UBS

Real Estate Focus

Chief Investment Office WM
2018

Editorial

Dear reader,

To this day, spinach enjoys the reputation of being a miraculous source of iron. For this reason, generations of children have been and still are repeatedly forced to eat the green leafy stuff. This myth is based on an error, the origin of which goes back over 100 years. A scientist at that time is said to have made a mistake with the decimal point, which attributed to the vegetable ten times its actual iron content. The iron content of spinach is a prime example of an error that has been disseminated without challenge and thus has become taken for granted.

The debate surrounding fully autonomous vehicles and their impact on the real estate market shows some parallels with the spinach legend. In this case, it is not a matter of the undisputed iron content of such vehicles, but rather the one-sided manner in which the debate is being conducted. As in the case of the iron content of spinach, hardly a single analysis allows for any doubt that we will soon be traveling around in fully autonomous vehicles. It is beyond question that the assistance systems are becoming ever more sophisticated, thanks to technological advances. But in reality, it is still far from certain whether and, if so, how private road transport can be fully automated. The visionaries also seem be in agreement about the impact of fully autonomous vehicles on the property markets, advising us to align our real estate investments accordingly as of now. A recommendation which is in our opinion (still) being made on shaky grounds.

The special theme of this year's *UBS Real Estate Focus* does indeed deal with *tomorrow's* mobility and its consequences for the property markets. But so that in facing *today's* challenges you don't have to consume a regular ration of spinach like the cartoon figure Popeye, we have also focused again this year on the market trends which are currently the most important ones for you.

We hope you find this an engaging read.

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Content

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Not a game changer

Claudio Saputelli

Worldwide urbanization is continuing inexorably, and demand for mobility is keeping pace. New solutions are needed to keep limited traffic capacity from curbing economic growth. Property values will only rise in regions that "move closer" from a time perspective.

The United Nations predicts that two thirds of the world's population will call a city home by 2050. A century ago, only 30% of people were urban dwellers. Urbanization has made great strides in Western countries. At the end of 2015, for example, around 84.5% of Swiss residents lived in urban areas, compared to less than half the population in emerging and developing nations.

Urbanization and economic progress go hand in hand. Productivity increases when people live and work in cities. Also, cities can supply public services more cheaply (such as electricity, water, wastewater services, gas and telecommunications). Urbanization and the emergence and development of metropolitan areas are essential for economic growth and, ultimately, for prosperity.

Mobility is key to efficiency

For an economy to reap the full benefits of its workforce's potential, people have to be free to move quickly and independently in its metropolises. The challenges begin here. In 2013, two thirds of total mobility was concentrated in urban areas. If infrastructure development fails to keep pace with current population trends, people will spend more time sitting in city traffic. Traffic disruptions are already serious today. With demand for mobility expected to triple by 2050, urban planners could face a nightmare scenario of widespread traffic gridlock, with all the negative social and economic consequences that entails.

Intelligent mobility solutions more urgent than ever

Current capacity constraints can partly be blamed on urban development since the post-war period, in which cars came to dominate cities. To counter this one-sidedness, it is necessary to apply a more granular understanding of urban mobility and planning. Ideally, the car monoculture, in which cars in downtown areas are usually stuck in traffic jams or parked in space-hogging lots, will be replaced by a broader menu of mobility alternatives where public transit, non-motorized options – such as pedestrian zones and bicycle lanes – and potentially driverless cars (see page 10) will change how people get around.

No change in daily travel time budget

Urban and development planning is highly complex, but the consequences of future mobility plans can be demonstrated quite simply using a *constant travel time budget*. Cesare Marchetti described this budget in 1994, positing that people in different countries and cultures do not change their average commute times over decades (Marchetti's constant). This observation is based on an intriguing trend: people's travel time budgets *do not* decrease even as faster travel options emerge. In France, for example, the average travel speed has increased 3% a year on average in the past 200 years. In other words, when transportation gets faster, commuting distances get longer.

Hans Wilsdorf Bridge, Geneva

"Despite the upcoming mobility changes, demand for urban real estate will remain high."

Impact on the real estate market

No convergence of urban and rural prices
Marchetti's constant is one of the most stable mobility indicators around. On work days, commuters travel an average of 70 to 90 minutes in the countries examined. So what are the implications for the real estate market?

First, demand will remain high for real estate markets in urban centers and metropolitan areas within the travel time budget, even if the nature of mobility changes, as long as attractive jobs are concentrated in cities.

Second, property values will rise in regions that have "moved closer" to workplaces as a result of mobility improvements or major traffic infrastructure projects. This trend will drive urbanization.

Third, mobility concepts of the future – particularly driverless cars designed to reduce perceived travel time – will not reduce the difference between property prices in city centers and peripheral regions, particularly outside the travel time budget. The unique diversity of mobility offerings, the availability of innumerable services and the dense concentration of knowledge will always make major centers more appealing than rural areas. In addition, major centers within Marchetti's constant offer access to jobs in other (global) major centers thanks to airports and direct rail connections.

Access to activities is key

Claudio Saputelli

Most Swiss locations are highly accessible, by both national and international comparison. Real estate prices are generally higher in centrally located regions with equally easy access via public and private transportation. New traffic infrastructure cannot always affect prices, however.

Transportation accessibility is important for the attractiveness of regions as places for people to live and for companies to be based. Highly accessible regions, after all, have lower transportation and time costs, and so are generally more productive and thus more competitive than their less accessible counterparts. No wonder traffic and development planners are so focused on maintaining or improving accessibility over the long term. There are two ways to achieve this goal: the first is to locate activity destinations at or near residential areas, and the second is to optimize transportation services and infrastructure. In prosperous countries like Switzerland, these two approaches often go hand in hand.

Improvement in almost every region
Accessibility is good in Switzerland in general, and in most of its towns and municipalities. This holds true not only within Switzerland, but also compared to other countries, as various studies report. Building more transportation routes has improved accessibility, as have higher speed limits, improvements to existing infrastructure (e.g. increasing the number of connections) and road-widening projects that have added extra lanes.

The Gotthard Base Tunnel is the most recent example of the large transportation infrastructure projects that have continuously boosted accessibility in Switzerland. In fact, according to BAKBASEL, accessibility has improved in virtually every region of the country since 2005, with respect to both public transit and private motorized transportation. The centers of large cities are the only exceptions; these are now less accessible by private motor vehicle than they were several years ago, as factors such as high population growth nationwide have led to chronically congested thoroughfares.

More accessible, not just more mobile

"Mobility" is often confused with "accessibility." Mobility describes whether, how often and how easily people, goods and services can move or be transported. Accessibility, by contrast, is need and destination-based. It focuses on the travel times, costs, options, comfort and risks associated with access to key activity destinations (work, education, shopping and recreation).

When transportation systems are designed to meet a community's needs, their main function is to provide access to activity destinations at a low cost and with the least effort possible. Transportation and infrastructure policies should therefore focus on improving accessibility instead of merely increasing mobility.

Good accessibility bolsters the real estate market
Good regional accessibility is reflected in local property prices. However, it is impossible to quantify this effect exactly. There is no universally accepted definition or methodical approach for measuring accessibility, so it is often estimated based on simplified assumptions. Nonetheless, a survey of national and international studies can be distilled into four empirical findings on how accessibility affects property prices.

Travel time to central business district
One big driver of property prices is "centrality," i.e. the travel time to the nearest central business district and the related opportunity cost (loss of potential benefits) of this time. Generally speaking, the farther away the central business district, the lower the property prices. However, other factors such as a town's topographical location, supply and – particularly in Switzerland – tax considerations can override this effect and produce an entirely different outcome.

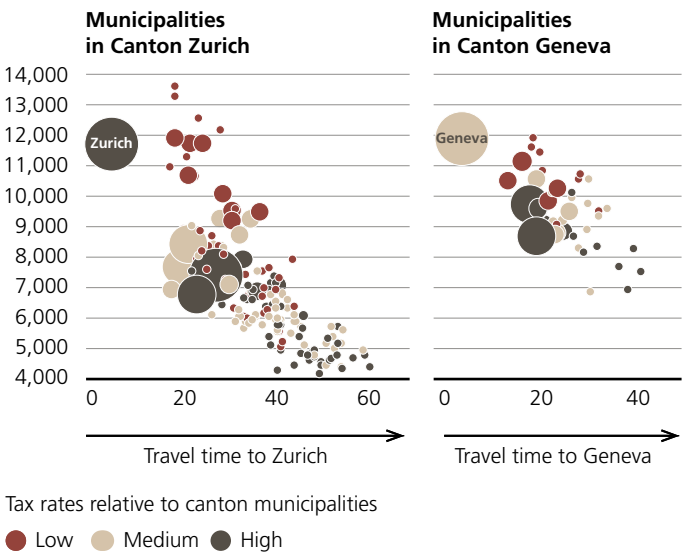
Quality differences between public and private transportation
Regions that can be accessed just as well with public transit systems as with private transportation tend to have higher real estate prices than regions with qualitative differences between these two modes of transportation. Also, buyers are willing to pay more for properties that are easy to access with private vehicles than for comparable properties that are more accessible via public transportation. For that reason, property prices tend to rise more in response to projects targeting private motorized transportation than to projects to improve public transportation.

Travel time saved by transportation projects
Locations that are already highly accessible – like big Swiss cities – do not have much room for improvement. Even large transportation projects can only lower travel times a little. Smaller locations are a different proposition entirely; they often harbor greater potential. As a result, property prices in more remote commuter locations tend to respond more to transportation projects.

Regional development potential
Improved accessibility can stimulate the local economy, encouraging home construction and reviving the housing market. This does not happen automatically, though. Transportation infrastructure projects can only contribute to economic prosperity if the targeted region has untapped potential of its own, or if the project connects it to a larger, more dynamic economic center.

Prices rise as accessibility improves

Condominium prices (in CHF/m²) and accessibility (in minutes)*



* Average travel time with personal motor vehicle and public transportation to the respective centers; population size class represented by circle size.

Source: FSO, TranSol, Wüest Partner, UBS

Revolution in the real estate market?

Claudio Saputelli

Fully autonomous vehicles – or rather, the technology for them – are almost here. Unclear, however, is how autonomous driving will actually work in a normal street environment. Real estate investors betting on big changes in mobility behavior are taking a huge risk.

Imagine a world where robotic cars whisk you from one place to the next. It is a much safer world thanks to intelligent control software, lightning-fast reactions, tireless attentiveness, better all-round visibility and strict adherence to traffic laws. It is also a world without the stress and wasted time that comes from battling city traffic. Driverless cars pick you up at home and transport you to your destination while you work or, depending on the car's features, catch up on sleep. It may sound utopic now, but it could become everyday reality. With near weekly newsbites about autonomous cars, the automotive industry implies that these vehicles will start appearing in showrooms in only a few years' time.

Forecasts tell us that perceived travel times will shrink to virtually zero. As a result, motorists will be willing to drive more frequently and cover longer distances. Car movements will increase significantly too, as unoccupied vehicles roam around picking up passengers or performing other activities. Also, large numbers of non-vehicle owners – the elderly, disabled, children, etc. – will likely adopt driverless cars.

Many questions remain unanswered
Driverless cars are still a long way from becoming widespread though; too many hurdles still lie ahead. The ethics of programming algorithms to resolve life-or-death questions, for example, is particularly difficult. People are wary of accepting actions taken by autonomous technology that may result in injury or death, even if autonomous technology has a better track record statistically than human drivers. Also, lawmakers have to establish the legal basis for the use of driverless cars. Germany, for example, passed a bill in April 2016 that puts the ultimate responsibility for accidents on the human sitting in the driver's seat, if there is any doubt. As a result, drivers have no choice but to constantly monitor the system, largely eliminating the touted advantages of fully autonomous vehicles.

Technical reliability has been elusive too. None of the current assistance systems work flawlessly. Road sign recognition – for example, the technology that shows drivers the maximum legal speed – regularly ceases to work when signs are dirty. Reading cameras are also particularly prone to fail due to rain, ice or dirt, or when the sun is low.

Impact on property markets

Urban parking lots would be relocated
It is currently unclear whether, when and how autonomous vehicles will change how we get around. That has not dammed the rise of reports on how driverless vehicles are poised to completely disrupt property markets and force real estate investors to rethink their investment strategies. They forecast the following big changes if fully autonomous cars become a reality one day:

Many people could decide to purchase trips in an autonomous vehicle instead of owning one or more cars. This would lower the demand for garages, parking spaces and driveways; existing space would be repurposed. Even large downtown parking garages would become obsolete, because autonomous cars would either be constantly running or parked in large, fully automatic parking systems on the city periphery.

Access roads to big apartment complexes, offices and retail outlets would have to be redesigned to allow large numbers of people to get in and out of cars. Gas stations would also come in for change (Switzerland currently has around 3,400), since autonomous cars would be maintained and filled up in fleets at central locations. Travel patterns would alter as well. The ability to relax and even sleep in autonomous cars would eliminate the need for travelers to interrupt their trip and spend the night in hotels close to main traffic arteries.

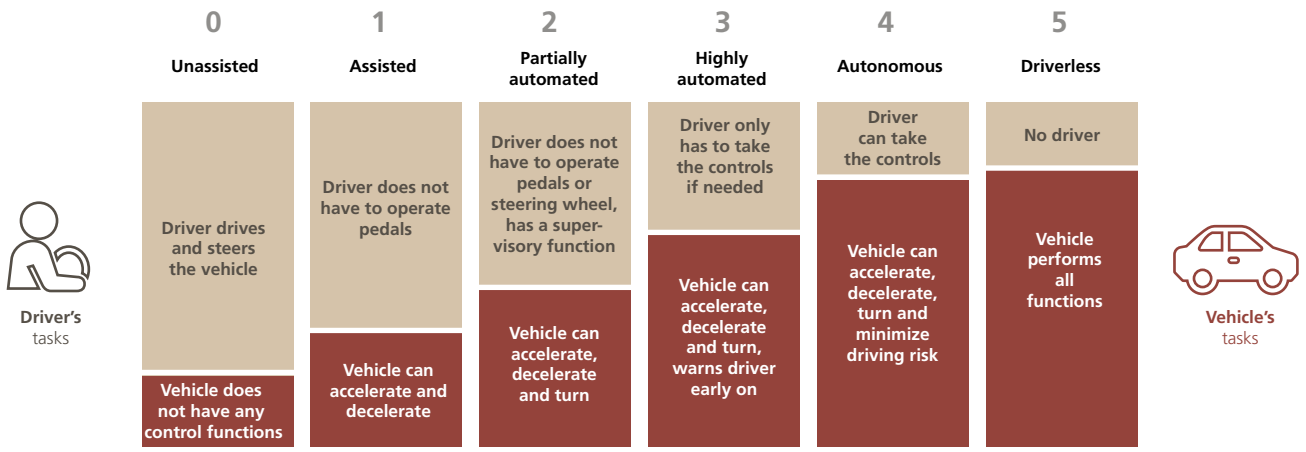
Betting on a vision of the future

The rise of fully autonomous vehicles is expected to revolutionize the property market, which is why governments and real estate developers are already being encouraged to devise flexible long-term development strategies. However, they are also being told that cities need even more parking capacity – at least in the short term. The recipe for success is therefore to build parking garages that can be easily converted to retail or other uses over the long term. Of course, real estate developers would be well advised to pursue flexible long-term development strategies even without autonomous vehicles.

Optimistically, it will probably take a decade or more before driverless cars become a reality and can be used anywhere, at any time and at least as safely as human-operated vehicles. Once that day arrives, another question will arise: How many people will still drive themselves, either because they enjoy sitting behind the wheel or do not trust the machine? Clearly, betting now on a brick-and-mortar strategy fully aligned with autonomous vehicles is risky.

A long road to full automation

The 5 stages of motor vehicle automation



Source: mobilegeeks.de, UBS

Footprints keep shrinking

Maciej Skoczek and Matthias Holzhey

Single-family homes have gained ground over condominiums. Stiffer competition with rental apartments is causing condominium prices to stagnate. Urban concentration will slow new construction of single-family homes, but will have little impact on prices.

Last year did not bring many new drivers for the owner-occupied housing market. Mortgage interest rates remained stable, population growth dropped below 1%, and rental apartments became cheaper. Home prices, however, rose slightly yet again in 2017. Condominium prices remained stable year-to-year, but prices of single-family homes increased roughly 2%.

