

# Swiss Finance Institute Roundups

## Real Estate—How Strong Are the Foundations?

### Editorial



Real estate is an asset class of its own. Its local nature, low liquidity, and heterogeneity are just a few of its key characteristics. This SFI Roundup provides a thorough review of today's Swiss and international real estate market. Academic and industry experts discuss the trends ahead: how will the pandemic redraw the lines in commercial and residential real estate? What will be the impact of interest rates on prices? How will climate change policies influence the market? And how will financial intermediaries be affected by future trends in real estate?

We wish you an enjoyable read.

A handwritten signature in blue ink, appearing to read 'F. Degeorge', with a horizontal line underneath.

**Prof. François Degeorge**  
Managing Director

# Contributors

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Amit Goyal is SFI Senior Chair and Professor of Finance at the University of Lausanne. Professor Goyal's research has been published in the top finance journals worldwide and has also been featured in the international press. His primary research interests lie in portfolio management and asset pricing, from the perspective of portfolio managers and pension funds. He holds a PhD in Finance from the University of California, Los Angeles.

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Stephan Lüthi is Head of Real Estate for Swisscanto Invest by Zürcher Kantonalbank. Previously, he was Head of Acquisition and Project Development at BVK, Switzerland's largest pension fund, and a Member of the Executive Board at Wincasa. His primary interests lie in actively seeking solutions to reach climate targets for CO<sub>2</sub> emissions by 2050, while protecting investors' best interests. He holds an MSc in Real Estate from the University of Zurich.

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Alberto Plazzi is an SFI Faculty Member and Professor of Finance at the Università della Svizzera italiana. Professor Plazzi is a regular speaker at finance conferences worldwide, and his research has been published in top academic journals. His primary research interests lie in portfolio management and asset classes. He holds a PhD in Finance from the University of California, Los Angeles.

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Claudio Saputelli is Chief Investment Officer for Global Real Estate at UBS Global Wealth Management. He initiated the launch of the publication "UBS Real Estate Focus" and co-developed the "UBS Swiss Real Estate Bubble Index" and the "UBS Global Real Estate Bubble Index." He regularly participates in debates and exchanges with the media. He holds an MSc in Economics from the University of Zurich.

**Donato Scognamiglio**

Donato Scognamiglio is Chief Executive Officer and Partner at IAZI, which has been developing real estate valuation models in Switzerland for more than 25 years. He sits on the Board of Directors of the Swiss Pfandbriefbank. He is also an SFI Adjunct Professor and Professor for Real Estate at the University of Bern. He holds a PhD in Economics from the University of Bern.

# Facts and Figures

## How does real estate differ from other classes of assets, such as stocks or bonds?

► **S. Lüthi:** The term "real estate" already suggests one of the most important differences: Real estate is locally bound and, therefore, is not as easily exchanged or traded as the other asset classes are, even in a securitized form. Each property is fundamentally unique, which makes the real estate asset class one that is characterized by great heterogeneity. Location is by no means the only distinguishing feature of a property, although it is one of the most important; architectural style, construction material, and the use to which the property has been put are all factors that impact its value.

► **A. Goyal:** In my view, real estate falls somewhere in between stocks and bonds. Commercial real estate, for example, provides a steady stream of rental income, which resembles a bond's coupon payment, as well as the possibility for appreciation of the property itself, which is similar to what stocks offer. From a portfolio management perspective, real estate is a valuable asset to hold, as it increases the investor's overall diversification.

► **L. Küng:** From a homeowner's view, property is not only an investment, but also a product of consumption. Real estate does share many of the characteristics of stocks and bonds, in particular with respect to price swings and the risk premiums of equity. Nonetheless, one dimension where real estate differs considerably from stocks and bonds is the general absence of possibilities to short the market or to mitigate price risks.

## What have been the recent trends in the international real estate market?

► **L. Küng:** Real estate prices worldwide have gone up significantly over the past 10+ years, but we can observe the same trend in the equity market. I believe the key driver behind this rise is the lowering of interest rates, which has mechanically pushed both real estate and equity prices up, and has pushed investors to go one step further, in terms of risk, when hunting for yield.

► **C. Saputelli:** We also need to distinguish between the periods before and after COVID-19. Right before the coronavirus crisis, the broader market offered few prospects for direct investment in real estate. Low or negative interest rates on safe investments had channeled disproportionately large capital flows into the real estate market, such that the achievable yields had dropped dramatically over recent years. For this reason, niche real estate investments received increasing attention, since they offered higher yields. Niche markets that could be derived from the global megatrends—such as micro-apartments, housing for students and for the elderly, short-term tourist rentals, and co-working, self-storage, and logistics spaces—were particularly popular with investors. The COVID-19 pandemic put a lot of pressure, from various directions, on these niche investments. For example, student housing practically lost all its tenants overnight, while logistics spaces largely benefited, due to the strong increase in online trade. With respect to classic real estate, lockdowns and work-from-home rules led to a drop in rental income for business spaces. In today's complex environment, investors are again increasing their focus on the classic residential segment of the real estate market.

