Arabia: This publication has been approved by UBS Saudi Árabia (a subsidiary of UBS AG), a Saudi Arabian closed joint stock company incorporated in the Kingdom of Saudi Arabia under commercial register number 1010257812 having its registered office at Tatweer Towers, P.O. Box 75724, Riyadh 11588, Kingdom of Saudi Arabia. UBS Saudi Arabia is authorized and regulated by the Capital Market Authority of Saudi Arabia. **Singapore:** 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 clients of UBS Bank, S.A. by UBS Bank, S.A., a bank registered with the Bank of Spain. Taiwan: This material is provided in accordance with laws of Taiwan, in agreement with or at the request of clients. **UAE**: This research report is not intended to constitute an offer, sale or delivery of shares or other securities under the laws of the United Arab Emirates (UAE). The contents of this report have not been and will not be approved by any authority in the United Arab Emirates including the UAE Central Bank or Dubai Financial Authorities, the Emirates Securities and Commodities Authority, the Dubai Financial Market, the Abu Dhabi Securities market or any other UAE exchange. **UK:** Approved by UBS AG, authorised and regulated by the Financial Market Supervisory Authority in Switzerland. In the United Kingdom, UBS 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 and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority are available from us on request. A member of the London Stock Exchange. This publication is distributed to private 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. USA: This document is not intended for distribution into the US and / or to US persons. UBS Securities LLC is a subsidiary of UBS AG and an affiliate of UBS Financial Services Inc., UBS Financial Services Inc. is a subsidiary of UBS AG