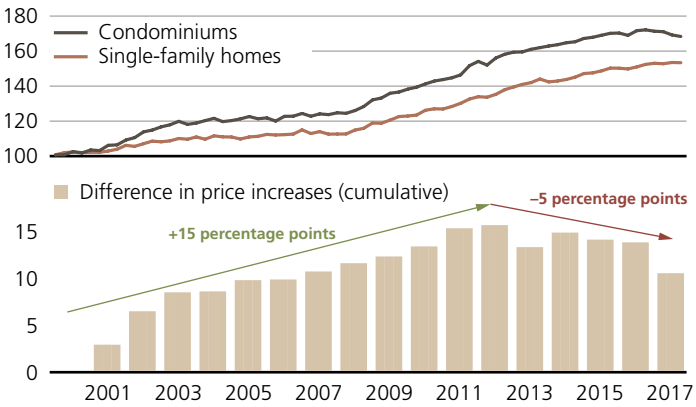
Home prices expected to increase slightly
The owner-occupied home market is mainly buoyed by low mortgage rates. The cost of owning your own home in Switzerland (interest costs, maintenance and provisions) is currently around 15% lower than the cost of renting a comparable property. With loan-to-values at 80%, the resulting return on equity is over 4%. This situation is unprecedented, at least in the current real estate cycle. Ten years ago, housing was a very popular investment: the cost of owning a home exceeded the cost of renting by 40%. This implies that investors expected prices to increase at the time. In fact, purchase prices had to increase at least 2% each year to offset the additional cost of ownership compared to rental (which was exceeded). The current savings, by contrast, provide a buffer against a market correction: home buyers would still be ahead financially if prices corrected by 0.5% a year.

This buffer is not expected to be exhausted in 2018. Home ownership costs will remain low; the robust economy has bolstered demand for homes. Home construction should also remain at last year's level, which was 15–20% lower than in 2014. We expect single-family home prices to increase slightly. Condominium prices, however, will likely stagnate since they face stiffer competition from declining rents. Absolute purchase price amounts continue to limit financing availability, driving demand for small apartments and maintaining buyers' willingness to pay for lesser-quality properties.

Condominiums were in the lead
Prices for condominiums have risen faster than those for single-family homes in the current real estate cycle. When adjusted for inflation, condominium prices in the available price indexes increased an average of 2.4% a year over the last 20 years, while those of single-family homes climbed a mere 1.9%. Much of this difference can be put down to three factors.

Parallel long-term price behavior in the two market segments

Inflation-adjusted asking prices (index 2000=100) and cumulative difference in price change rates between condominiums and single-family homes (in percentage points)



Source: Wüest Partner, UBS

Swiss House XXII, Preonzo (Bellinzona), Architecture firm: Davide Macullo Architects

"Only a quarter of owner-occupied homes built are single-family homes."

Single-family homes are too big
The average single-family home has around 170 square meters of living space. With purchase prices averaging over CHF 1 million, the pool of possible buyers is limited to 20% of all households. This shifts demand toward condominiums, which cost less than CHF 800,000 on average. This theory is supported by the fact that prices for relatively small condominiums have risen faster than for condominiums over 150 square meters in size.

Single-family homes have worse macro locations
Condominiums, whether new or pre-existing, are usually found at better macro locations than single-family homes. A quarter of all condominiums are found at prime locations, compared to a fifth of single-family homes. The annual price increase at these locations was 1% higher than the national average over the last 10 years.

Also, the construction boom in condominiums has improved condominium construction quality relative to single-family homes. Only a quarter of all the owner-occupied homes built in recent years are single-family homes. And modern condominiums are comparable to single-family homes in terms of comfort, privacy and sound insulation.

Better rentability favors condominiums
Condominiums remain very popular investments. The percentage of loan applications intended for buy-to-rent investments has nearly doubled since 2007 and has hovered at 18–20% of all housing loan applications for several years. Small and medium-sized apartments in urban centers and metropolitan areas in particular are ideal investment vehicles for small investors. The freedom to switch between living in the property or renting it out justifies the premium on condominiums over single-family homes.

Size, location and rentability differences will impact relative price trends in the future, too. In the long term, however, the single-family home market will be determined by two trends: densification and aging.

Densification aiming to reverse the trend
Higher floor area ratios mean higher property values. Single-family homes seem perfectly poised to profit from urban concentration, also known as densification, because they occupy a relatively large piece of land. So far, however, home values have not risen much outside the city centers.

No incentives for densification in rural areas
Most single-family homes are located in rural areas. According to the data, developed areas have not grown denser at all in the last 10 years; building space increased around 11%, on par with population growth. Developers simply had no incentives to densify; land was available and relatively cheap. Only in city centers and high-income communities did densities increase as high land prices made it worthwhile to pack more housing units into the same parcel of land. Building space thus grew only half as fast as the population. However, more single-family homes were built than demolished between 2011 and 2015, even in high-income communities and city centers. This is because, in most communities, it only pays off to demolish and replace condominiums if the floor area ratio can accommodate a doubling of residential floor space.

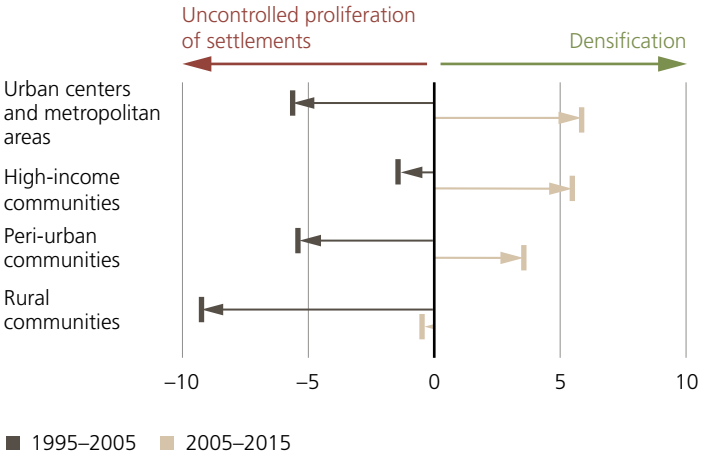
Spatial Planning Act discourages new construction of single-family homes
Densification entails using undeveloped oases within built-up areas as well as "unused development rights," which arise when the actual built floor space is less than the legally permitted floor space. According to a study by ETH Zurich and the Federal Office for Spatial Development, these "internal reserves" could easily accommodate over a million residents. But densification is not mandatory. Except for the greater Zurich area, virtually every Swiss region, including Geneva and Basel, has enough undeveloped, properly zoned land to absorb the next decade of population growth without densifying.

However, Switzerland's new Spatial Planning Act aims to use these "internal reserves." It gives precedence to the use of infill housing in developed rural and metropolitan areas over an increase in floor area ratios. Densification will take place by packing as much floor space as possible on such land, which will make new single-family home construction difficult.

New condominiums continue to replace single-family homes with extensive unused development rights in upmarket locations. However, these properties are already selling at a premium as investment properties or status symbols. In addition, the new Spatial Planning Act reduces the net financial gains from zoning changes by levying a value-added tax of at least 20% on property value increases attributable to new zoning. Most cantons already levy value-added tax on gains attributable to an upgrade in zoning classifications. Taken together, these trends mean the supply of single-family homes will grow more slowly in the future than it has thus far.

Minimal densification in rural areas

Difference between changes in population and changes in building area*, by community type, in percentage points



* According to the FSO's area statistics as of December 15, 2017

Source: FSO, UBS

Demographic change causes glut of single-family homes
Over the medium to long term, however, the lower supply of single-family homes will not be enough to turn the price tide permanently. Until 2030, the main buyer group of large residential units will grow at half the rate as the overall population due to aging. In fact, demand for single-family homes is expected to shrink in the mountainous cantons of Central Switzerland, Appenzell Innerrhoden and Grisons.

In other words, single-family home prices, which have outperformed condominium prices since 2014, are probably about to reach the end of their rally. Prices in both market segments should generally track each other closely over the long term. Fierce competition and relatively high transparency in the home market will prevent prices in both segments from decoupling in the long run.

Comparison of asking and transaction price indexes

Price indexes based on asking prices and those based on transaction prices should remain essentially identical in the long term. In the past 10 years, however, transaction price indexes have gained about 15 percentage points more than asking price indexes. There are three reasons for this difference:

(1) In periods of fast-rising demand, transaction prices are bid up higher than advertised prices. This is likely what happened at times in Swiss hot spots. Sellers, however, are quick to adapt their expectations to changed market realities.

(2) Transaction records make a more exact quality adjustment possible. In other words, prices are adjusted for variations in quality, such as micro location or building condition. Since micro locations have deteriorated among sold properties in the last five years, the adjustments have increased transaction price indexes.

(3) Transaction price indexes weight expensive regions more heavily. Steeper price increases at good locations since 2000 have contributed to the decoupling of transaction prices.

No longer at any price

Matthias Holzhey and Elias Hafner

Asking rents have only dropped moderately, despite rapidly increasing vacancy rates. This is partly for psychological reasons. However, the downward trend should accelerate in the next three years. Prices for apartment buildings have peaked, and property values could decline if central banks do not mount a sustained intervention.

Competition in the rental market is getting even fiercer. As of mid-2017, 2.4% of all rental apartments were vacant. This level was last exceeded in 1998, when 2.8% of rental apartments stood empty. So far, however, the vacancy rate has not scared off investors; the number of newly approved units has declined very little in recent quarters. This year, the total housing stock is expected to increase 1.1%.

Vacancy rate poised to hit all-time high
Residential construction is virtually unchanged, while additional demand is dropping. Net immigration is expected to reach nearly 60,000 this year, meaning that some 10,000 fewer additional apartments will be needed than in 2013. The decline is entirely due to lower net immigration from EU countries, which has shrunk from 75% to 60% of total immigration in the last four years.

Several factors are driving this trend. The economic recovery in the Eurozone, especially on the Iberian Peninsula, has slashed net immigration from Spain and Portugal to negligible levels in the last five years. But Switzerland's weak labor market has lost its allure, too. If construction and population trends remain the same, the vacancy rate will reach a new record high by 2019 at the latest.

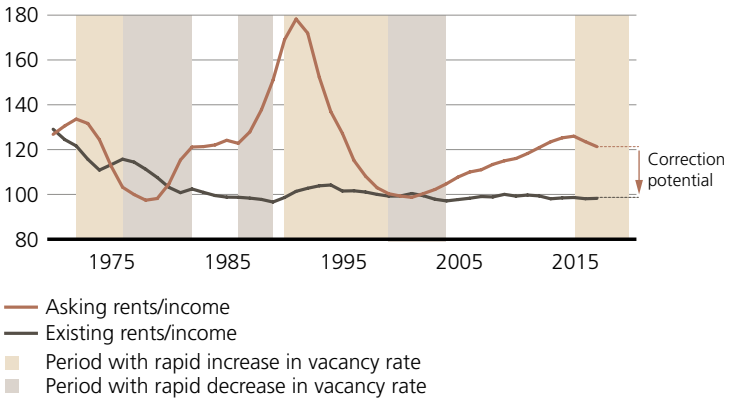
Rent decreases still moderate
In extremely tight housing markets, asking rents (rents for new and renewed leases) tend to respond very quickly to changes in the vacancy rate. Rents tend to skyrocket if vacancy rates in a region drop to around 0.5%.

This happened from 1985 to 1991, when the nationwide vacancy rate dropped below this threshold, and asking rents shot up 50% after adjusting for inflation. In the current real estate cycle, only the Lake Geneva region has such a tight housing market. Here, rents increased 5% annually between 2002 and 2015 – double the rate in the rest of Switzerland.

If vacancies go up in such tight markets, rents tend to collapse quickly. For example, rents in the Lake Geneva region have already shed 9% since 2015, even though the current vacancy rate for rental apartments, 0.8%, is only one-third of the Swiss average. Average advertised rents have only dropped moderately nationwide.

Correction potential for asking rents

Ratio of asking and existing rents to income (index 2000=100)



Source: FSO, Wüest Partner, UBS

The index for asking rents is almost 3% below its mid-2015 peak. Rents declined sporadically in most cities and metropolitan areas, and even in large parts of the periphery. In fact, Western Switzerland (without the Lake Geneva region) even showed a 1% increase last year.

Loss aversion puts off market shakeout
Psychological factors are probably responsible for the lack of movement in asking rents, even in municipalities with rapidly rising vacancy rates. Loss aversion – the tendency to avoid losses – has been thoroughly researched in empirical studies. For many investors, a financial loss has up to twice the psychological impact as an equivalent gain.

In the real estate market, loss aversion explains why market liquidity declines rapidly when home prices fall. Potential sellers tend to hold on to their properties when the current market price is lower than what they originally paid. Loss aversion is also the reason why landlords are hesitant to lower asking rents even after a prolonged vacancy. A lower rent is a certain loss or, at the very least, less than they originally expected to earn, which they perceive as a loss.

It may pay to wait with new apartments
When advertised apartments remain vacant for weeks, landlords have to weigh the risk of prolonged vacancies against the lower income associated with a rent reduction. If rents or rent expectations no longer reflect market conditions by the time the apartment comes onto the market, the asking rent will often have to be reduced more than 10% before tenants are willing to sign a lease.

With new buildings, reductions this large can significantly lower yields, since the lower rents usually have to be passed on to all the tenants in the building. In that case, landlords may prefer to wait for a deeper-pocketed tenant. It is no wonder, then, that the vacancy rate has shot up particularly quickly in new buildings, where roughly one-ninth of the apartments are empty. Instead of lowering rents, more landlords are now trying to lure in tenants with incentives, which may pose more disadvantages than advantages.

Action recommended with existing properties
With existing properties, however, landlords can usually contain the income loss to one apartment. Here, it pays to quickly adapt rents to the new reality, especially in regions where the leasing risk is still rising. Also, it is cheaper in the long run to renovate apartments that no longer meet market quality standards than to drastically reduce the rent.

Incentives can attract the wrong tenants

More rental apartments have been advertised with sign-up incentives in the past two years – from rent-free periods to graduated rental leases to gift cards and free moves. Landlords have turned to incentives for obvious reasons: they get prospective tenants' attention and avoid the need to lower effective rents, which would reduce property values. The sweeteners have become almost de rigeur for commercial properties, which are rented out under long-term leases. But it's not clear that incentives are effective for rental apartments. Gift cards or even free moves will likely have very little impact on a prospective tenant's housing budget and willingness to pay more in rent.

In fact, sign-up incentives could have unintended and undesirable consequences. They could give the impression that something is wrong with the apartment or landlord and thereby damage a development's image. They might also attract the wrong kinds of tenants. The shorter the tenant's intended stay, the more valuable a temporary discount or cash incentive will be. People who are eager to live in an apartment for rent-free months will probably move out again after a short period of time.

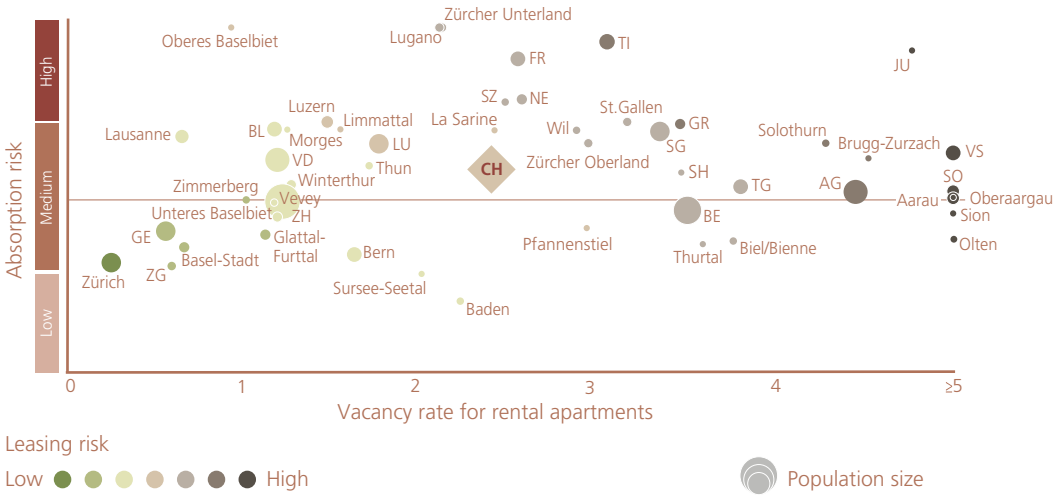
Rents declining at an accelerating pace
Persistently high vacancy rates put pressure on rents. We expect asking rents to correct around 2.5% this year. But that does not necessarily mean the correction phase is over. Unless construction activity changes direction or immigration surges again, asking rates will probably be at least 10% lower in 2020 than in 2015.

Existing rents have developed steadily over the long term. In Switzerland, they have kept step with wages since 1982, increasing 0.5% a year in real terms. Therefore, current rents are not excessive, so we don't anticipate a broad correction in the years to come. However, asking rents are still 20% higher on average than current rents. This difference will shrink when asking rents correct as anticipated. Once this happens, landlords will be less likely to increase rents for incoming tenants in existing properties. They will also have less latitude to change the terms of existing leases if the reference interest rate rises, since asking rents act as a ceiling for existing contracts.

Excess supply risks in Ticino and Western Switzerland

Vacancy rates in the business centers are low and will probably not rise much in the next several quarters. Structural vacancy has driven up leasing risks in the Central Plateau region and many peripheral regions. The cantons of Solothurn and Valais, for example, have the highest percentage of vacant rental apartments at around 6%, while nearly 4.5% of all rental apartments are empty in Aargau. The trend is extremely negative in Ticino, too. An increase in the number of building permits and a sudden drop-off of immigration from Italy will likely prompt a steep rise in the number of vacant rental apartments by mid-year. Excess supply risks have also risen significantly in the Western Swiss cantons of Fribourg, Jura and Neuchâtel, as well as in the hinterlands of Vaud.