## And in the Swiss real estate market?

► **S. Lüthi:** The Swiss real estate market was obviously affected by COVID-19 and the lockdowns. The commercial sector was characterized by requests for rent reduction, as well as by a drop in the demand for space, while the residential sector remained more stable. The non-food, leisure, and tourism sectors were—on average—the ones which suffered most from the pandemic, while the industrial and, above all, logistics sectors remained robust. We can also observe a shift in demand, across all sectors, from urban centers to peripheral areas. As of today, it is still difficult to assess the long term structural changes which will result.

► **L. Küng:** Data show that the house-price-to-rent ratio (which is similar to the price-to-dividend ratio in the equity market) and the house-price-to-median-income ratio have both gone up over the past 15 years, suggesting the possible creation of a price bubble. We must nonetheless look at these ratios with a critical eye, as data limitations are one of the key characteristics of the real estate market. Market heterogeneity is widespread, and we typically don't observe the rental and sales prices of the same house simultaneously.

### How do interest rates impact real estate prices?

▶ **A. Goyal:** Data indeed confirm that low interest rates lead to an increase in the demand for real estate and, therefore, an increase in the price of property. We should nonetheless be cautious at jumping to conclusions, as observing high real estate prices does not mean that there is a price bubble. As always, the question of pricing is a relative one, independent of interest rates being high or low.

▶ **D. Scognamiglio:** Interest rates can have a major impact on real estate prices, in particular when we use the cash flow valuation method to estimate the price of property. Originally it was expected that the impact of low interest rates would be minimal. The overall situation of larger leverage and greater risk-taking is one of the negative spill-over effects of central banks pursuing low interest rates. In my view, it is very clear that today's low interest rates have led to significant inflation in asset prices, but as was just noted, this observation does not necessarily imply that there is a bubble.

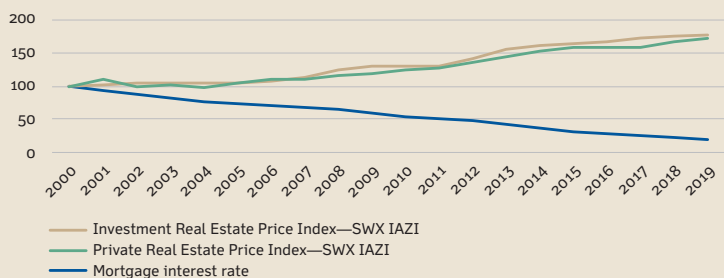
▶ **S. Lüthi:** The current low interest rate environment is naturally driving up real estate prices. Yet despite falling interest rates, the yield spread between investment properties and bonds is still at a record high. The owner-occupied housing sector is also benefiting from the ongoing interest rate developments: Attractive borrowing costs have consequently boosted demand and have led to a steady upward trend in house prices. However, investors' willingness to pay for investment properties has not developed evenly in recent times. Demand has typically focused on properties with supposedly "secure" rental cash flows, such as multi-family homes and commercial properties in prime locations. In contrast, the willingness to pay high prices for non-core commercial properties is not where it used to be some years ago.

### The real estate market is characterized by low liquidity and few opportunities for price hedging. What does this imply?

▶ **C. Saputelli:** These two characteristics imply that investors who decide to buy property directly should expect to hold on to it for a period of at least five years. Specifically, the lower the initial yield, or the higher the price of an investment property, the longer the holding period needs to be, as the bulk of the accumulated revenue will only be paid out in the future.

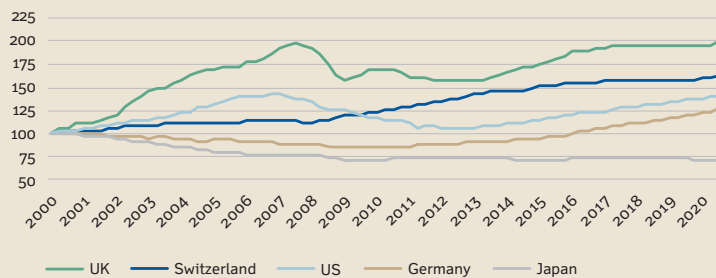
▶ **A. Plazzi:** Due to the low liquidity which typically prevails in the real estate market, as well as the quantity and quality of data available, we have limited oversight of what the current market price is and in which direction it is heading. The direct consequence is that it takes considerably more time to learn if a transaction was a good one or a bad one, in comparison to trades on a publicly listed market. Because of the virtual nonexistence of hedging contracts, and the fact that it's difficult to break down individual properties, we have very limited means of diluting an investor's price exposure. The combination of these factors means that real estate investments are typically risky.