Vacancy rate for rental apartments[1] (2017) and absorption risk[2] (4Q 2017) by canton (abbreviation) or population mobility region, in %



Leasing risk
Low High

Population size

[1] Vacancy rate for rental apartments based on UBS estimates of rental housing stock

[2] The absorption risk compares growth in the housing stock (supply) with population growth (potential demand) and indicates whether too much or too little is being built on a regional basis. The increase in supply is determined from the number of building permits requested and issued in the last five to six quarters. Potential growth is estimated based on the past three years of population growth.

Source: FSO, Docu Media, UBS

Investment outlook

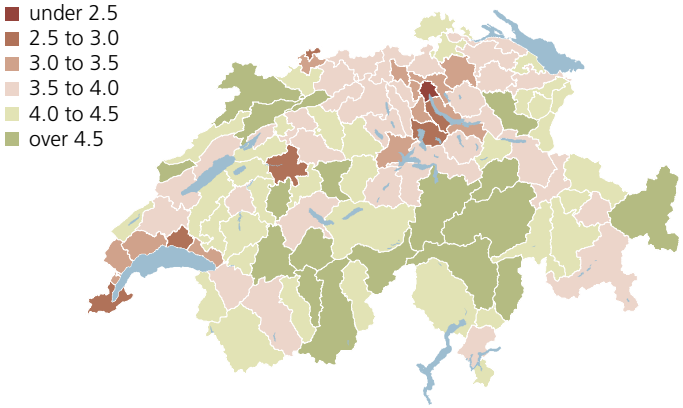
Valuations peaking
Falling capitalization rates have fueled the rally in residential investment property prices over the past 10 years. Prices for apartment buildings throughout Switzerland have risen nearly 60% since 2007. Rents, however, have only risen around 15% over the same period. As a result, net initial yields have declined from just under 5% to 3.5%. Yields vary regionally as well, from less than 2% (Zurich District 1) to over 5% (Goms).

Many investors still find these yields attractive given the negative yields on Swiss government bonds with maturities of up to 10 years or more. However, interest rates should rise slightly over the next 12 months as central banks worldwide tighten the monetary reins. With vacancies on the rise and rents on the decline, capitalization rates will likely not fall any more in 2018. In short, prices for residential investment property appear to have peaked. Investors have largely given up on further capital gains. This can be seen in the stock market: the prices of residential real estate funds underwent a significant correction in the second half of 2017. Expectations of further increases in residential investment property prices have fizzled out.

Value adjustment looms
Future investment performance depends heavily on the long-term interest rate trends. Interest rates will start trending upward once central banks stop depressing them artificially. A small increase in the yield curve of 0.5 percentage points or less shouldn't squeeze prices for apartment buildings across the board, however. Investors would still be hard-pressed to find better places to put their money. An increase in the yield on 10-year Swiss government bonds to, say, 2%, however, would require substantial write-downs. Property values would correct around 20%. Properties in prime locations, which have responded more strongly to falling interest rates in recent years, could shed up to 30% of their value. Peripheral locations, by contrast, are less sensitive to interest rate fluctuations. Instead, they face a higher risk of lost income in today's market due to higher vacancy rates or lower rents. We believe the most attractive locations are metropolitan area locations situated at commuting distance from central business districts; they offer net initial yields of just over 3% with only moderate vacancy risks.

One franc of rent is worth twice as much in Zurich as in the mountains

Initial net returns* by population mobility region, in %



* Net yield after all costs are deducted (including maintenance) in % of purchase price
Source: UBS estimates

More money from institutional investors

Elias Hafner

Insurers and pension funds now have greater incentives to offer mortgages. Banks are likely to lose market share due to stricter banking regulation. Institutional investors can choose from several mortgage investment options.

Last year, the Swiss mortgage market broke through the CHF 1 trillion barrier. Banks hold roughly 95% of the total mortgage volume, with insurers and pension funds making up only a small portion of the market. However, the trend appears to be changing. Insurers' mortgage positions grew by around 6% a year in 2015 and 2016, while pension funds' mortgage books expanded 5% in 2016 after years of decline. Banks, in contrast, have experienced slower growth. In fact, large banks' mortgage books have recently shrunk. Initial 2017 data indicates that insurers' mortgage portfolios are continuing to grow faster than those of banks.

Institutional investors with a long-term horizon

Banks finance most mortgage loans with debt that is callable at short notice. For banks, fixed-rate mortgages are traditional interest operations: they collect the mortgage interest with one hand, and pay depositors interest on their deposits with the other.

Insurers and pension funds, by contrast, invest capital that insured individuals or plan members pay in to cover future losses or pension commitments. Pension fund obligations usually have terms of 10–15 years. For this reason, insurers and pension funds prefer to extend long-running loans, offering 15 years by default but going up to 25 years in some cases. They also tend to be more conservative about loan-to-value ratios and market segment risk. So not only are market shares unequal, but the market itself is segmented too.

Incentives shift due to regulation and low interest rates

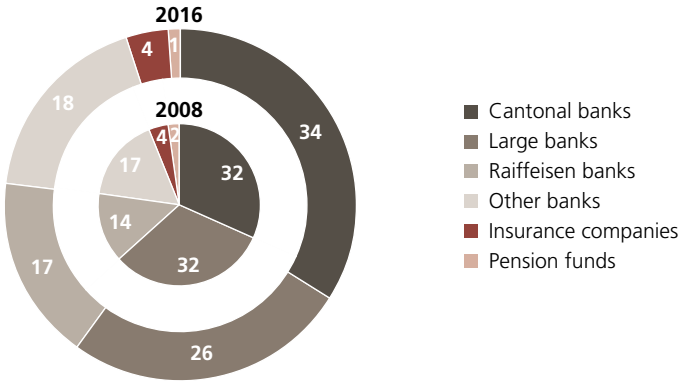
There are three main reasons behind institutional investors' current push into the mortgage market:

Regulation

Stricter capital and liquidity requirements since the financial crisis under Basel III have made financing more expensive for banks. At the same time, the Swiss National Bank's countercyclical capital buffer and stricter self-regulation have made mortgage lending more expensive or difficult for banks. The regulation of mortgage lending for institutional investors, by contrast, is not quite as stringent.

Institutional investors have a small portion

Swiss mortgage market, broken down by lender as of the end of 2008 and 2016, in %



Source: FSO, FINMA, SNB, UBS

Negative interest rates
The January 2015, introduction of negative interest rates shifted the incentives for granting mortgages in favor of institutional investors in two ways. First, banks do not charge most of their private clients negative interest, so their earnings situation is at risk of worsening considerably. To prevent margin erosion in the mortgage business, banks have raised lending margins: mortgage rates at banks have barely budged downward despite a significant decrease in the general interest rate level. Many pension funds, on the other hand, are affected by negative interest rates. According to Swisscanto's Pension Funds Study 2017, 58% of pension funds pay negative interest or deposit charges, encouraging them to shift some fixed-income or money market positions to mortgages.

Property values
The low interest environment has prompted institutional investors to move large amounts of capital to investment properties. Pension funds, for example, reduced their bond positions to 32% of their portfolios in 2016 from 38% in

Independently, with a partner or indirectly

Pension funds and insurers wanting to invest in the mortgage market have several options.

Independent mortgage lending
One option is for pension funds and insurers to lend mortgages themselves, enabling them to capture all the returns along the value chain. As of mid-December 2017, relatively large institutional investors offered 10-year mortgages based on reference rates of around 1.3% (banks: 1.5%). Whether or not independent lending makes sense depends heavily on the maintenance costs for the necessary infrastructure. As a rule, the bigger the mortgage book and the longer its intended operating life, the easier it will be to absorb high initial and fixed costs.

Collaboration with a mortgage partner
Institutional investors can also transfer part of the value chain to a partner. Working with broker platforms, for example, gives them quick access to new clients. Pension funds or insurers can also act solely as investors. In this case, the mortgage partner – for example, a bank – handles all the administration. The return for the institutional investor depends on the maturity; at the moment, it should range from nearly 0.5–1.0% in most cases. Mortgage partners, by contrast, can earn an additional return without having to carry the mortgages on their books. Separating the underwriting and lending operations requires properly adjusted incentives, though. For example, the mortgage partner can always carry part of each mortgage on its balance sheet, or the underwriter can analyze a mortgage without knowing whether the institutional investor or the mortgage partner will be bearing the default risk and carrying the investment on their balance sheet.

Indirect investments
Finally, investments can also be made indirectly through investment foundations or mortgage funds. Several large banks have created investment vehicles for this purpose since late 2016 and, in some cases, have moved mortgages from their own balance sheet into them. This solution offers the prospect of broad diversification and the rapid build-up of a mortgage position. Also, investors can redeem shares if they wish. Return expectations vary depending on the mortgage fund, mainly because of average maturities (less than one year to six years), but currently range around 0.2–0.5%. Rigorous mortgage selection criteria are designed to prevent these investment vehicles from only receiving "bad" loans. Unlike direct mortgage investments, these positions have to be marked to market, which can lead to unwanted coverage ratio fluctuations when interest rates change.

2007, and increased the real estate share to nearly 23% from 17% during the same period. Demand for investment properties among institutional investors remains robust, but investors seem more cautious now. This has brought mortgages – which, at conservative loan-to-value ratios, act more like bonds than real estate investments – onto the radar.

"The segmentation should continue to increase, which will lead to more robust mortgage lending as mortgage asset maturities adapt to investors' liability maturities."

Banks still dominant, but segmentation stronger

The spread between mortgages and fixed-income investments seems highly attractive at first sight, and not just because of the negative interest rate environment. Mortgages have certain appealing characteristics as well. They are an illiquid asset class, so investors demand to be compensated accordingly. Institutional investors, with their long-term investment horizon, can bear the liquidity risk and collect the illiquidity premium. Also, over the long term, mortgages can provide diversification and carry a default risk as low as that of bonds. Default rates can spike, however, as the subprime crisis illustrated. Knowing this, institutional investors should not relax their traditionally conservative mortgage lending policies just to collect a few extra basis points. These investors are also wary of mortgage holdings that shorten capital commitment periods, since they want to avoid asset-liability mismatching.

While the market distortions caused by negative interest rates are unlikely to persist over the medium term, the "regulation gap" between banks and institutional investors – due to Basel IV, among other things – could certainly widen even more. As a result, banks are being forced to give up some mortgage business and focus more on the service-oriented, less interest-rate-sensitive links in the lending value chain. At the end of 2016, insurers were potentially able to invest an additional CHF 37 billion in mortgages (estimated, not including over-collateralization). Pension funds are generally permitted to invest 50% of their total assets in Swiss mortgage securities. Even if they did choose to allocate such an unrealistically high share of the CHF 800 billion of capital held in second pillar plans to this asset class, they would still make up less than half of the total market. Clearly, banks will continue to dominate the Swiss mortgage market. The market should continue to split up into segments, however, which will ultimately lead to more robust mortgage lending as mortgage asset maturities become more aligned with investors' liability maturities.

Higher returns with higher risk

Elias Hafner and Maciej Skoczek

Crowdfunded investments in the Swiss residential real estate market have been delivering blockbuster returns through high gearing and compromises in macro locations. Investors have been reaping the rewards during this fair-weather period. Concentration risks loom, however, particularly for small investors.

Too good to be true? Earn 7% a year in an ostensibly secure asset class while interest rates are low. Real estate crowdfunding platforms are making exactly that promise. These platforms, which first appeared in Switzerland in 2015, have brokered over CHF 200 million in investments in apartment buildings. Most of the time, the platforms have kept their promise. Buy-to-let and residential real estate funds are traditional alternatives to crowdfunding, but currently offer much lower returns: 4–5% and 2–3%, respectively.

Up-close look at the differences in returns
The large differences in returns on equity, especially between crowdfunded investments and residential real estate funds, are largely attributable to leverage, differences in gross rental returns and the costs of managing the real estate portfolio.

Gross rental return – funds offer better location, liquidity and diversification
On average, crowdfunding providers promise net rental incomes of nearly 4.5% of the real estate purchase price. The portfolios of residential real estate funds, by contrast, pay an average of 3.5–4% of the fund assets' fair value. So why do listed funds return less?

First, they come with certain advantages, like better diversification and greater liquidity than individual investments in apartment buildings. Investors are willing to pay a premium for these advantages, lowering returns. In investment crowdfunding, by contrast, the risk is concentrated in a few apartments; the secondary market is still untested.

What is investment crowdfunding?

Investment crowdfunding – also known as equity crowdfunding or crowd investing – in real estate enables many investors, each using relatively little capital, to purchase apartment buildings through an online platform. That way, even small investors can co-own a residential investment property and profit from rental income and rising property values.

Second, fund properties tend to have better macro locations. Only some 25% of the Swiss population lives in communities with a higher macro ranking than a fund portfolio's median property. Median properties in crowdfunded ventures, by contrast, tend to rank much lower; a bit more than 60% of the population lives in communities with a better rating.

Third, funds always factor in a rent default rate of around 4%.[1] That is much higher than the average vacancy rate of rental apartments in invested communities, which is less than 2% on a portfolio-weighted basis. Crowdfunding figures only include a vacancy buffer of around 1.5% – despite significantly worse macro locations and community vacancy rates in excess of 5%.

[1] The rent default rate corresponds to the reduction in income attributable to vacancies and uncollected rent relative to net target rent.

Finally, rental incomes from crowdfunded investments are assumed values. The rents for apartments with published square-meter prices tend to correspond to Wüest Partner's asking rents in upmarket properties in the same community. This is an optimistic assumption at best, given the micro locations of crowdfunded properties.

These factors provide a broader context for interpreting the difference in gross rental returns. Real estate platforms do not appear to be buying at an especially favorable price-to-risk ratio.

Managing real estate portfolios – funds are not cheap
Managing a real estate portfolio incurs expenses: for taxes, maintenance, repairs and administration.

Crowdfunded portfolios set aside around 5% of rental income for maintenance and repairs. That may be realistic in the short run for most new or newly renovated properties, but is probably too low in the long run. Residential real estate funds, by contrast, put the effective costs at 10–15%.

Crowdfunding platforms charge around 10% on average for portfolio administration. With real estate funds, the fund management company and custodian bank (including external advisors and administrators) collect 15–20% of total rent income.

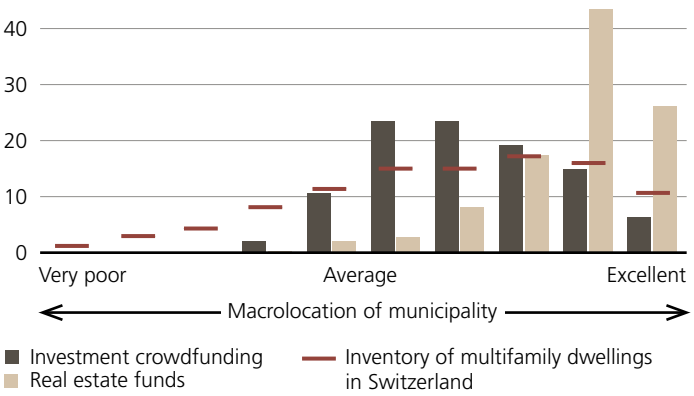
Taxation is also different. End investors have to pay tax on income and capital gains from crowdfunded investments. Real estate funds are taxed separately, as well. The actual rate varies considerably, depending on the regional focus and investment type (direct or indirect), but tends to average close to 15%.

To recap: crowdfunded investments incur average costs of 15–20% of rental income before personal tax, compared to over 40% for residential real estate funds. The resulting return on invested capital is around 3.5% for crowdfunded real estate and around 2% for residential real estate funds. However, crowdfunded investments make ambitious assumptions about maintenance and repair costs, which will probably rise over the long term. Also, end investors have to pay taxes on a larger slice of their returns from platforms than from funds, since about half the funds hold the real estate directly, making distributions to end investors tax-exempt. Crowdfunding investors also have to pay extra fees, including property gains taxes, if the property changes hands. On balance, it remains to be seen whether crowd investing is in fact more cost-efficient.

Leverage – the most important performance driver
Leverage is very attractive given the historically low mortgage rates available today. Crowdfunding platforms and residential real estate funds are taking out long-term mortgages with rates at generally less than 1%. Mortgages on crowdfunded properties usually average 60% of the property value, while funds have a debt ratio of around 20%. As a result, the return on equity for crowdfunded real estate is 6–7%, compared to only 2.5% for residential real estate funds.

Crowdfunded properties often found at average locations

Percentage of properties, broken down by investment vehicle and distribution of multifamily housing inventory and by macrolocation category (in % of the total inventory)



Source: FSO, various investment crowdfunding platforms, annual reports of various real estate funds, Wüest Partner, UBS

Only for risk-tolerant, broadly diversified investors

Risk, in other words, is a big reason for the differences in return on equity. We believe the market cycle for apartment buildings has reached an advanced stage. Given the high gearing of crowdfunded investments, relatively small interest rate hikes or declines in rents could trigger significant corrections. If market realities do not live up to optimistic expectations for high rental incomes, low vacancy rates at average locations or minimal renovation requirements over the investment period, the annual after-tax return will drop – and with it, the buffer for corrections.

If vacancy rates and maintenance and repair costs turn out to be typical for the market, the investment will likely turn a loss if the property value experiences a 10–15% correction over an average investment horizon of six years, and so will underperform an investment in residential real estate funds. If property values decline 10% with a loan-to-value ratio of 60%, investors will lose a quarter of their invested capital (excluding rental income). Many small investors, in other words, will bear a high concentration risk if they allocate a large portion of their total assets to crowdfunded investments, regardless of shared ownership of the property.

Investors able to absorb significant losses in a single position – say, because they have a large, broadly diversified portfolio – may find crowdfunding a welcome opportunity to boost returns by making highly leveraged investments in apartment buildings at peripheral macro locations. Club deals are another alternative, where several wealthy investors put funds into real estate without going through platforms.

Residential property – investment forms at a glance

	Buy-to-let	**Investment crowdfunding**	**Residential real estate funds**
Minimum investment	Several CHF 100,000s	Generally CHF 100,000	Less than CHF 100
Gross rental return*	Nearly 3.5%	4 to 5%	3.5 to 4%
Return on equity	4 to 5% (before deducting administration costs assuming a 60% LTV)	6 to 7% (after deducting administration costs)	2 to 3% (after deducting administration costs)
Gearing	Up to 80%	55 to 65%	Around 20%
Financing costs	Variable	Generally less than 1%	Generally less than 1%
Taxes	Rental income counts as taxable income after deducting financing and maintenance costs. Selling the property triggers additional taxes such as property gains taxes.	Distributions count as taxable income. Selling the property triggers additional taxes such as property gains taxes.	Fund charges and taxes often account for 10 to 20% of net rental income. Income tax must be paid on distributions from funds that hold indirect real estate investments. No income or capital taxes for funds that hold direct real estate investments.
Administration costs (as a % of net rental income)	Property management incurs additional costs if the work is outsourced.	Approx. 10% (including performance fee upon reaching a minimum occupancy rate)	15 to 20%
Investor's property rights and say in decision-making	Entry in land registry, sole ownership	Entry in land registry, co-ownership (25 owners on average)	No entry in land registry, no say in decision-making
Typical property size	CHF 0.5 to 1.2 million	Median property CHF 4.5 million	Median property CHF 7.8 million
Diversification	None	Low	Medium to high
Liquidity	Illiquid	Poor	Relatively high

* Net rental income divided by purchase price/market value (after deducting vacancy [buffer])
Source: UBS, as of 15 November 2017

Shopping malls reinvent themselves

Maciej Skoczek and Sandra Wiedmer

Sales per square meter are highest in the largest train stations due to robust demand. Shopping centers in quieter locations are, however, feeling greater pressure. Malls are looking for new ways to boost visitor numbers. Leisure and entertainment oases are gaining stature.

Shopping malls in train stations have the highest sales per square meter on an annual basis. In 2016 (latest available data), retailers at Bern station generated around CHF 31,000 per square meter, followed closely by Lucerne station, Geneva Cornavin and Zurich Central Station with around CHF 25,000 per square meter. By comparison, the Glatt shopping center, which topped the list of Swiss malls without a direct station connection, generated only CHF 14,000 per square meter. The main reasons for the high sales are the long store hours and easy access to quick shopping for commuters.

No wonder demand for space at major public transit nodes remains strong. Vacancies are rare, and rents are high. Retail traffic should increase over the long term too, since SBB expects commuter numbers at Switzerland's biggest train stations to increase around 50% by 2030. Investors have responded by building new retail space near train stations – including the large malls "Europaallee" and "Welle 7," which recently opened next to Switzerland's busiest train stations in Zurich and Bern. Retail space has been added at other train stations too, including Bellinzona and Zurich Oerlikon.

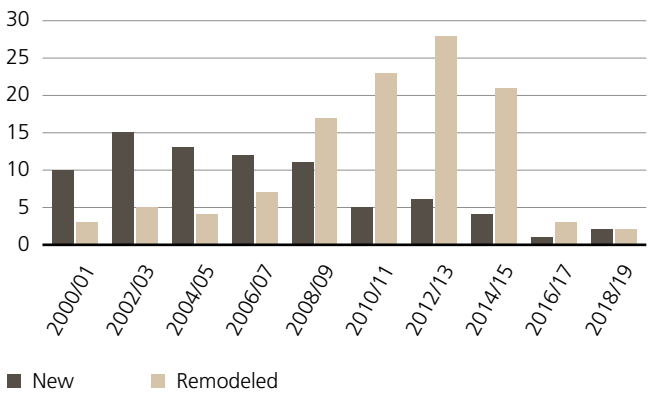
Conversion edges out new construction

Shopping centers in quieter locations are struggling with plummeting sales in absolute and per-meter terms. In 2016, they sold over 10% or CHF 1,000 less per square meter than in 2010. Investor sentiment has slumped as well: while over 60 new malls opened between 2000 and 2009, only 18 are expected to open between 2010 and 2019. Last year saw only one new opening, but it was a significant one. The "Mall of Switzerland" in Ebikon boasts close to 50,000 square meters of retail space, and ranked number four by size nationwide at its opening in November – or number two if leisure and entertainment space are included. Other new malls, "Mattenhof Süd" in Lucerne and "The Circle" at Zurich Airport, are planned for opening in 2019.

Market saturation, the growth of e-commerce and widespread shopping tourism have prompted investors to try a different approach to improve their chances of success: renovation. The number of conversion and rehabilitation projects increased rapidly between 2008 and 2015. During this period, almost half of Switzerland's malls underwent a complete or partial makeover. Owners clearly hope that modernizing and sprucing up their retail space will attract

Investment activity on the decline

Number of new and remodeled shopping centers



Source: GfK, UBS

Waldhotel at Bürgenstock Resort Lake Lucerne, Obbürgen (Stansstad)

"Since 2008, half of Switzerland's malls underwent a complete or partial makeover."

more visitors and boost retail sales, thereby increasing demand for space and raising rents. Renovation activity has, however, weakened since 2016 – not surprising since around 90% of Swiss malls were rebuilt or renovated between 2000 and 2015.

E-commerce hampers brick-and-mortar competitors

The classic mall concept has seen its day. Today, investments in shopping centers will only deliver the expected returns if the centers themselves adapt to the new market realities. The brick-and-mortar sector is losing revenue to shopping tourism and online retailers. In September 2017, retail sales had fallen more than 5% compared to the end of 2014. A tenth of all retail sales in Switzerland are now generated through the internet.

E-commerce poaches most of its sales from the brick-and-mortar non-food sector, but more food purchases are likely to shift online as well. The two largest online food retailers, for example, have increased sales over 40% since 2010, while traditional channels have seen a slight decline in food sales. New online providers in the food market will likely steal additional market share from brick-and-mortar stores in the future.

Paradigm shift to leisure and entertainment centers

Online retailing will probably lower the demand for space among retailers even further. To combat vacancies, which could squeeze them out of the market or shut them down altogether, many shopping malls will have to overhaul their mix. Existing malls are attempting to stand out from the online retail world by offering shoppers experiences that they cannot get in cyberspace.

The advertising slogan for the "Mall of Switzerland" is a prime example, "Where shopping becomes an experience." Restaurants, movie theaters and leisure areas with fitness and well-

ness equipment complement the conventional retailers. "Welle 7" in Bern takes this concept a step further. Located right by the train station, it offers conference rooms, coworking spaces, a school, and a food court as well as shopping. Managers of "Avry Center" near Fribourg presented their own plans in early 2017: to completely overhaul the current retail range and to add a multiplex movie theater, a swimming pool and a park. They have attempted to make the center even more attractive for commuters with a new SBB and bus station, as well as apartments on the mall grounds. "The Circle" at Zurich Airport has taken a novel approach: at one of Switzerland's busiest traffic nodes, it consists mainly of showrooms where visitors can experience the brands and look at the products. The actual purchasing happens online.

Declining returns for retail space

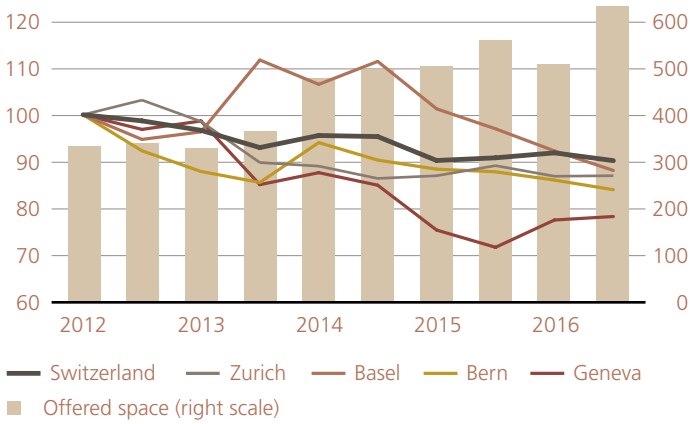
According to Wüest Partner, 630,000 square meters of retail space was vacant in mid-2017 – double the level four years ago and a new record that is larger than the total area of Switzerland's 15 largest shopping malls. Vacancies have grown the most in small and medium-sized cities. However, vacancies in the metropolitan areas of large cities have increased significantly as well.

Falling demand for space has squeezed rents for retail space. Owners, faced with the prospect of vacancies, have been forced to lower their rent expectations. All told, asking rents for retail space are down nearly 10% from their 2012 peak. Declines in all large centers have been steeper than the Swiss average, with Geneva experiencing the strongest correction – over 20%.

Sinking rents and stagnant property values have eroded total returns. In 2017, retail space investments only returned around 3.5% – the lowest level since IPD started collecting data in 2002, and the lowest value of all property usage types last year. For 2018, we expect another slight decline in the total return on retail spaces.

Rents fall as the supply of space increases

Asking rents for Switzerland and market regions (index 4Q 2012=100) and offered retailed space (in 1000 m²)



Source: Wüest Partner, UBS

Prices (still) correcting

Matthias Holzhey

The pro-tenant market is putting downward pressure on total returns from office space portfolios. The supply surplus has stabilized, however, and is expected to shrink slightly this year. Competitive pressure remains due to ongoing large-scale development projects in German-speaking Switzerland.

Office space owners have been forced to make concessions to tenants for roughly three years now due to rising vacancies and the large number of new developments. In and around Zurich and Geneva, companies willing to relocate and potential anchor tenants are being courted with incentives such as rent relief. The challenging market situation is having a lagging impact on real estate portfolios.

Total returns on office space investments declining

The gap is widening between total returns from commercial and residential portfolios. According to IPD indicators, total returns on a residential portfolio were consistently 10 percentage points higher than those on an office space portfolio from 2012 to 2016. In the five years prior, total returns were still equal. While losses in rents for office space were still less than 5% from 2010 to 2012, they have since risen to 8% of target rents.

Also, investor willingness to pay for prime locations has declined. Office space purchase prices have dropped an estimated 10% since the start of 2016, while the prices for residential properties have increased 10%. Vacant office properties currently sell at substantial discounts in order to speed up the marketing process, which can be rather drawn out.

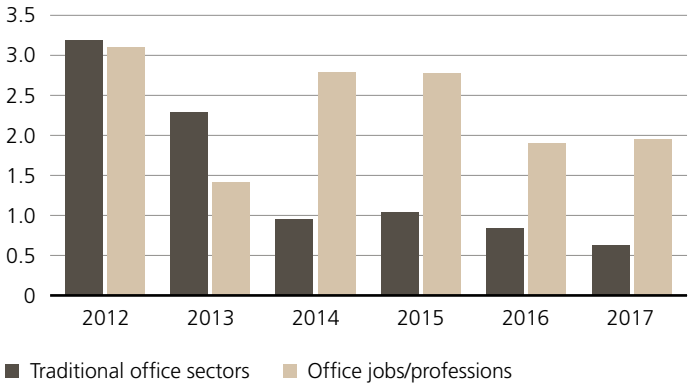
New construction activity remains high

Investments in office concrete exceeded 2 billion Swiss francs each year between 2011 and 2015. This is roughly 50% more than in the preceding 10 years. Over the last two years, by contrast, new construction activity has gradually weakened. The number of building permits issued indicates that investments have dropped by a third. Even so, new construction still stands at 1–1.5% of the building stock on an annualized basis.

Demand for space could not match that rate. From 2011 to 2015, the traditional office sectors – financial services, information and communications technology, service providers and administration – created around 25,000 jobs a year,

Demand for office space undergoes structural change

Annual employment growth rates (in %)



Source: FSO, BESTA, UBS

basically on par with the long-term average. Since 2016, however, the average increase has been a mere 12,000 jobs, rendering a growth rate of 0.8%. Indeed, demand growth in the key tenant groups has come to a standstill as well.

Demand for office space undergoes structural transformation
Office space is not only demanded by banks and service providers, but also by firms in logistics, manufacturing and healthcare. In the manufacturing sector, for example, around 50% of all employees already work in service jobs, with more on the way. The number of office jobs in all branches of economic activity has increased significantly in recent years. Office jobs have been growing at an annual rate of 2% since 2015.

"The renewal of expiring leases still involves lower rents."

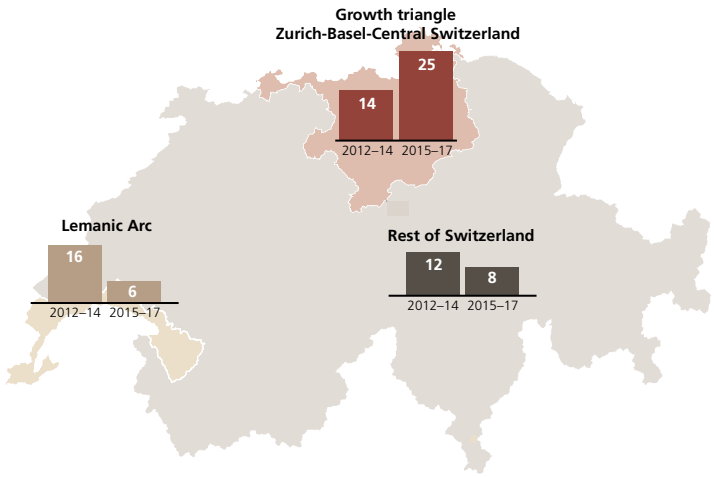
Admittedly, an increasing number of office employees does not mean an equal increase in demand for office space. Commercial office jobs, for example, have not boosted large office space leases much at all. Recently, however, the rise in employee numbers did manage to prevent Switzerland's market imbalances from deteriorating even more.

Investors focusing on growth triangle
How can we tell? Mainly from vacancies and ongoing construction activity. Most availability rates of real estate brokers have been stagnant since 2015. Even official statistics show that, in the German-speaking cities of Basel, Bern and Zurich, vacancies were stable or down, with current vacancy rates of less than 2.5%. The story was similar in Western Switzerland. In 2016, office space vacancies were stable in the Canton of Vaud and down significantly in the Canton of Geneva.

Building permits, however, have sidestepped in recent years. Between 2012 and 2014, around 40 permits were issued throughout Switzerland for major projects that each represented over CHF 20 million in construction investment. The period from 2015 to 2017 came close to this level yet again, despite a clear decline in demand. Apparently, office market investors still believe the average prospects in the Swiss office market are good enough to launch major projects.

Focus on growth triangle in German-speaking Switzerland

Number of building permits for large office projects with > CHF 20 million in investment



Source: Docu Media, UBS

However, planned projects are clearly shifting away from the Lake Geneva region to the German-speaking growth triangle of Zurich-Basel-Central Switzerland. The number of approved major projects dropped to six from 16 in the Lake Geneva region, while it went up to 25 from 14 in the growth triangle.

More corrections expected
Stronger economic growth this year should accelerate employment growth in the traditional office sectors to 1–1.5%. As a result, we should see slightly lower vacancy rates throughout Switzerland. But conditions in the office markets around Zurich and Geneva remain difficult. The large increase in office space due to the pipeline of major projects in planning or under construction leaves little hope for quick improvement. Expiring leases are still being renewed with lower rents. As a result, (further) corrections will likely be inevitable in many real estate portfolios.

Regional market summary

Most cities are "on safe ground"
Investors face the greatest risks in the economic regions of Geneva and Glattal-Furttal. Building permits have been stuck at a high level since 2015, preventing a reduction of existing imbalances. Here, the highest availability rates in Switzerland – in excess of 10% – and the large year-on-year increases in listed office space present high leasing risks.

Demand for office space remains strong in urban locations. All the urban regions examined – with the notable exception of Geneva – had moderate availability rates and appear set to decrease even further.