**Mortgage rates and real estate prices**  
Switzerland (2000 = 100)



Source: IAZI and SNB

**International house prices**  
Real prices in local currency (Q1 2000 = 100)



Source: Mack and Martínez-García (2011)



### Where are the greatest risks of a bubble in the real estate market?

► **C. Saputelli:** In the current environment, residential real estate poses a substantial tail risk, given its very high dependence on low interest rates. My team has published the "UBS Global Real Estate Bubble Index" for several years now, analyzing residential property prices in 25 major cities around the world. Bubbles typically appear when a decoupling between incomes and rents occurs, when a disproportionate volume of lending is being granted, or when excessive construction work is taking place. According to our latest index, Munich and Frankfurt are, globally, the cities with the most distinct risk of a bubble. Risk is also elevated in Toronto, Hong Kong, Paris, and Amsterdam. Zurich—compared to the previous year—is a new addition to the bubble risk zone.

► **A. Plazzi:** Commercial and residential real estate carry different risk characteristics, based on whether they represent solely a financial investment or also a product of consumption. High leverage possibilities and the relaxation of lending standards, as recently observed in the US, mechanically lead to the risk of amplifying any potential shocks which may occur.

### How do shocks ripple through the real estate market? And how different is this from other financial markets?

► **D. Scognamiglio:** Because of the low liquidity of the real estate market, shocks move far more slowly than in the stock market. Real estate market corrections begin to appear when individual households are unable to meet their financial obligations, typically due to increases in interest rates, and are forced to sell their homes. Large real estate owners and institutional investors are more immune to changes in interest rates, as they are able to smooth out the valuation of their various properties through balance sheet dressing; they also rely far less on credit than do individual households. In a nutshell, the rules of this market are not the same for all participants.

► **C. Saputelli:** The credit cycle is the most important potential shock to the real estate market. First, investing in real estate always requires a large amount of capital, and investors generally need external financing. Second, debt financing typically occurs over a long period of time, which implies a potentially elevated refinancing risk in the future: Interest rates may rise, and lenders may not be willing or able to refinance a loan when it matures. In other asset classes, such as stocks and bonds, investors can apply leverage; but the vast majority of these investments are sourced with cash, which is why they are less dependent than real estate is on the credit cycle.

# Today's Market Structure— Challenges and Opportunities

**Current estimates predict that the worldwide population will increase by nearly 30% within the next 30 years. Similar estimates forecast an increase of more than 15% for Switzerland. How will these staggering increases impact the real estate market?**

► **D. Scognamiglio:** Demographics will have a major impact on the real estate market worldwide, and Switzerland is no exception here. Population is the client of the real estate market, both directly in the residential market and indirectly in the industrial and commercial markets. The Swiss market has generally been in balance over the past few decades, with the number of new home buyers remaining roughly equal to the number of new housing opportunities built. With the country's strict limitations on land use, real estate prices in Switzerland are likely to stay high.

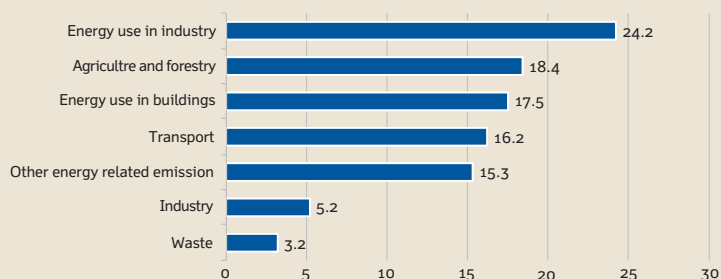
**The commercial and residential real estate sectors are responsible for a combined 17.5% of all global greenhouse gas emissions. How will initiatives to curb such emissions impact the real estate market, and how should they be designed?**

► **L. Küng:** The real estate market has a huge potential to play in terms of curbing greenhouse gas emissions, in comparison to, for example, agriculture and forestry. The technologies to lower greenhouse gas emissions in the real estate sector already exist (i.e., insulation, solar power panels, energy storage solutions, etc.). I'm quite optimistic that the real estate sector will adopt the appropriate technology and adapt rapidly. Government intervention, with respect to mandatory disclosures on emissions, could help accelerate this transition. Another nice point here is that the transition is not concentrated in the hands of a few players, but is largely in the hands of billions of homeowners.

► **S. Lüthi:** In Switzerland, the real estate sector is estimated to be responsible for around a third of all CO<sub>2</sub> emissions. In my view, only properties that can demonstrate a clear strategy with respect to sustainability will remain, in the medium term, within the portfolios of institutional investors. Reducing CO<sub>2</sub> emissions will likely become the norm of good real estate management. Legislators have already laid down many requirements in this regard. However, the density of legal requirements and regulations in this area will have to increase considerably in the future, if the Swiss government wants to achieve the goal it set in accordance with the Paris Climate Agreement. Future initiatives and laws should be designed to incentivize CO<sub>2</sub>-efficient construction and renovation, as incentives are much more effective than regulations or bans. Investing in energy-efficient measures should be promoted, and tax relief granted. In addition, access to subsidies must be considerably simplified, as the application process is often cumbersome and involves long waiting times.