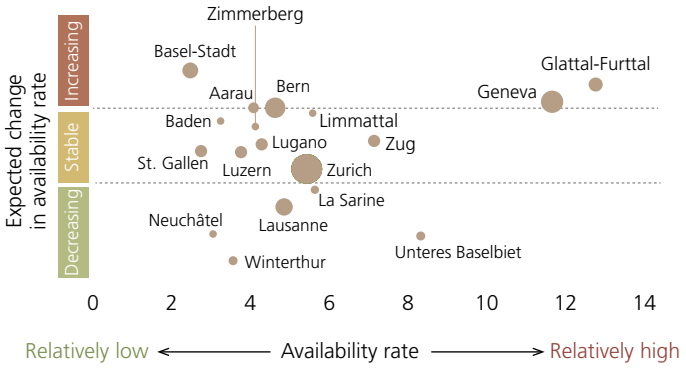
Investment activity is apparently accelerating in Central Switzerland. Building permits in Zug indicate that the region is experiencing the strongest increase in supply of all the regions. The share of advertised space in total stock was already above average here and continued to increase last year. Systematic risk is thus higher here than in Lucerne, where the office space expansion and availability rates are lower.

In Basel, construction activity is dominated by space intended for large companies' own use. Advertised space is still under 3% despite the vigorous increase in supply, signaling that office space is scarce. Once pharmaceutical and insurance corporations are done consolidating their offices, however, there is a risk that vacancies will rise.

The economic regions of Winterthur, St. Gallen, Lucerne, Lugano and Lausanne have the lowest leasing risks of the largest office space markets. Here, availability rates are low or declining. Building permits and the disappearance of the supply surplus from recent years indicate a well-balanced market.

Highest oversupply risks in Geneva and Glattal-Furttal

Availability rate as of mid-2017 (in %), expected increase in supply in comparison to potential demand*, market size represented by circle size



* Difference between supply increase (permitted office space as a percentage of the office space inventory since 2016) and potential demand (annualized employment growth 2011 to 2015, in %)

Source: FSO, CSL, Docu Media, Wüest Partner, UBS

Potential in the cities

Thomas Veraguth and Maciej Skoczek

Investments in Swiss hotels produce meager returns. Their biggest challenges are high fixed costs, low occupancy rates and cutthroat competition. Large cities, however, remain robust markets.

Make no mistake: hotels are on the decline. Many have crumbled under the growing competitive pressure. The number of beds may be up overall, but the number of hotels has dropped over 10% since 2008. Declines in the tourist cantons Grisons, Valais and Bern were in line with the national average. Ticino was hit particularly hard, with one out of every four hotels having closed its doors. Only Zurich, Geneva and Basel managed to buck the trend.

Suboptimal operating structure erodes returns

For hotel operators, the biggest challenge is the combination of unpredictable occupancy rates and a high proportion of relatively invariable costs. Unlike apartments, which generate stable income streams, hotel rooms are booked by a changing roster of guests at fluctuating market rates. However, the rooms, staff and services must be ready all the time. Also, roughly six out of every seven francs invested in hotels are tied up in property, plant and equipment – one of the highest ratios in the entire Swiss economy. Most of the property, plant and equipment consists of real estate with high maintenance costs.

The high operating expenses squeeze profit margins. According to the accounting statistics published by the Federal Statistical Office, the average profit margin (net profit relative to sales) fell from 2–3% between 2006 and 2010 to less than 1% between 2011 and 2015. That cuts into returns from hotel investments. We estimate that the return on equity for Swiss hotels has only been about 1% since 2011, despite leverage of nearly 80%. By comparison, equity in Switzerland's largest listed real estate companies returned 6–7% a year during the same period, with lower leverage.

Low demand also a structural problem

Growing competition and the cyclical slump in demand are making hotel properties even less profitable. First, occupancy rates are low at Swiss hotels. In 2016, half of all hotel beds stayed empty on average, as the strong Swiss franc made it more attractive to vacation abroad. As it turned out, 2016 became the first year in which Switzerland's tourism balance of payments was negative since recordkeeping began in 1975: foreign tourists spent less money in Switzerland than Swiss tourists spent abroad. Foreign exchange rate fluctuations and international competition affect Swiss mountain hotels the most, because their guest structure is less diversified than average. Roughly 80% of all guests in the mountain regions come from Switzerland or the Eurozone. The growing influx of guests from Asia cannot make up for declining visitor numbers from Europe, even if the number of overnight stays went up year-on-year in the summer of 2017.

Second, the low occupancy rate also points to a structural problem. Since 1995, the number of overnight stays in Switzerland has risen only 10%, while Austria and Italy have reported increases of over 20%, and France and Germany growth of even 50%. Third, rentable vacation apartments are becoming more important with the growth of online platforms (such as Airbnb). Increasing competition for hotel guests is likely to hit mountain regions hardest, since their customers are much more price-sensitive than visitors to the cities.

Hotel chains invest in Switzerland
For all these difficulties, international hotel chains have invested in the Swiss market in recent years. They dominate the one-star segment, holding roughly 80% of all rooms. In the luxury segment, half the rooms are owned by hotel chains. Their market share in the mid-tier segment (three stars), however, is a mere 10%.

Hotel chains have focused on Zurich and Geneva, where they own around 50% of rooms, and hold about 30% and 15% of the market, respectively. The number of overnight stays in large cities increased over 10% from 2008–2016, driving above-average occupancy rates. Demand is robust in major cities because a large proportion of visitors are business travelers. Business travel evens out seasonal fluctuations and reduces sensitivity to cyclical swings due to greater diversification in terms of countries of origin. Outside of cities, however, the number of overnight stays dropped 5% nationwide during the same period.

Hotel chains offer various advantages over traditional family hotels. Running several hotels under one name with more beds generates economies of scale, lowering management costs per room and boosting returns. Also, guests can benefit from loyalty programs or corporate agreements, which strengthen customer loyalty to the chains. Finally, hotel chains enter markets via franchising schemes or other long-term contracts that allow a relatively quick market exit if business is bad. If a family hotel is unprofitable, owners often cannot imagine closing its doors. These businesses are handed down over generations, with owners deeply emotionally invested; they may make a less than optimal decision to keep their hotel open.

Regional analysis

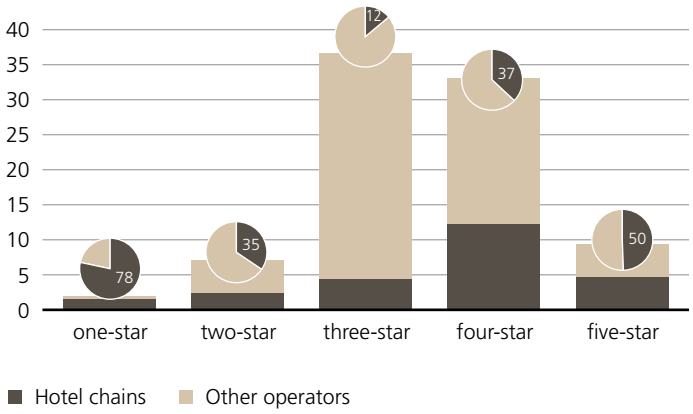
Cities: a bulwark for investors
Currently, the Zurich, Bern and Lausanne metropolitan areas offer the best prospects for Swiss hotel investments. If 2013–2016 trends continue, hotels in these *growth markets* will likely benefit from a rise in overnight stays and occupancy rates. Lucerne and Interlaken offer the best prospects as vacation destinations. The economic regions of Lucerne and Glattal-Furttal currently report the highest occupancy rates among all the growth markets.

In the *saturated markets*, occupancy rates are on the decline even as the number of overnight stays increases. The number of available beds is growing faster than demand; Basel and Geneva are prime examples. However, Geneva still has above-average occupancy rates even while the trend is pointing down.

Areas where successful newcomers crowd out current hotel operators (the "demise of the hotel") may see increasing occupancy rates despite a decline in overnight stays. These *consolidating markets* include tourist regions in Appenzell Innerrhoden, Glarus and Locarno.

Hotel chains well represented in economy and luxury segment

Number of hotel rooms in Switzerland by star category (in thousands, left scale) and number of rooms in hotel chains as a percentage of the total rooms in each star category



Source: Horwath HTL, UBS

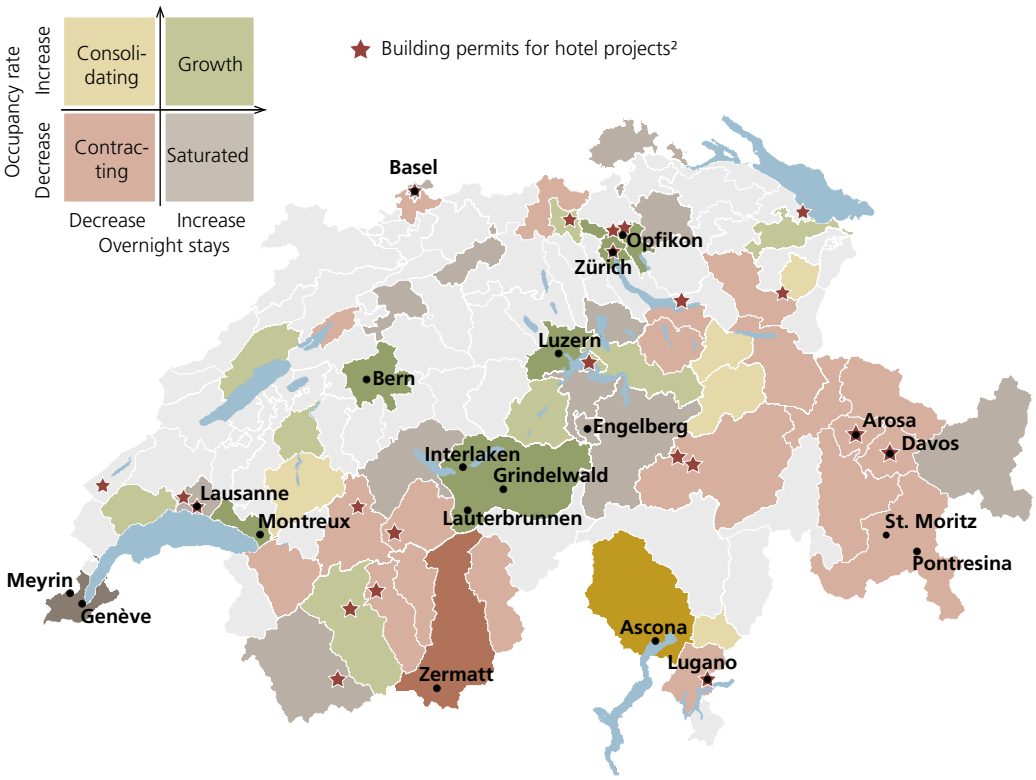
Investments in consolidating markets, though not risk-free, can be profitable with a promising strategy for attracting and retaining guests.

A simultaneous decline in overnight stays and occupancy rates can cast doubt on positive returns over the medium term. Most markets in Grisons, Upper Valais and the Bern regions of Kandersteg and Saanen qualify as *contracting markets*. Only the Zermatt market has an above-average occupancy rate.

An analysis of building permit applications submitted and permits issued since 2013 for hotel projects with a total capital expenditure of at least 20 million Swiss francs shows that investors are not afraid of contracting markets, even in a weak market environment. Competition will heat up even more and is likely to contribute to the demise of the hotel. Also, several building projects are concentrated around Zurich and Lausanne, where current market trends have made investors feel upbeat.

Many hotel projects in contracting markets

Map of Swiss hotel industry's potential[1], by market quadrant



[1] The map shows changes in occupancy rates and overnight stays between 2013 and 2016 in the main municipalities in each region; color-coded based on the matrix in the top left. Dark colored regions had an occupancy rate of at least 50% in 2016. No data are available for gray colored regions.

[2] Building permits for hotel projects with a total investment volume of at least CHF 20 million since 2013 (not an exhaustive list).

Source: FSO, Docu Media, UBS

Niche strategy without extra yield

Sandra Wiedmer and Thomas Veraguth

The parking garage market is illiquid and heavily regulated, but the yield is often not adequate given the level of risk. Modernization has become an international trend, with new technology and multifunctionality on the rise. Switzerland's inventory of parking garages is aging, so revitalization has considerable potential.

Private transportation is deeply entrenched in Swiss society. According to the Federal Statistical Office, privately owned cars are responsible for 65% of the 37 daily kilometers traveled per capita. The number of passenger cars has risen 17% to 4.5 million vehicles since 2005. Motorization rates (number of vehicles per 1000 people) have risen particularly fast outside of large cities. Records on the supply of parking spaces are far less exhaustive, however. Switzerland is estimated to have eight to 10 million parking spaces, or roughly two spaces per vehicle. Taken together, all these parking spaces are worth over 100 billion Swiss francs, with parking garages accounting for around 20% of the total, according to Wüest Partner. Most parking spaces, in other words, are located outdoors or in underground parking facilities.

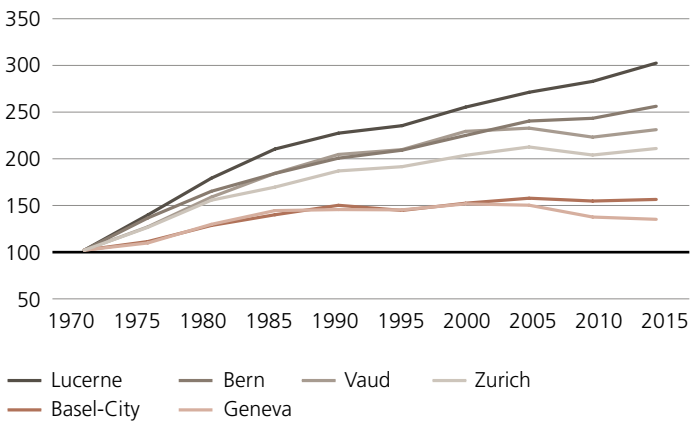
Fewer public on-street parking spaces

Planning and construction laws for private parking spaces are particularly responsible for the large number of parking spaces. Some regulations, for example, define both the largest possible number of private parking spaces as well as the minimum number required, depending on building use, floor space and access to public transportation. While parking space requirements vary depending on the canton and municipality, they are nonetheless responsible for the good parking availability, particularly in rural areas. Wüest Partner estimates that the vacancy rate for private parking spaces in Switzerland as a whole is around 10%.

In cities, by contrast, public parking spaces are much scarcer. To make downtowns more walkable and attractive, cities such as Zurich, Geneva and Bern have worked out compromises that move most public parking spaces to parking garages. The city council of Zurich, for example, passed a "historical compromise" in 1996 capping the total number of public parking spaces at the high-water mark set in 1990, and moving above-ground parking spaces to underground facilities. These urban planning decisions have increased demand for parking garages. The number of public on-street parking spaces in downtown Zurich has dropped 20% since 1990, while parking garage capacity has increased a similar amount.

Motorization rate has barely budged in city cantons

Number of passenger cars per 1,000 inhabitants, by canton (index 1970=100)



Source: FSO, UBS

Large capital outlay and regulatory hurdles
Some parking garages are government-run or operated by a stock corporation for the local government, and so aim to just break even. However, there are also parking garages run by for-profit companies in the private sector. These investments involve a large capital outlay and considerable regulatory hurdles, including environmental impact assessments for parking garages with 500 or more parking spaces, traffic management schemes or even referendums.

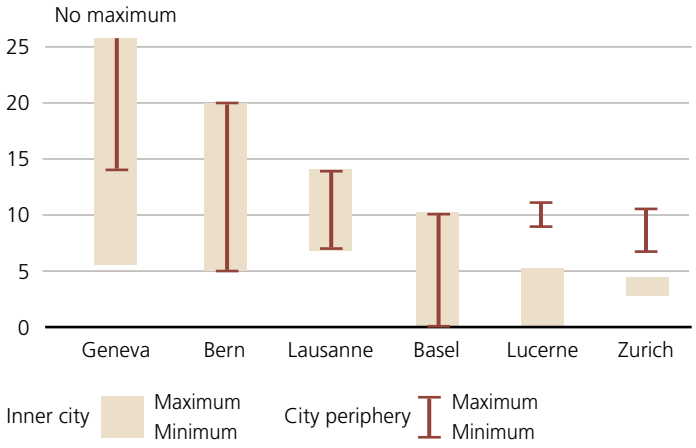
"Full-day rentals can generate up to four times as much income as long-term leases of parking spaces."

This may explain why parking garages have remained a niche investment market with less appeal than other real estate sectors. Parking garages in top locations often have a monopoly, and can charge clients high parking fees. Nevertheless, the yields often do not reward investors enough for taking on more risk than in other property segments. According to Wüest Partner, parking garage investments earned a net rental yield of around 4% in 2016 – on par with office space. The financials of listed Swiss real estate funds tell a similar story: according to our analysis, parking spaces in these portfolios yielded an average of 3.8% per year.

Invest directly or indirectly
Parking garages have lower maintenance costs than other real estate sectors. Investors who acquire parking garages directly can manage the facility themselves or outsource operations to an outside company. Outsourcing offers the advantage of long leases and steady income. Operating investors can choose among various rental strategies. We estimate that full-day rentals can generate up to four times, and hourly rentals as much as eight times as much income as long-term leases of parking spaces with monthly rent payments. Hourly rentals carry more operator risk, however, since the spaces may end up vacant and generate no income at all. Long-term rentals can also be restricted to certain times (daytime or weekdays, for example).

Zurich and Lucerne most heavily regulated

Minimum required and maximum permitted number of private parking spaces per multi-family dwelling* in the inner city and on the city periphery



* Multi-family dwelling with six 100m² apartments with 3.5 rooms and four 120m² apartments with 4.5 rooms

Source: Parking space or building regulations for the cities and cantons, UBS

Alternatively, one can invest in parking garages indirectly through funds. Switzerland does not have any parking-specific funds. European vehicles that mainly invest in the Netherlands, Germany, France and the UK earn an annual distribution yield of around 6% through leverage, which is better than the average 4% dividend yield paid by European real estate equities. Long-term leasing of individual parking spaces can generate an average gross yield of 5%, according to data on Switzerland's largest urban centers. Now that parking apps have made it much easier to temporarily rent parking spaces, short-term rentals may be profitable as well.

Parking garages face new demands

Digitization and new mobility forms
Digitization and connectivity have come to parking garages. More cities and parking structures are equipped with parking guidance systems that control traffic flows and make available parking spaces easier to find. Occupancy rates are higher thanks to more efficient signage. Some parking garages even have an online reservation system for parking spaces with lower rates for advance booking.

Autonomous vehicles are placing new demands on parking garage infrastructure, too. The world's first automated valet parking service is slated to launch this year as a pilot project at the Mercedes-Benz Museum in Stuttgart. It works by connecting vehicles to smart infrastructure. The driver can drop off the vehicle at the entrance to the parking garage. A simple smartphone command then guides the vehicle to an assigned parking space. Such automated parking requires a drop-off and pick-up area, where drivers and passengers can get into and out of the vehicles, as well as an intelligent system to control the vehicles. The pay-off is huge, though: it improves space utilization by up to 20%, allowing parking garage operators to squeeze even more vehicles into the same area. Autonomous valet parking is not (yet) legally permitted in Switzerland at all or Germany in general, however.

Multifunctionality
Denser cities and tighter quarters have challenged architects and urban planners to make better use of space. For parking garages, this means a shift toward multifunctionality. Innovative new concepts have proven that parking garages can have their own personality and charm, instead of just being grim concrete bunkers. Garage roofs now hold observation platforms, large playgrounds, recreation areas and even parks with greenery. Building interiors house art exhibitions or open spaces for the public, for example.

Parking garage properties can also be converted to entirely new primary uses. For example, a parking garage in Cologne was recently redesigned into a combination condominium/parking building. The project transformed an unprofitable parking garage into an attractive property; all the condominiums have been sold. Another revitalization project in Cologne, to be completed this year, will convert a centrally located parking garage into a hotel complex with shops and parking.

Many of Switzerland's 1,500 parking garages (Wüest Partner estimate) were built during the parking garage construction boom of the 1960s and 1970s. Clearly, they hold tremendous potential for revitalization and modernization.

Not cheap

Stefan Meyer and Elias Hafner

Listed real estate securities combine attractive distributions with the ability to hedge against price volatility in the overall stock market. However, their prospects are dimmed by high market premiums and gradually rising interest rates. Companies now focus on replacement buildings, renovations and flexible usage concepts.

Last year, real estate funds and equities underperformed the overall stock market for the first time since 2013. They started the year strongly, but lost steam in the summer. Profit-taking, greater concerns about vacancies and declining rents, a growing preference for cyclical stocks, and large numbers of new issues and capital increases by real estate funds ate into the total returns of the first half of the year. After rallying in December, real estate funds were still up nearly 7% and real estate equities 10% at the end of 2017. The Swiss Performance Index (SPI), however, returned 20% last year.

Real estate equities become independent

Real estate equities are impressive long-term performers. Since being established as a segment of the Swiss equity market shortly after the turn of the millennium (see page 40), real estate equities have outperformed the overall stock market in 10 of the last 18 years, and are the unrivaled performance champions for the entire period. Since 2000, real estate equities have returned over 100 percentage points more than the SPI in terms of total return. Their price trends over time are also relevant for investors. Until about 2013, real estate equities tended to exhibit price patterns very similar to the overall stock market.

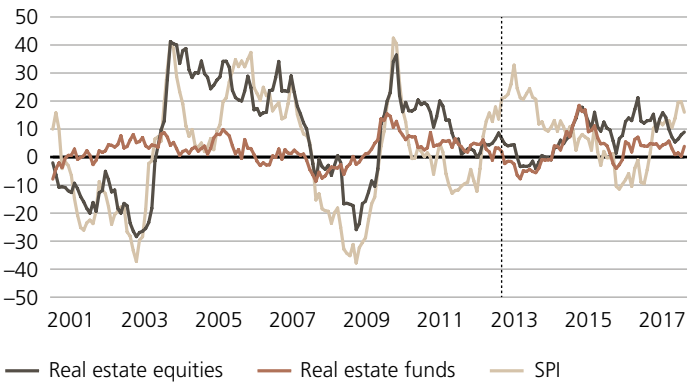
This correlation with the total stock market has been weakening since 2013, though. When interest rates rose in 2013, for example, real estate equities corrected because US monetary policy was expected to tighten. General equities, however, paid good returns. Prices of real estate equities and real estate funds, by contrast, have been very strongly correlated since 2013, a change from the previously weak correlation. In effect, real estate equities have emancipated themselves from the overall stock market and now constitute an independent sector. This more real estate-specific behavior has also increased their sensitivity to interest rates.

Minimal price gains expected for indirect real estate investments

We expect the stock market to be robust in 2018, given the upbeat economic forecasts. However, the rising tide of the overall market will not lift all boats equally. Real estate equities

Real estate equities developed a life of their own in 2013

Rolling performance* over 12 months (in %)



* Real estate equities: all equities equally weighted, excluding dividends; SPI: excluding dividends; real estate funds: excluding distributions

Source: Bloomberg, Thomson Reuters, UBS, as of December 29, 2017

Grisons Museum of Fine Arts, Chur

"Companies are striving to lock in interest rates for longer terms."

now have a distinct life of their own, after all. With premiums averaging 29%, real estate equity valuations started out this year rather high by historical standards. Interest rates are also expected to climb slightly by the end of the year, which tends to lower the prices of real estate securities. In 2018, we expect real estate equities to deliver a total return that is not much higher than their dividend yield of around 4%.

The average premium for real estate funds was 27% by the end of 2017, well above the long-term average. This is partly due to direct investors' continued willingness to pay high prices. Prices should not climb any more this year, though. However, real estate funds currently offer an attractive distribution yield (2.6%) as well as diversification if equity market prices come under pressure across the board.

Fundamental analysis

Interest costs dropping more slowly
Debt interest for the real estate companies under review fell from 2% in 2015 to 1.85% in 2016. The average maturity of all the companies' debt was close to five years. Of these companies, Zug Estates, had the longest average maturity (8.2 years), and Allreal the shortest (three years). Even though general interest rates did not fall any more in 2017, companies probably still managed to lower their interest rates modestly once again. However, these cost savings are dwindling as the impact of the time lag fades. Companies are therefore looking to lock in interest rates for longer terms, reflecting expectations of a moderate increase in interest rates over the medium term.

Average mortgage rates for six of the best-capitalized real estate funds dropped 0.2 percentage points to around 1.25% in 2017. The biggest fund even managed to take out short-term mortgages at negative interest rates. As loans

with interest rates as high as over 2% come due, average interest rates will continue to drop here and there. Real estate funds have lower interest rates than real estate equities due to somewhat shorter average maturities (4.3 years), larger residential allocations and less leverage. That does not mean that balance sheets at Swiss real estate companies are weak, though: equity ratios are 40% or more.

Vacancies in residential portfolios on the rise

Quality is measured not just by balance sheets, but also by proactive property management. Property and tenant care clearly impacts rental income and vacancy rates. In 2016, the average vacancy rate dropped from more than 7% to 6.6%. We expect that this rate fell even further to 6% last year. Allreal and PSP are likely to have made the greatest progress. Zug Estates and Flughafen Zürich have the lowest vacancy rates. To fill vacant space and maintain rent levels, though, new leases now have to include enticements like rent-free periods and financing for tenant improvements.

The overall rent default rate for real estate funds has changed very little since 2016, coming in near 5%. However, trends vary depending on the usage type. While rates in portfolios that focus on commercial space went down, vacancies in residential real estate portfolios went up – echoing the trends in the Swiss rental market.

Real estate equity sector – independent with upside potential

Pure-play real estate equities have been trading on the Swiss Exchange for roughly 45 years. The oldest listed firm, Intershop Holding, was established in 1962 and has been listed since 1972. Other companies did not follow until shortly after the turn of the millennium. Spring 2000 saw a veritable "IPO big bang": four new pure-play real estate companies joined the SIX Swiss Exchange ticker in a few months: Allreal Holding, PSP Swiss Property (PSP), REG Real Estate Group (which was acquired by PSP in May 2004) and Swiss Prime Site (SPS). Flughafen Zürich AG, established in 1948 as "Flughafen Immobiliengesellschaft," was listed in 2000, too. Today, the company is more than just an airport operator; it is also a successful landlord.

In December 2005, the Swiss Exchange launched the SXI Real Estate Shares Index, which now has 12 real estate stocks and a capitalization of 16 billion Swiss francs. Until 2016, however, real estate equities were still included in the financial service sector, in the shadow of large banks and insurance heavyweights.

In September 2016, real estate equities were emancipated. A new, 11th sector was born, and now features in the world's leading share indexes like the S&P Dow Jones and MSCI, raising the presence and prestige of real estate equities. Switzerland, however, has not yet taken this step, so the Swiss real estate equity sector harbors considerable upside potential. Real estate companies publicly traded in the Swiss equity market make up only 1% of the estimated total value of Switzerland's real estate.

More digital, flexible, comprehensive
Real estate companies and funds are making defensive plays. However, it is still hard to generate growth in this market environment. Real estate companies stand a better chance, since they generally manage their portfolios more actively and operate in other business segments, which should protect dividends. For the time being, the companies are developing very little new land for their own portfolio and are only carrying out large projects if they are heavily pre-leased. They are focusing instead on replacement buildings, renovations, higher density, and new concepts and services. Landlords are responding more to their customers' needs, analyzing their customer data more precisely, building more sustainably and relying more on digital assistance.

Investis, for example, acquired equity in Polytech Ventures, a start-up for technology-based real estate services. HIAG has invested in cloud services with dedicated fiber optic lines for companies. And Zug Estates plans to transition its portfolio to renewable energy and a zero-carbon footprint over the medium term. Sustainability is becoming increasingly important, even for real estate funds. After all, modern-day designs make it easier to repurpose real estate and provide much greater flexibility in how properties can be used.

Key financials for the largest listed Swiss real estate equities

Unless otherwise stated, all figures are in %

	Flughafen Zürich	SPS	PSP	Allreal	Mobimo	Inter-shop	HIAG	Zug Estates	Investis
Market capitalization[1]	6758	6076	4013	2650	1559	986	923	914	728
Vacancy rate									
2015	1.5	6.7	8.5	7.5	4.7	11.5	16.0	5.4	3.3
2016	2.0	6.1	9.3	5.1	4.8	11.3	15.3	1.8	3.7
2017[2]	1.8[3]	<5.5	<8.5	2.9[3]	4.9[3]	~11.3	15.1[3]	1.4[3]	3.3[3]
Dividend growth									
2011–2016	27.5	0.5	2.2	0.9	2.1	0.0	–	–	–
2016–2019[4]	3.3	0.4	1.0	4.2	1.6	0.0	4.0	8.0	0.0
Pay-out ratio[5]									
Dividend policy[2]	Variable div. + initial additional div.	≥ CHF 3.70	>70	~100 of non-P&D profits	≥ CHF 10	CHF 20 since 2007	4[5]	≤ 40	Attractive + stable
2016	82	92	89	82	63	70	109	47	216
2017[4]	77	95	89	84	97	67	102	39	121
Average 2011–16	52	92	89	78	91	76	105[6]	44[7]	–
Dividend yield									
2017[4]	2.9	4.4	3.8	3.6	4.0	4.1	3.3	1.3	4.1
2018[4]	3.1	4.4	3.9	3.8	4.2	4.1	3.4	1.4	4.1
Equity ratio[3]	55	43	54	52	43	42	54	57	47

[1] In million CHF [2] According to company sources [3] As of the 1st half of 2017 [4] Consensus forecasts
[5] As a percentage of net asset value [6] 2014–2016 [7] 2012–2016

This table is a reference list and does not constitute a recommended list.

Source: companies, UBS; as of November 14, 2017

Superstars or bubbles?

Matthias Holzhey and Maciej Skoczek

House prices in big cities are especially likely to skyrocket during market booms due to expectations of constantly rising prices. A correction seems inevitable once sentiment shifts or interest rates rise. Toronto faces the greatest risk of a real estate bubble.

Last year alone, prices in Munich, Toronto, Amsterdam, Sydney and Hong Kong soared more than 10%. A 10% annual rate means that house prices double every seven years – a clearly unsustainable pace. Nevertheless, most residential property buyers are still afraid of missing out on further price gains. This price behavior seems logical for three reasons.

First, financing is cheaper than ever before in many cities. Second, the global increase in wealthy households is driving demand for upmarket neighborhoods. Third, construction activity cannot keep pace with demand.

Low mortgage interest rates gloss over market imbalances

The decade-long decline in mortgage interest rates has made home purchases more attractive and driven up the average willingness to pay for residential property. In European cities, for example, annual usage costs for condominiums (interest and principal payments for mortgages) are still below the 10-year average, even though real home prices have increased 30% since 2007. In Canada and Australia, the negative effects of higher prices on affordability are largely offset by lower mortgage interest rates.

Will prices rise forever?

Expectations of continued long-term price growth have fueled demand for real estate investments in large cities. Many market participants assume that prime locations will see the biggest increases in value over the long term – much like superstars. "The Economics of Superstars" explains why small numbers of people earn enormous amounts of money in certain industries such as show business.[1] Superstars earn much more than the average worker – well out of proportion to the difference in quality or performance. Accordingly, home prices in the most attractive cities should significantly exceed prices in average cities or rural areas over the long term, even though the property is unaffordable for the average household. For empirical evidence of this theory, look no further than Hong Kong, London or San Francisco.

There is an intuitive explanation for this phenomenon: national or global increases in wealthy households generate continuous surplus demand for prime locations. In other words, if the supply does not grow fast enough, prices in "superstar cities" will become decoupled from rents, incomes and nationwide price levels. The data seems to bear out this hypothesis: In cities surveyed by the *UBS Global Real Estate Bubble Index* (see page 44), home price inflation was 170% between 1980 and 2017. The general inflation rate in these countries was 100%, while real income in the cities rose 50% and rents rose a mere 30%.

[1] Rosen, Sherwin. 1981. "The Economics of Superstars." American Economic Review 71 (5): 845-58

Upper West and Hotel Waldorf Astoria, Berlin

"Nine of 10 property crashes were preceded by a clear overvaluation signal."

Growing international demand, especially from China, has crowded out local buyers and lent further credence to the "superstar city" theory in recent years. An average price increase of nearly 20% over the last three years has confirmed even the most optimistic expectations.

Susceptible to excesses

These expectations have made large cities especially susceptible to excesses in market booms. The belief in endlessly rising housing prices is extremely self-reinforcing and pro-cyclical. It also explains why global cities have seen bigger price corrections than the countries as a whole. Following the widespread corrections of the late 1980s, it took most cities until the early 2000s to recover. Anyone who bought a home in London in 1988, for example, had to wait until 2013 – 25 years, in other words – until their investment had gained more value, in percentage terms, than the average British home.

Fundamentals matter

One look at the boom and bust cycles of housing markets over the last 35 years highlights the importance of fundamentals. Nine of 10 property crashes of –15% or more were preceded by a clear overvaluation signal, according to the methodology of the *UBS Global Real Estate Bubble Index*. Real-time calculations for 1980 to 2010 indicate a 50–60% probability of a crash within 12 quarters after such an overvaluation signal. By comparison, there is a 12% advance probability of a real estate crash in any quarter of that period.