► **A. Plazzi:** Data indeed show that energy efficiency labels have a clear impact on real estate prices. Public mechanisms, in particular taxes and subsidies, need to push harder to accelerate the energy transition of the real estate sector. I can imagine a dynamic tax system, similar to the one that exists regarding car emissions, for example, where owners of properties whose energy efficiency falls below some threshold would face an additional tax. Such a system would launch a race among property owners to invest in energy-efficient solutions, as the market's average efficiency would mechanically improve over time.

**Global greenhouse gas emissions by sector**  
Billions of tons of CO<sub>2</sub> equivalents, 2016



Source: Climate Watch and the World Resources Institute

**Ongoing research shows that the COVID-19 pandemic has reshuffled the cards in both the commercial and residential real estate sectors. What have been the most striking changes, and will these effects last in the long run?**

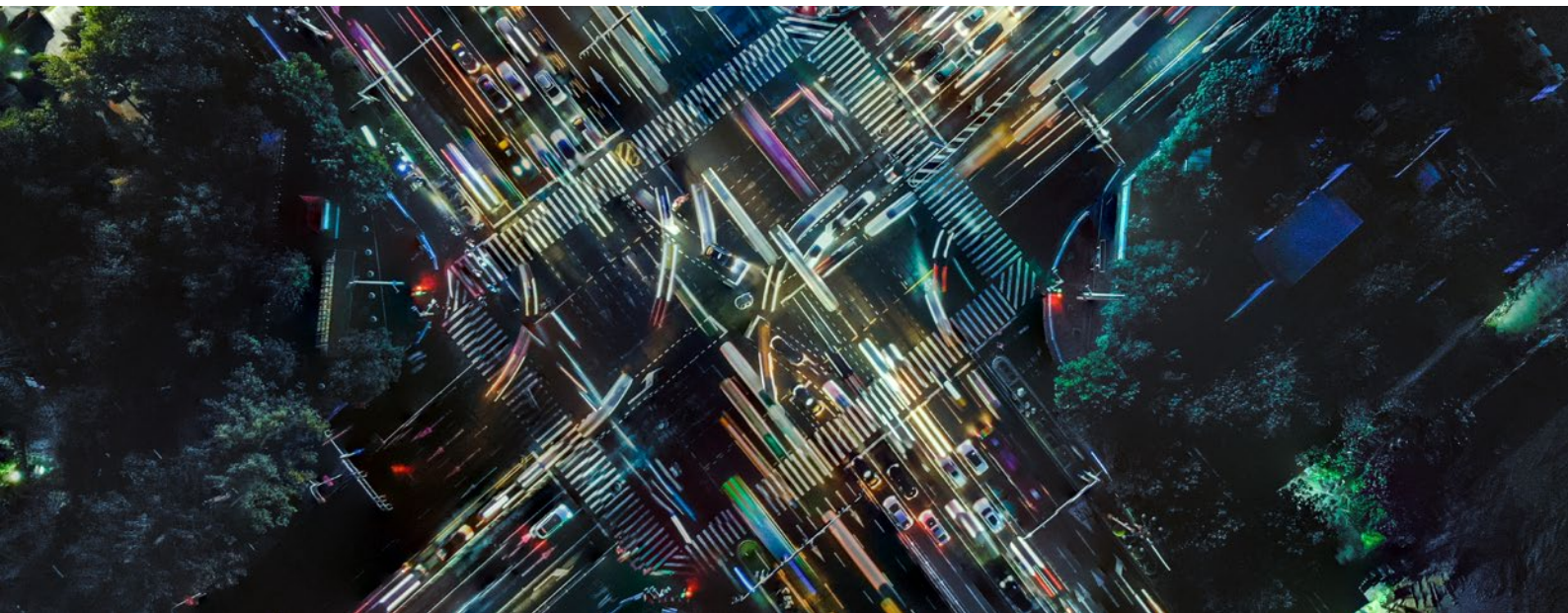
► **C. Saputelli:** Working from home has become part of everyday life for more and more people. The number of employed workers who will regularly work from home may well more than double within the next five years. First, this means that the need for additional rooms at home will increase, compared to the current living situation. However, with respect to affordability, houses with more living space will primarily be available outside the city centers. Second, working from home tends to distribute the demand for homes more evenly over geographic regions and away from the city centers; this may increase the competition for homes in pre-existing residential communities. At the same time that the housing market sees a shift in demand, business spaces may well see a loss of demand momentum. As a larger share of a business's employees live in the periphery and, at times, work from home, having a well-connected office space at a central location will become all the more important. In contrast, there will be less demand for office space in less attractive locations. Working from home will also increase the need for office space that can be rented by a business for short periods to smooth out peaks in demand. Finally, the quality of the office space will have to compete with workplaces located in cozy homes. For offices to remain attractive as locations for social exchange in the future, their interior decor will need to be improved: The concepts of the open-plan office and of "hot desking" will need to be reexamined.

► **D. Scognamiglio:** The pandemic raises the question of what a city is, in today's connected world. As that question is not one quickly answered, the residential and commercial real estate markets will likely take four to five years to come back into balance again. From an asset-pricing perspective, valuation models typically require three parameters: income, outcome, and a discount rate. The novelty of the current crisis is that the income parameter has been impacted; historically, the parameter affected has always been the discount rate.

**Do technological innovations in finance have the possibility of disrupting the real estate market?**

► **A. Plazzi:** I don't believe that FinTech can disrupt the real estate market per se. Its tangible brick-and-mortar dimension is here to stay, and experience shows that the possibility of developing financial instruments, such as options and futures, for real estate are largely limited. But I do believe that FinTech will nonetheless impact some parts of the real estate market.

► **C. Saputelli:** New technologies are penetrating everyday life. Technological developments have reached basically all sectors of the economy and have, at times, shaken them up. Each sector is facing the challenge of efficiently and successfully arriving in a digital future. The real estate sector is no exception here, and in my opinion it is also a major beneficiary of the digital transformation. Accordingly, the trend is that FinTech is supporting the digital transformation of the real estate market by increasing transparency, for instance, and lowering transaction costs.



# Banks

## How does today's negative interest rate environment influence the way banks and investors assess risk?

▶ **A. Goyal:** In comparison to what can be observed internationally, the lending standards of Swiss banks are very conservative, when dealing with households, both in terms of required down payments and simulations of monthly costs. What is more opaque, in my view, is the behavior of Swiss banks on the international market.

▶ **C. Saputelli:** In a negative interest rate environment, the risk of payment default becomes very low, as borrowers are easily able to meet their financial obligations. However, as asset values are driven up by these negative interest rates, the risk of impairment increases. Today's environment supplies a strong incentive to increase lending, making risk controls increasingly important if banks are going to be able to withstand a potential systemic crisis driven by a possible increase in interest rates in the future.

▶ **S. Lüthi:** The low interest rates, combined with falling margins across the board, could indeed tempt individual players to increase their risk-taking behavior. In the real estate market, I have repeatedly observed that the current low interest rates are tempting some investors to take even higher risks to increase, or simply just to maintain, the yield level in their real estate portfolios. Asset managers need to have a lot of self-discipline, as well as having adequately calibrated investment models, to take the specificities of today's environment into account.

## Have past regulatory decisions made real estate financing safer? Or not? What are the costs and benefits here?

▶ **C. Saputelli:** The implementation of self-regulated banking standards has restricted aggressive mortgage-lending practices and weakened competition at the risky end of the business. The changes in the capital maintenance rules, including capital buffers, have made the banking sector as a whole more resilient—however, this has led to a slight increase in mortgage costs.

▶ **S. Lüthi:** The question to ask is, actually, "Made safer for whom?" Regulators, legislators, and central bankers aim to keep the entire financial system stable and to avoid any form of collapse. For example, the subprime crisis in the US showed us what happens when credit policies get completely out of hand. In the case of Switzerland, we can debate the usefulness of such market interventions as equity backing, requirements for the borrower's equity capital, or the imputed interest rate of 5% when calculating affordability. If the latter measure were dropped, for example, the demand for residential property would strongly increase, further fueling the already expensive market in this sector. Overheating, or maybe even the formation of a price bubble, could well occur. Based on the lessons learned and measures taken during the Swiss real estate crisis of the 1990s—in which Swiss banks wrote off around CHF 50 billion worth of mortgages—the system has proved largely robust to various types of shocks over the past 20 years. In a nutshell, regulations and interventions limit the volume of credit, which manifests itself, among other things, in a low homeownership rate among the Swiss population.

## Real estate crashes have, throughout history, brought banks to their knees. How would the banking sector react to a, for example, 10% drop in prices?

▶ **C. Saputelli:** A drop of that size would not have a meaningful impact on banks' balance sheets. Given the sharp price increases over the past 10 years, loan-to-value ratios are far below any critical values. However, banks would likely become more reluctant when it comes to "exception to policy" lending, as new mortgages are the ones most exposed to price swings.

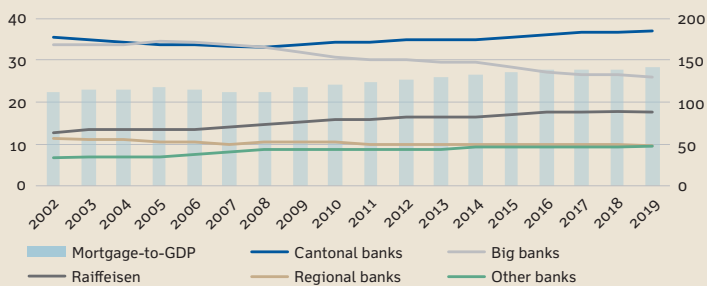
▶ **D. Scognamiglio:** A drop in market prices below 20% would not even be a problem for banks, so long as lenders' financial obligations are met; this price drop would solely impact the equity of households. Problems would only start to arise if banks were required, by regulators, to impose a "margin call" on households to cover the drop in their homes' collateral value. The true risks to banks are fire sales, which could happen, as in the late 1980s, if too many people lose their jobs and are unable to meet their financial obligations.