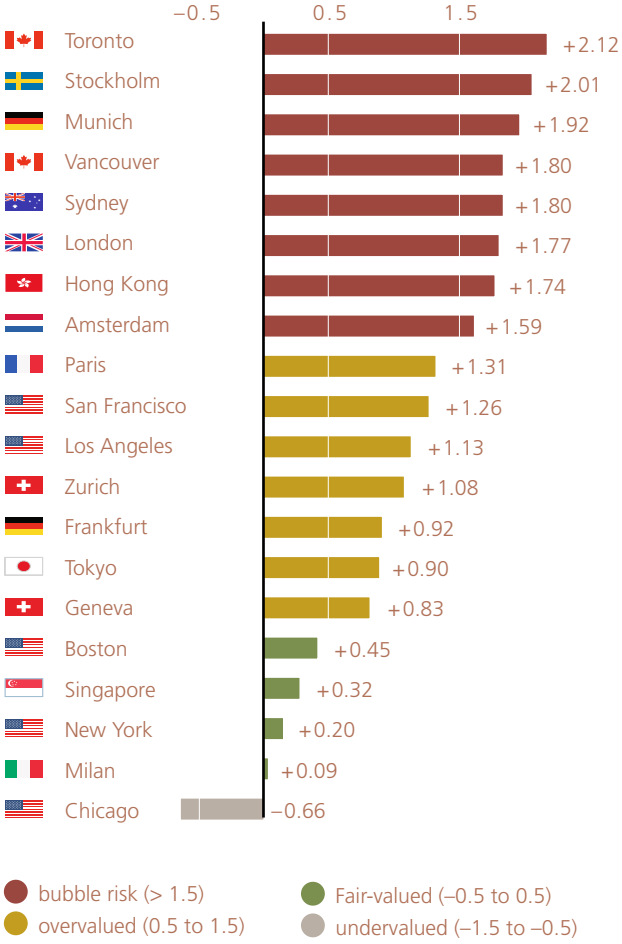
Notable, however, is that the model has sent out warning signals too often and, in some markets, too early. Investors who followed these signals lost out on high capital gains, especially in recent years, when central banks distorted market incentives with unprecedented quantitative easing programs. On average since 1980, though, avoiding overheated markets has been a wise move.

UBS Global Real Estate Bubble Index

According to the *UBS Global Real Estate Bubble Index*, Toronto faces the greatest risk of a bubble following last year's significant increase in imbalances. Stockholm, Munich, Vancouver, Sydney, London and Hong Kong are still showing telltale signs of a bubble; Amsterdam has joined the group, too, following last year's run of price increases. Homes in San Francisco, Los Angeles, Zurich, Frankfurt and Geneva are overvalued. By contrast, property markets in Singapore, New York and Milan are fairly valued, while Chicago is undervalued, as it was last year.

Price bubbles are a regular occurrence in property markets. The term "bubble" describes significant and persistent asset mispricing that cannot be proven to exist until it bursts. However, property market excesses show repeating patterns in historical data. Typical signs include a decoupling of prices from local incomes and rents, as well as distortions of the real economy, such as excessive lending and construction activity. The *UBS Global Real Estate Bubble Index* uses the presence of such patterns to measure the risk of a real estate bubble.

Latest index scores for the housing markets of select cities



Source: UBS

Price-to-income ratio
In most global cities, not even a highly skilled employee in the service sector can afford to buy a 60-square-meter apartment. Even someone earning twice the average wage of a highly skilled employee in the service sector would be hard-pressed to buy an apartment of this size in Hong Kong. Unaffordable apartments are often a sign of strong foreign investor demand as well as strict construction and rental market regulations. Should investor demand decline, the risk of a price correction will rise, and the long-term prospects for further price increases will deteriorate.

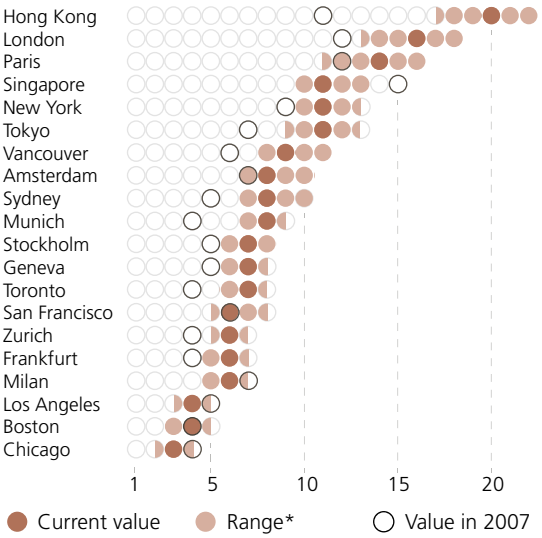
From a home buyer's perspective, affordability also depends on mortgage interest rates and repayment obligations. Relatively high rates for interest and principal payments in the US, for example, weigh heavily on monthly incomes despite relatively low price-to-income ratios. Conversely, it is easy to maintain high purchase prices if full repayment of principal is not required and interest rates are low, as is the case in Switzerland and the Netherlands, for example.

Price-to-rent ratio
An extremely high price-to-rent ratio indicates that house prices are heavily dependent on low interest rates. In all cities with indicators above 30, house prices are susceptible to a sharp correction should interest rates go up. Indicators below 20 are only found in US cities, which is due, among other things, to higher interest rates and comparatively weak regulation of the rental market. Landlord-tenant laws in France, Germany, Switzerland and Sweden, by contrast, are very pro-tenant and prevent rents from reflecting the actual market level.

If indicators for the price-to-rent ratio skyrocket, then this is not only a reflection of interest rates and rental market regulation, but also of the expectation of increasing prices, as in Hong Kong and Vancouver. Investors assume that capital gains will compensate them for inadequate rental income. However, should these hopes fail to materialize and expectations weaken, housing owners in markets with high price-to-rent ratios will probably have to absorb significant capital losses.

Home ownership barely affordable

Number of years that a skilled employee has to work to buy a 60m² apartment

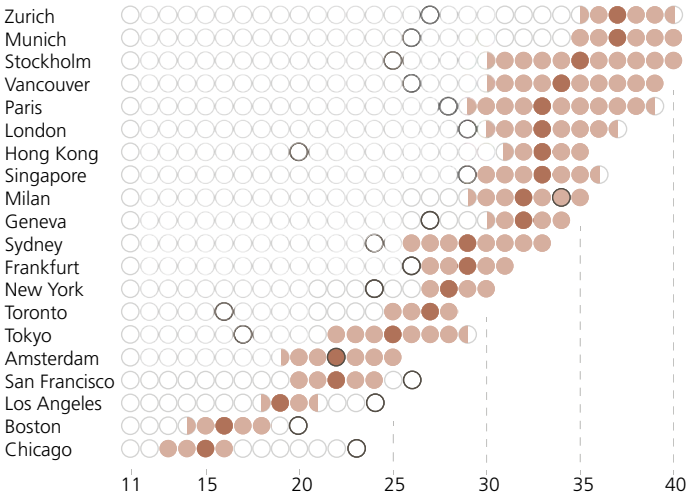


* Range due to differences in data quality

Source: UBS

High sensitivity to interest rates

Ratio of purchase prices to rents for a comparable apartment



Where opportunities still reside

Thomas Veraguth, Nena Winkler and Sandra Wiedmer

The global real estate cycle is drawing to a close, shifting the focus toward rental yields. Residential and logistics properties in Continental Europe still offer opportunities in this environment. However, political risks have dimmed the long-term outlook in some EU countries.

The hunt for yield in response to historically low interest rates worldwide has spurred real estate investment and pushed up property prices globally. Last year, for example, prime yields fell to all-time lows in virtually every sector and region. The only saving grace: the large yield gap between government bonds and real estate still makes investment in properties attractive. The global real estate cycle has already begun its gradual decline, though. Global transaction volumes have fallen roughly 7% since peaking in mid-2015, according to Jones Lang LaSalle.

Property values will rise far less this year than in previous years due to softer fundamentals and the well-advanced market cycle. They may even fall in the course of 2019. This softening of growth rates will make rental yields more important. Unfortunately, the expected large supply of new properties limits the potential for significant rent increases. Investors will be well-advised to avoid excessive locational risks and pay close attention to occupancy rates and tenants' long-term credit standings. Some markets still have promising investment opportunities. Generally speaking, though, market conditions are less attractive than they were a year ago. We recommend being selective about property purchases and keeping leverage moderate.

Majority of markets unattractive

The balance between risk and opportunity has deteriorated even more worldwide in the past two years. We would currently only describe one-third of the markets we analyzed as balanced or attractive.

APAC

We view Japan, China, Australia and Hong Kong as unattractive due to the absence of macroeconomic drivers, generally high levels of debt and the fact that supply is growing faster than demand. In Singapore, by contrast, more stable economics will likely prop up the real estate market and gradually restore the balance between supply and demand.

European real estate relatively attractive

Relative risk/return relationship[1]

	Overall	Office	Retail	Residential	Logistics/ Industrial
US	Balanced	Balanced	Unfavorable	Favorable	Balanced
Canada	Unfavorable	Balanced	Unfavorable	Unfavorable	Balanced
UK	Unfavorable	Unfavorable	Unfavorable	Balanced	Favorable
Cont. Europe[2]	Favorable	Balanced	Balanced	Favorable	Favorable
Germany	Favorable	Balanced	Balanced	Favorable	Favorable
Switzerland	Unfavorable	Unfavorable	Unfavorable	Unfavorable	Balanced
Japan	Unfavorable	Unfavorable	Unfavorable	Unfavorable	Balanced
China	Unfavorable	Unfavorable	Unfavorable	Unfavorable	Unfavorable
Australia	Unfavorable	Unfavorable	Balanced	Unfavorable	Favorable
Hong Kong	Unfavorable	Balanced	Unfavorable	Unfavorable	Unfavorable
Singapore	Balanced	Balanced	Unfavorable	Balanced	Balanced
Brazil	Unfavorable	Unfavorable	Unfavorable	Unfavorable	Unfavorable

Favorable Balanced Unfavorable

[1] This assessment considers the attractiveness of a market compared to its own historical data.

[2] Ex Germany and Switzerland

Source: UBS

Americas
Risks and returns are more or less balanced in the US market. Investors can still find opportunities among residential, office and logistics properties. The Canadian real estate market, in contrast, exhibits elevated systemic risks due to high household debt levels, while Brazil faces political and economic risks, which is why we classify both markets as unattractive.

Europe
We view the UK and Switzerland as unattractive due to looming imbalances while Germany, France, Spain and Italy harbor upside potential, particularly for housing, which is driven by urbanization, and for logistics properties, which have benefited from demand for centrally located warehouses and distribution centers.

"Political risks in other countries boost interest in Germany."

Focus on Europe

UK – Real estate cycle far advanced
Prospects are dim due to political uncertainty leading up to Brexit and the Bank of England's tighter monetary policy. The UK is also farther along in the cycle than other markets. We expect net present values to decline as much as 5% in the next 12 months. Rent growth should decline in the office, retail and logistics segments as office vacancies rise due to an influx of new properties and relatively fragile demand. We recommend holding prime properties with long-term rental contracts and stable cash flows. New investments should focus on logistics and mixed-use urban building complexes.

Germany – On the rise, but uncharted territory ahead in the medium term
Low financing costs, capital inflows and a booming economy have extended the upswing phase of the real estate cycle. Political risks in other countries have heightened interest in Germany, widely viewed as Europe's safe haven. Investors have unfortunately not given enough consideration to the long-term risks surrounding Germany's contingent liabilities in the Eurozone. Nonetheless, the market still contains attractive value-add opportunities, such as buildings in prime locations that are (partially) vacant or in need of renovation. Prime office yields, unfortunately, average only 3.2% for the top five cities (Berlin, Düsseldorf, Frankfurt, Hamburg, Munich). These historic lows are driven by strong investor interest, a limited supply of properties and a relative dearth of sellers. Office space vacancy rates (currently 5.2%) will likely fall even further, which should push rents up slightly if the economy continues to grow. The retail sector encompasses everything from booming online providers and prime retail-tainment-type malls to secondary properties whose appeal is fading. Housing demand is strong in large urban areas; vacancy rates are less than 2% in Munich and Berlin. The logistics sector is experiencing strong demand, with prime yields currently at 4.5%.

France – Growing optimism centered around Paris
Paris ranks second among European cities, surpassed only by London. Its investment market is broad, liquid – and expensive: prime yields are 3% or less. Demand for office space was recently more robust, while relatively tight supply has created openings for rent increases for modern properties in good locations. The impending Brexit has made Paris relatively attractive for companies keen to maintain access to the European market. Paris is the world's third-largest investment location, so the additional demand will unlikely shift the market enough to drive up prices. Lyon, France's second-most important investment location, has a relatively dynamic economy, but plays little to no role on the global stage. Moreover, Lyon's yield premium over Paris is below its historical average.

Spain – Recovery concentrated in Madrid and Barcelona

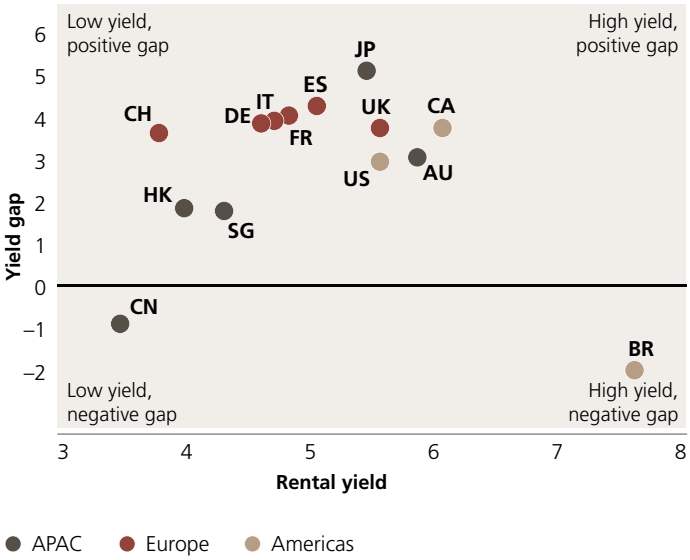
Commercial properties have benefited from an accelerating business cycle and falling refinancing costs. Due to the repeated euro crises, the cycle is less advanced in Spain than in other European markets, but prime locations – especially in Madrid and Barcelona – have caught up quickly in the last two years, thanks to foreign capital. As a result, prime yields are now 3.8% – near the levels found in other large European cities. Yields remain stubbornly high, relatively speaking, in the peripheries of both cities, though. Rents are expected to rise in Madrid as well as Barcelona since demand is stable and supply is fairly tight. Prime rents for office space in Madrid are still 30% below their 2007 highs. Investors in search of good investment opportunities can look at mixed-use real estate or can consider renovating properties in locations near downtown Madrid or downtown Barcelona.

Italy – Political discord stymies broad-based upswing

Italy may not have completely recovered from the latest financial crisis, but that did not stop real estate transaction volumes from rising in 2016. The only liquid location, Milan, where foreigners account for two-thirds of the transactions, generated a bit more than 40% of the transaction volume, followed by Rome at 14%. Retail space is in demand in Milan and Rome due to rising tourist numbers. This generally high demand, taken together with the relative paucity of prime properties, is continuing to exert pressure on initial yields, which currently hover around 4.0% for office real estate in prime locations in Rome, and around 3.5% for equivalent properties in Milan. Renovations in Milan represent an attractive form of investment. Unfortunately, the medium-term outlook is clouded by political discord and the highly fragile banking sector.

Positive yield gap for most markets

Yield gap between income return and yield on 10-year government bonds (in percentage points) as well as income return* (in %), 2018 values are estimated



* The authors estimated the rental yields for CN, HK, SG and BR

Source: Ares, Bloomberg, Centaline, IAZI, Moody's/RCA, MSCI/IPD, NBS, Rating and Valuation Department Hong Kong, URA, UBS

Existing properties could depreciate faster

Nena Winkler and Thomas Veraguth

Long-term trends open opportunities for innovations that ultimately impact property values. These innovations don't generally prop up building and land values directly, but rather apply more pressure to adapt. Real estate investors keen to minimize value losses should watch seven investment themes particularly closely.

Property value is mainly determined by supply and demand, and can be represented as the weighted average of fair value, capitalized value and new construction value. The total value of a property consists of the value of the land and the value of the buildings constructed on the land. Generally speaking, land accounts for one-third and buildings two-thirds of a property's value.

Land is forever; buildings are temporary
The *land value* is the equivalent of a capitalized stream of payments that the owner can generate by using the land in the most profitable way possible. Location plays a big role in property values. An attractive location can determine a property's leasability and market liquidity.

The *building value* is determined by age, fixtures and fittings, construction quality and current lease status. Unlike land, buildings have a limited useful life over which they are depreciated. Depreciation rates vary depending on the property's construction quality relative to the market standard. The average annual depreciation rate is up to 2% of the building investment value for residential buildings, up to 4% for commercial structures, and up to 8% for factories and warehouses.

Direct and indirect effects on property value
New building technologies and building methods directly affect building value. Better constructed buildings tend to be worth more. Conversely, older buildings will depreciate more quickly if buildings are constructed at nearby competing locations using more advanced technologies. Building depreciation is generally offset by the rise in property value attributable to rent increases. However, buildings can depreciate so fast that the overall building value will still fall. If location attractiveness improves due to, say, urban planning programs or increases in building density, the resulting indirect effects will primarily boost the land value in absolute terms and as a share of total property value.