### On what should banks keep their eyes? On commercial real estate? Or residential real estate?

► **C. Saputelli:** Historically, commercial real estate has been the main source of trouble for banks. The financing of developers, in particular, is the principal source of write-downs. In the current environment, however, residential real estate poses a substantial tail risk, given the very high dependence on zero/negative interest rates. Keeping an eye on sufficiently high amortization rates will be important in the long run.

**Market share of mortgage lending activity per bank group and mortgage-to-GDP ratio (right side axis)**  
Switzerland, %



Source: FSO and SNB

### What does tomorrow's mortgage market look like, and how should banks adapt to it?

► **A. Plazzi:** Interest rates and mortgage rates alike are not expected to increase in the short run, nor in the medium run. With such low rates, margins tend to be razor thin, meaning that the scope for competition should not be fierce. Banks should focus on maintaining good relationships with their existing clients and monitoring their credit risk.

► **C. Saputelli:** Banks will remain the main source of mortgage financing. But platform-based lending will increase its market share over time. In a negative interest rate environment, banks will not want to compete with direct investors on long term mortgage rates. Hence, banks will focus on short term mortgages and on more complex and more risky financings, which are not demanded by institutional investors.

► **D. Scognamiglio:** The basics of the mortgage market will remain largely unchanged, as long as regulatory and tax rules remain unchanged. What is bound to change is an increase in transparency about interest rates, as well as an increase in the number of players in the market. The consequences in the long run will be a more competitive market with lower margins for financial players. Banks must grow if they wish to survive.

# Institutional Investors

## What are the pros and cons of direct and indirect real estate investments?

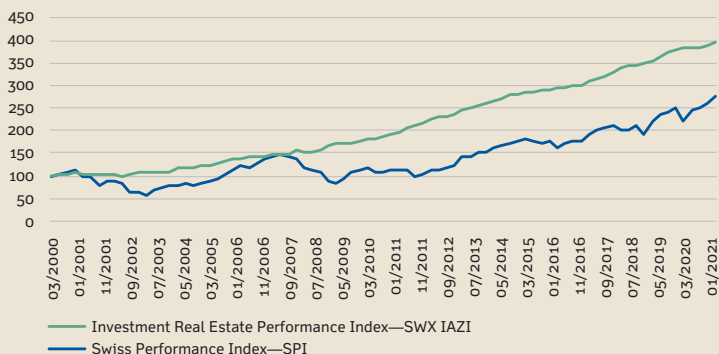
► **S. Lüthi:** Investors who perceive equity investments as too risky typically turn their focus toward real estate. The historically low refinancing rates and the high availability of mortgages have, for the moment, made direct real estate investments more attractive than indirect solutions. As is any type of investment, direct real estate investments are made up of three components: return, liquidity, and risk. If direct real estate investments promise a higher return than, for example, indirect real estate investments, then investors must also accept disadvantages when it comes to liquidity and risk. Direct investments require the time-consuming process of finding the property to buy and also bear significant transaction costs. In addition, the costs of maintenance, operation, and loss of rent are usually massively underestimated and can rapidly reduce the initially projected return. In short, the lack of know-how, coupled with the imperfections in the real estate market, can become a yield trap. Direct real estate investments usually tie up a lot of equity and ultimately become a cluster risk in the portfolio of private investors. An alternative here is to invest indirectly in real estate through an investment fund, typically called a Real Estate Investment Trust (REIT), that owns and operates real estate and puts investors and investment opportunities together. Shares of broadly diversified REITS can be acquired even with a small financial outlay and are usually traded on the public market, which makes them highly liquid investment solutions.

## How does exposure to real estate through debt financing differ from other forms of debt financing?

► **C. Saputelli:** In comparison to stock or bond investments, investors can apply a higher leverage rate to real estate investments, as the relevant real estate values are set by external appraisers and are, therefore, very stable over time. Such high leverage is possible, as tenants typically sign multi-year contracts and the risk of a tenant's bankruptcy can be efficiently mitigated by the fact that property is being leased to multiple companies and households.

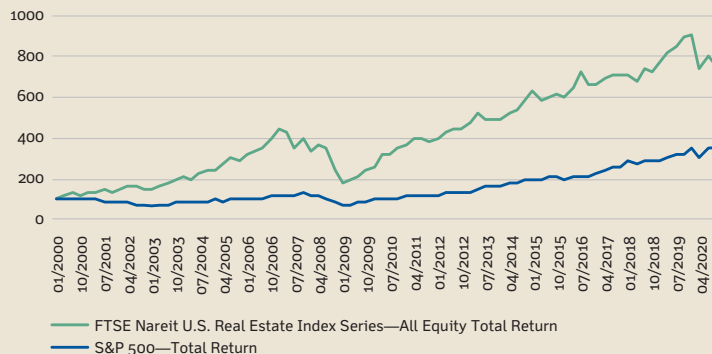
► **S. Lüthi:** Debt financing in the real estate sector normally takes place via mortgages. The mortgage security basically reduces the default loss ratio for the lender, as well as for the financial system as a whole, as long as the loan-to-value ratio reflects the situation honestly. From a general perspective, the effect of leverage on real estate does not play out differently than it does for equity or other asset classes. In the case of Switzerland, there are hardly any excesses to be observed, with respect to institutional investors. Regulators also have a say here, as they define the maximum debt financing ratio allowed; in the case of real estate funds, for example, this ratio is capped at one-third. Interestingly, many institutional investors do not want high leverage ratios. Last year, Swisscanto conducted a survey among investors, especially pension funds. The result was clear: In principle, investors do not want any strategic leverage in their products.

**Total return for equity and real estate**  
Switzerland (Q1 2000 = 100)



Source: IAZI and SIX

**Total return for equity and real estate**  
US (Q1 2000 = 100)



Source: FTSE Russell and CRSP

### With regards to factor-based asset allocation, how can we characterize the real estate factor?

▶ **A. Plazzi:** In theory, achieving real estate exposure is of interest in terms of portfolio diversification, as real estate has a relatively low correlation with equity and bonds. In practice, however, such exposure is difficult to achieve, as the publicly listed firms active in the real estate business—the REITS—are limited in number, in geographical diversification, and in size, compared to the actual real estate market. For example, the US equity REIT market as a whole owns more than USD 2.5 trillion in real estate assets, a figure in line with the current market capitalization of Apple, today's largest publicly listed firm.

▶ **A. Goyal:** Identifying the real estate factor is indeed complex, as it requires the existence of publicly listed real estate funds and also the existence of futures and indices built around these funds. Currently REITS exist virtually only in the US market; creating such financial vehicles may be a good business opportunity for fund managers in Europe and Switzerland, and also a good diversification opportunity for institutional investors.

### Institutional investors, and in particular pension funds, typically have to fulfill given investment quotas. Today's financial environment, characterized by low interest rates and high real estate prices, is radically different from the one which prevailed 15 years ago. How have their portfolios evolved over time?

▶ **S. Lüthi:** The portfolios of Swiss pension funds have changed significantly in recent years. Both real estate and equity ratios have increased steadily—at the expense of bonds and debt. The share of directly and indirectly held real estate in multi-asset portfolios is currently moving toward the regulatory upper limit of 25%. Larger pension funds rely considerably on directly held real estate, while smaller ones rely mainly on indirect real estate investments. In terms of international diversification, Swiss pension funds focus primarily on domestic real estate investments; this "home bias" phenomenon is typical of Swiss investors.

▶ **A. Goyal:** Today's environment is very challenging for pension fund managers, as the aggregate market return is low. As interest rates dropped during the past decades, the price of bonds increased, and so did the overall rate of return of pension funds. But looking forward, this inverse correlation between interest rates and bond prices cannot operate further, as the bulk of these bonds have either matured or been renewed at today's market conditions.

▶ **A. Plazzi:** From a general perspective, diversification is key when constructing a portfolio. Such diversification should occur not only across assets, but also across industries and geographic areas. In the specific case of real estate, we need to account for the age of the property, as increases in environmental scrutiny regarding the real estate sector will likely push the price of inefficient properties—which are numerous in Switzerland—downward. This gap, in terms of energy efficiency, between old and recent buildings, will generate a major price discount for old buildings and could ultimately pose a threat for pension funds.

**The internal rate of return of global real estate funds has been healthy over the past decade. Is this going to change? And, if yes, how?**

► **D. Scognamiglio:** This high internal rate of return concerns the return on the equity part of the fund and, therefore, we also need to include leverage and risk dimensions in our analysis. A main component of this high return figure is the increase in value, which has not been realized or cashed-in, and not the capitalization rate. As long as property values continue going up, as has been the case for the past 20 years, these figures will remain high.

► **C. Saputelli:** This positive internal rate of return has indeed been largely influenced by the increased proportion of capital gains, as a contribution to the total investment return. We expect capital gains to be more muted in the near future, as the bulk of the capitalization rate compression has happened in the last five years or so. As a result, the total return is now more dependent on the income portion of the investment.

**How do institutional investors manage the return, liquidity, and risk dimensions of their real estate investments?**

► **S. Lüthi:** Observing the capital market issues of the last few quarters, we can see that institutional investors have a clear preference for net asset value-based indirect real estate investments, either through REITs or through non-listed real estate funds. This preference is mainly due to the three dimensions mentioned above: return, liquidity, and risk. Indirect investments are generally more liquid than direct ones, exhibit lower volatility, and are weakly correlated to listed equity products; they also continue to offer a solid return.

► **A. Goyal:** The lack of liquidity is clearly a characteristic of the real estate market, particularly of the direct portion of the market, which suggests that there should be a financial premium for this risk. Knowing whether that risk premium is adequately priced remains a largely unanswered question; only time will tell.

**What can we say regarding the overall combination of these different factors?**

► **A. Goyal:** Given where we stand today, in terms of interest rates, internal rates of return, and demographics, we can say that institutional investors and pension funds will face profound challenges for many decades. The cure here is for people to continue working longer, contribute more to their pension funds, or learn to live with less—all three being solutions many people are not willing to accept.