Significance of long-term investment themes for real estate investments

Seven investment themes affect property values
We have analyzed the impact of innovations and innovation-related investment themes (see p. 51) on the fundamental drivers of real estate value. These drivers break down into three basic categories: short-term, long-term and institutional. Short-term factors are macroeconomic components such as per-capita earned income, the business cycle, inflation, exchange rates or the discount rate. Long-term drivers of real estate value include demographics, location attractiveness, construction technology and construction efficiency. Institutional factors refer to aspects of the legal and regulatory environment such as taxes, levies, regulations or laws. The following investment themes have a significant impact on real estate value:

Energy efficiency, clean air and carbon reduction, automation and robotics
More expensive construction standards relating to internet technologies, smart building applications, energy efficiency, emissions reductions or alternative energy sources increase the cost of new buildings and thus drive construction cost inflation; development tends to be more expensive. At the same time, construction technology is constantly improving even as the construction industry itself seeks out new efficiency gains through innovations such as digitization or automation and robotics.

Thanks to all these trends, older buildings should be steadily replaced by new, better and more efficient structures, and thus gradually lose value. However, tenants, with their rising expectations, are unwilling to absorb all of the increase in new construction costs, even if it means lower utility costs. Steering taxes introduced to accelerate these trends can make older buildings at a particular location even more expensive. Thus, market-standard properties can certainly command higher rents, but they cannot generate excess returns over an extended period of time.

Smart mobility and mass transit rail
Building densities in urban centers are rising due to spatial planning, mass transit rail and smart mobility. Mass transit rail increases land scarcity in the inner city because it concentrates demand. This causes land values to rise, since each unit of space can now generate more value. Whether this means prospective tenants will willingly pay more for a particular property depends largely on the location's attractiveness and the tenants' own earning capacity, not on the innovations themselves.

Retirement homes
Longer life expectancy has fueled demand for retirement homes with different levels of care and assistance, driving up the property values of retirement and nursing homes. Demand is also rising for independent living properties featuring amenities such as wheelchair accessibility and senior-friendly bathrooms. In addition, more senior citizens now want to live in cities in order to have better access to medical care.

E-commerce
E-commerce has fundamentally changed how people shop. This still-growing trend affects retail properties by increasing demand for high-end properties in urban locations that can serve as showrooms and retail-tainment centers, while curtailing interest in retail space in sub-prime locations. In the logistics sector, e-commerce has fueled demand for properties located near city centers, since they are perfectly positioned to enable quick, efficient last-mile delivery.

Excess returns only temporarily possible
Real estate investors can leverage innovations and new technologies to temporarily earn an excess return.

However, it's often impossible to pass on all the additional costs to tenants. Innovations can quickly establish themselves as the new standard, depending on the level of new construction activity and the speed of adaptation. It doesn't take long for "obsolete" or non-upgraded inventory to start selling at a discount.

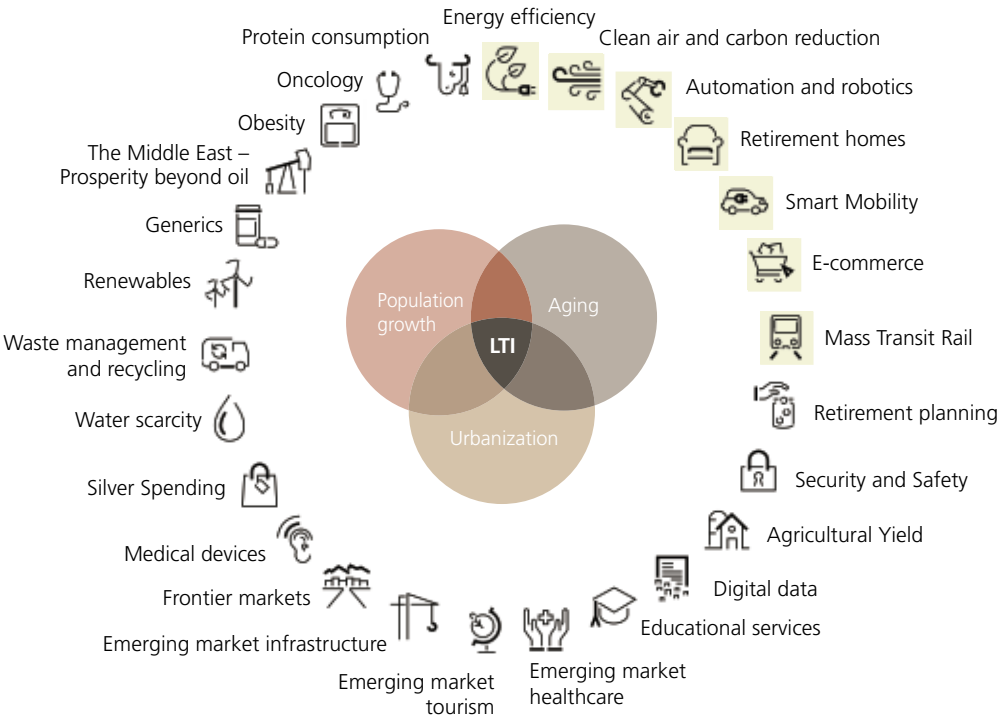
Long-term trends and related investment opportunities

The UN estimates the world population will grow to around 10 billion by 2050 from 7.5 billion presently. Up to 9% of the world population will live in 41 megacities by 2030, most notably Tokyo, Delhi and Shanghai, and 70% will inhabit an urban setting by 2050. In 2030, the number of people aged 60 and up will outnumber the under-25-year-olds in developed nations. These three global trends – urbanization, population growth and aging – present challenges and opportunities alike for investors.

Seven long-term investment themes significantly affect real estate investments
UBS CIO WM identified 26 long-term investment themes based on these three defined trends. We then analyzed these themes in terms of their impact on property values. Based on this analysis, we believe property values will be particularly impacted by seven themes and the innovations underlying them: energy efficiency, clean air and carbon reduction, automation and robotics, retirement homes, smart mobility, e-commerce, and mass transit rail.

The 26 long-term investment themes (Longer Term Investments LTI) of CIO WM

Arranged according to their influence on real estate values, decreasing, in a clockwise direction



Investment themes with the highest impact on real estate assets

Source: UBS

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Allreal 1, 2, 3. Flughafen Zuerich 3. Intershop Holding AG 3, 4. Mobimo Holding 1, 2, 3. PSP Swiss Property 1, 2, 3, 5, 6. Swiss Prime Site 1, 2, 3. Zug Estates 3.

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As of 9 January 2018

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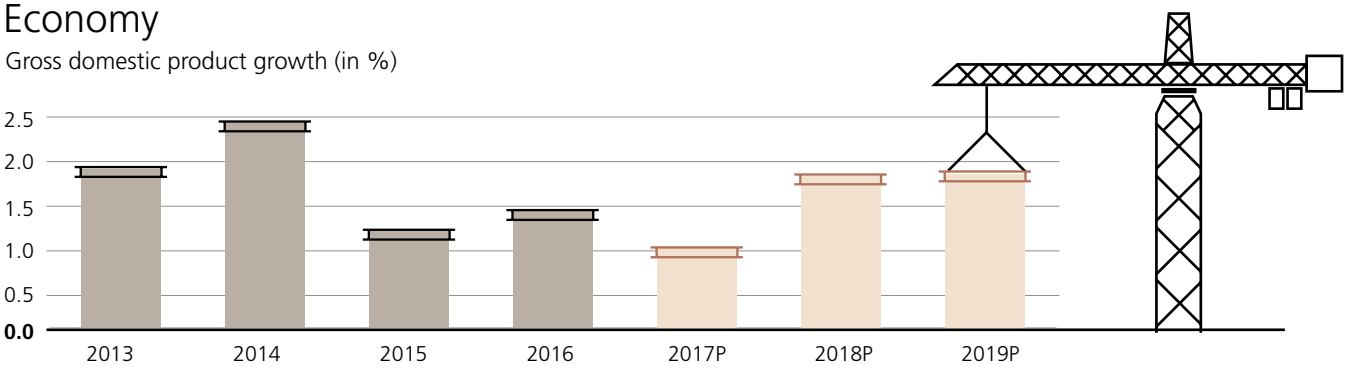
Overview and forecasts

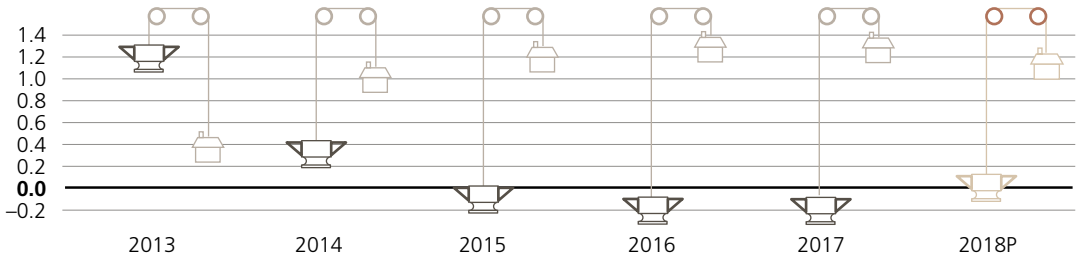
Economy

Gross domestic product growth (in %)



Interest

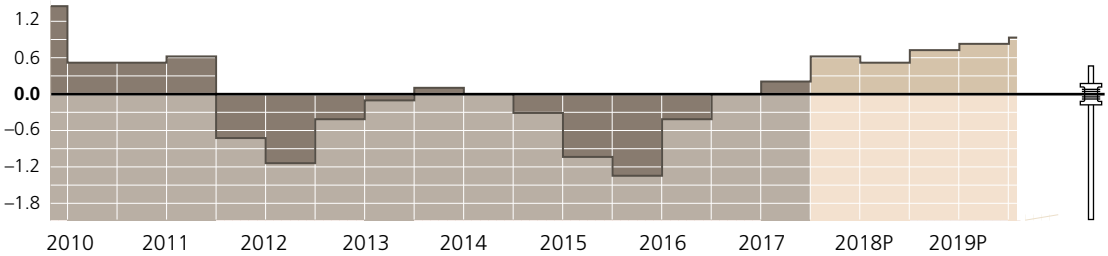
Yield on 10-year federal government bonds (end of year, in %)



Yield Property prices are dependent on interest rates (only symbolically)

Inflation

Year-on-year change in consumer prices (in %)



Population

Population growth (in %)

P = Prediction

Source: FSO, Bloomberg, SECO, SNB, UBS

UBS Real Estate
Local Fact Sheets

1.8%

This year and next year, we expect economic growth of 1.8% – the average growth rate since 2000. This trend should benefit commercial properties in particular.

0.1%

Long-term interest rates will likely rise slightly to 0.1% by the end of the year. Low interest rates will keep real estate demand high.

0.6%

Consumer prices will probably rise 0.6% on an annual average – the fastest increase since 2010. Slightly higher inflation will have very little impact on rents, however.

0.9%

Population growth should reach 0.9% this year, which means that in 2018 around 10,000 fewer additional homes will be needed than in 2013.

Helpful for investment decisions
UBS Real Estate Local Fact Sheets contain key statistical information on the local real estate market in every Swiss municipality. They can be used for various purposes such as investment decisions, market analyses or comparisons with other municipalities.

UBS Real Estate Local Fact Sheets are published in German, French, Italian and English and can be obtained from your client advisor.

	2011	2012	2013	2014	2015	2016	2017[1]	**2018[2]**	**10 years[3]**	
Drivers										**Business cycle and income**
	1.8	1.0	1.9	2.4	1.2	1.4	1.0	**1.8**	**1.4**	Real gross domestic product
	0.8	–0.1	0.6	1.2	0.1	0.3	0.1	**0.9**	**0.2**	Real gross domestic product per capita
	0.7	1.5	0.9	0.9	1.5	1.1	0.2	**0.1**	**0.9**	Real wages
										Inflation and interest rates
	0.3	–0.7	–0.2	–0.1	–1.1	–0.4	0.5	**0.6**	**0.1**	Average annual inflation
	0.1	0.0	0.0	–0.1	–0.8	–0.7	–0.7	**–0.5**	**–0.1**	3-month Libor CHF[4]
	0.7	0.6	1.3	0.4	0.0	–0.1	–0.1	**0.1**	**0.8**	Yield on 10-yr Swiss federal bonds[4]
										Population and employment
	1.1	1.1	1.3	1.2	1.1	1.1	0.9	**0.9**	**1.1**	Population
	2.9	2.9	3.2	3.0	3.2	3.3	3.2	**3.0**	**3.1**	Unemployment rate
	1.4	2.0	1.6	0.8	0.8	–0.3	0.5	**0.8**	**1.0**	Employment. in FTE
Residential										**Owner-occupied homes**
	4.8	5.1	3.4	2.2	1.5	1.0	0.0	**0.0**	**3.4**	Asking prices for condominiums
	4.1	3.7	4.7	1.3	2.3	1.3	2.0	**0.5**	**3.2**	Asking prices for single-family homes
	4.0	5.1	5.1	3.5	3.4	2.8	2.5	**2.0**	**3.9**	Growth in mortgage lending to individuals
										Rental apartments
	2.8	3.1	2.9	2.2	1.0	–1.3	–1.0	**–2.5**	**1.9**	Asking prices
	–0.9	1.2	1.3	5.8	–1.5	–3.4	–3.0	**–3.0**	**–0.5**	Asking prices for new builds
	1.4	0.6	0.4	1.2	0.9	0.2	1.0	**0.5**	**1.2**	Price index for passing rents
	2.5	2.3	2.0	2.0	1.8	1.8	1.5	**1.5**	**2.3**	Mortgage reference interest rate[4]
	4.4	4.4	4.1	4.2	4.1	3.9	3.8	**3.7**	**4.3**	Net cash flow yield[5]
	3.3	2.8	2.7	1.9	4.1	4.2	2.0	**0.0**	**2.5**	Appreciation return[5]
	7.9	7.3	7.0	6.1	8.4	8.2	5.8	**3.7**	**6.9**	Total performance[5]
										Vacancies and construction
	0.9	0.9	1.0	1.1	1.2	1.3	1.5	**1.7**	**1.1**	Residential vacancy rate
	1.2	1.3	1.4	1.4	1.3	1.2	1.2	**1.1**	**1.2**	Building permits. on housing stock
Commercial										**Office space**
	–1.4	4.9	5.4	0.2	3.0	1.2	–1.0	**–2.0**	**1.7**	Asking rents
	6.6	6.5	6.3	6.6	6.9	6.6	6.5	**6.5**	**6.6**	Properties available for sale
	4.9	4.4	4.3	4.4	4.2	3.9	4.0	**4.0**	**4.5**	Net cash flow yield[5]
	3.1	1.8	0.8	–0.2	0.8	1.1	0.5	**–0.5**	**1.1**	Appreciation return[5]
	8.1	6.2	5.1	4.2	5.0	5.0	4.5	**3.5**	**5.7**	Total performance[5]
										Retail space
	0.9	6.3	1.5	–3.3	–1.1	–3.2	–0.5	**–3.0**	**0.7**	Asking rents
	4.5	4.3	4.2	4.2	4.1	3.6	3.5	**3.5**	**4.3**	Net cash flow yield[5]
	4.1	2.7	2.3	1.0	1.1	1.1	0.0	**–1.0**	**2.0**	Appreciation return[5]
	8.8	7.1	6.5	5.3	5.3	4.7	3.5	**2.5**	**6.4**	Total performance[5]
Listed										**Real estate equities**
	6.1	12.3	–6.9	13.6	9.6	11.7	10.1	**–**	**8.7**	Performance
	22.4	24.4	21.9	20.5	30.1	27.2	29.0	**–**	**22.7**	Average daily trading volumes (CHF m)
	16.7	17.2	8.2	5.6	12.5	17.7	23.2	**–**	**10.8**	Estimated premiums[6]
	10.2	8.9	10.1	8.0	12.9	11.8	8.7	**–**	**11.2**	Volatility
										Real estate funds
	6.8	6.3	–2.8	15.0	4.2	6.8	6.6	**–**	**6.9**	Performance
	17.3	19.9	20.8	19.3	25.4	22.6	27.9	**–**	**19.9**	Average daily trading volumes (CHF m)
	27.0	28.8	17.5	19.2	29.1	27.2	27.5	**–**	**22.1**	Estimated agios[6]
	7.2	6.6	8.4	7.6	12.1	9.2	8.8	**–**	**7.9**	Volatility
										Benchmark
	6.9	6.5	5.7	5.1	5.8	5.8	4.6	**–**	**5.5**	Perform. of real estate investm. foundations
	–7.7	17.7	24.6	13.0	2.7	–1.4	19.9	**–**	**6.1**	Performance of Swiss Performance Index
	18.4	11.5	12.8	10.6	18.4	15.5	8.8	**–**	**15.9**	Volatility of Swiss Performance Index
	7.6	2.2	–3.3	8.5	2.4	1.6	–0.1	**–**	**3.5**	Performance of Swiss Bond Index ("AAA")

Unless otherwise indicated, all figures refer to percentage growth over the previous year.

[1] UBS projections or forecasts (as of January 10, 2018)
[2] UBS forecast
[3] Average: 2008 to 2017
[4] End of year
[5] Direct investment in existing properties
[6] Premiums on net asset values of real estate equities (premiums) and real estate funds (agios)

Source: SECO, FSO, SNB, Wüest Partner, BWO, IPD, Docu Media, Bloomberg, UBS

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