# Households

## Real estate is typically the largest asset a household owns. What does this mean in terms of portfolio diversification?

▶ **A. Goyal:** Households are typically unaware of the low degree of diversification in their investment portfolios. Nonetheless, moderate price swings in real estate should have little impact on a homeowner's overall well-being. The fact that Swiss households are not required to amortize their loans in full allows them to invest their wealth in additional assets, providing them with the potential benefits of diversification.

▶ **C. Saputelli:** The asset allocation of a first-home buyer is typically illiquid and not highly diversified, given today's high house prices. So, to build wealth over time, households should indeed focus on accumulating liquid assets to increase the diversification and financial flexibility of their investment portfolios. There's no reason homeowners should refrain from further real estate investment in their financial asset allocation, as the correlation between local house prices and broad diversified real estate is generally low. But households should minimize investing in additional real estate in the same economic area as their home.

▶ **L. Küng:** Overall, investing primarily in real estate means that the household's financial risk is poorly diversified and, worse, that this risk is highly leveraged. US data show that real estate prices are positively correlated with wages, so when the economy is booming, rents go up and so do wages. This correlation implies that renting provides a natural hedge to changes in economic output – a

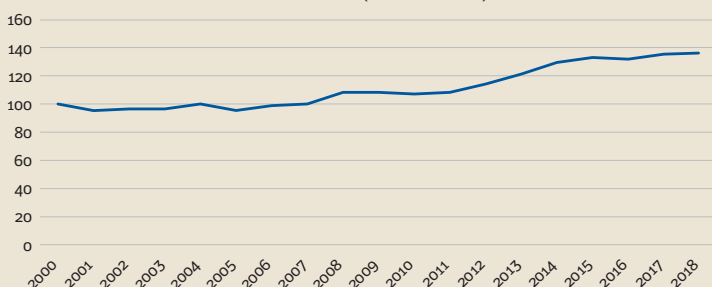
hedge which homeowners give up. Interestingly, financial advisors tend to omit the hedging benefit of renting when they analyze the financial risk individuals are facing. Whether these US results apply to the Swiss market remains an open question. Nonetheless, many people believe that the risk in real estate is similar to that of government bonds, which is shockingly wrong. Real estate prices have dropped in the past and will drop again in the future.

## The price of real estate in Switzerland is among the highest in the world, as is the amount of household debt. What should we make of these facts?

▶ **A. Goyal:** Swiss real estate prices are indeed high in an international perspective, but this does not mean they are overpriced nor that there is a boom. When you compare house prices to salaries, you can see that real estate prices in Geneva and Zurich are in line with those of Stockholm and Toronto, for example.

▶ **D. Scognamiglio:** Although Swiss households are deeply in debt, they do possess significant assets. Due to the Swiss tax system, the enticement is great for households to amortize their mortgage debt only to a given extent, and at the same time invest the savings in broadly diversified financial markets. It is equally worth considering that, due to the strong increase in debt in recent years, dependence on interest rates has also increased. A strong and inadequately anticipated increase in interest rates could put many households under financial pressure. The Swiss tax system would cushion this effect, however, to the extent that we can deduct the interest on a mortgage from our taxable income.

Private real estate price to median equivalized disposable household income  
Switzerland (2000 = 100)



Source: IAZI and SFO



**Residential prices have steadily increased worldwide over the past 20 years. Are households ready to face a, for example, 10% price drop?**

▶ **C. Saputelli:** When you consider that home prices in the past 20 years have more than doubled in many places, a price correction of just 10% in the current low interest-rate environment is absolutely manageable. Recently, targeted state regulations were implemented to break the upward trend of prices, particularly in the overheated property markets. The resulting price reductions, in the low double-digit percentage range, did not bring any negative effects to the impacted regions, however. On the contrary, for many households homes became somewhat more affordable.

**What would be your word of caution for households?**

▶ **L. Küng:** Owning real estate obviously has large benefits, but it also comes with risks, which people tend to minimize. Households need to run the numbers and go beyond the figures of rent and interest payments; they need to be disciplined, when it comes to effective maintenance, and also consider debt amortization beyond the minimum that is required. Buying property is both a financial decision and an emotional one, which means that we need to view real estate decisions from multiple perspectives.

▶ **D. Scognamiglio:** Households who own their own homes already own enough property. Households need to thoroughly think through investing in real estate, as property is more expensive than they may at first think, and maintenance costs are currently higher than interest rates. Maintenance is key when hedonic price indexes control for quality: Prices which go up for new and properly maintained properties do not necessarily go up for old and poorly maintained ones.



## Swiss Finance Institute

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Created in 2006 as a public-private partnership, SFI is a common initiative of the Swiss finance industry, leading Swiss universities, and the Swiss Confederation.

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This publication was printed on sustainable "Refutura" paper, which is certified with the "Blue Angel" label.

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