

Chapter 1

Policies to tame the housing cycle

Since 2000, real estate prices in Switzerland have risen rapidly. By some measures, between 2000 and 2014 apartment prices almost doubled, while those of single-family homes increased by around 60%. Price rises have varied considerably across cantons. Transactions activity in the sector has been robust, with growth in mortgage volumes strongly outpacing disposable income. As a consequence, Switzerland's residential mortgage debt-to-GDP ratio, at 120%, is the highest in the OECD. This is despite a private ownership rate of only around 40%, one of the lowest in the OECD. Banks' exposure to the mortgage market is the sixth highest in the OECD, with mortgages making up over 80% of domestic (non-interbank) bank loans. That said, high house prices are being supported by very low interest rates, immigration-fuelled population growth and smaller family units, while demand is being bolstered by mortgage interest tax deductibility and institutional investors. Restrictive planning regulations have also damped the supply response. These factors have contributed to low rental yields, although high compared to other assets and very low vacancy rates. A number of measures have been taken by banks and authorities over the past three years to shore up banks' exposure and to take the heat out of the market. These include a minimum down payment of 10% of the collateral value of the property from the borrower's own funds, which may not be obtained by pledging or early withdrawal of second-pillar pension assets, and compulsory amortisation of loans. A counter-cyclical buffer (CCB) was activated at the beginning of 2013 and obliges banks to hold additional common equity Tier 1 capital based on their risk-weighted mortgage positions secured by residential real estate in Switzerland. In January 2014, the CCB was increased from 1% to 2%. Despite these measures, house prices remain high and the risk to the banking sector elevated.

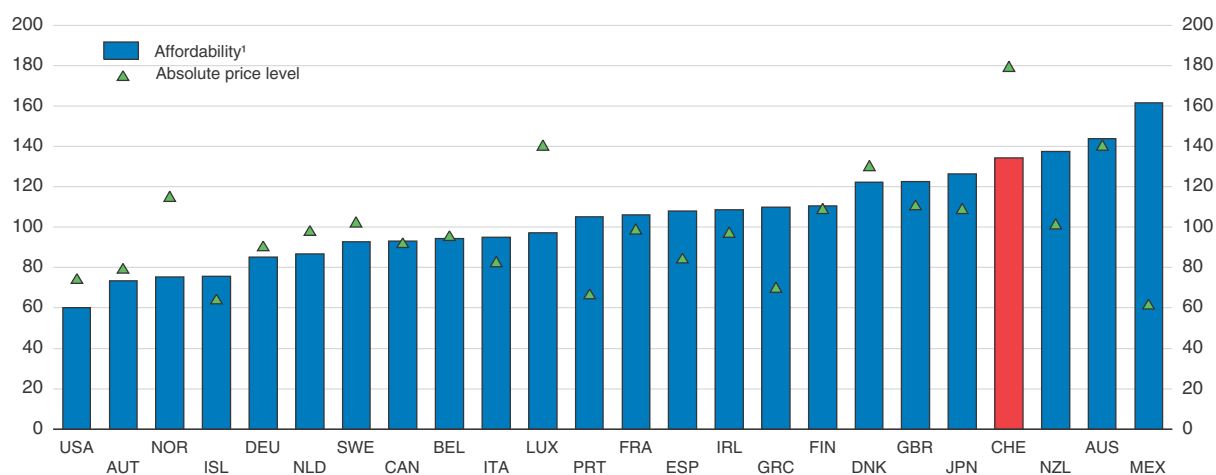
Introduction

Over the past decade real estate prices in Switzerland have been increasing much faster than household incomes, and rental vacancy rates have remained very low. The growth in the demand for housing has been robust, particularly driven by strong inflows of migrants and the low cost of borrowing. The result is that, while neither the quality nor the availability of housing pose serious problems in Switzerland, the Swiss spend a high proportion of their disposable incomes on housing. Indeed, housing is expensive in Switzerland, not just in absolute terms but also relative to the country's comparatively high level of per capita income (Figure 1.1). One of the reasons for this is the high cost of construction, as was discussed in the 2009 *Survey*, so that the supply response has been insufficient. This has been exacerbated by, among other things, the poor availability of land and strict construction codes.

Household debt levels are high, largely due to mortgage loans. The other side of the coin is that Swiss banks are highly exposed to the housing market, and in the event of a major downward adjustment in prices, mortgage lenders might find themselves in trouble, with potentially serious implications for the broader economy. Authorities in Switzerland have been taking measures to minimise and manage this risk, with some success. While continued short-term vigilance is surely required, there are also longer-term measures that could help avoid a recurrence of the significant housing cycles seen in Switzerland over the past 50 years.


Figure 1.1. **Affordability and absolute cost of housing in selected OECD countries, 2011**

Sample average = 100



1. Calculated using PPP prices for housing-related expenditure (housing, water, electricity, gas and other fuels) divided by GNI per capita (PPP, constant 2011 international dollars).

Source: OECD Purchasing Power Parities Database; and World Bank World Development Indicators Database.

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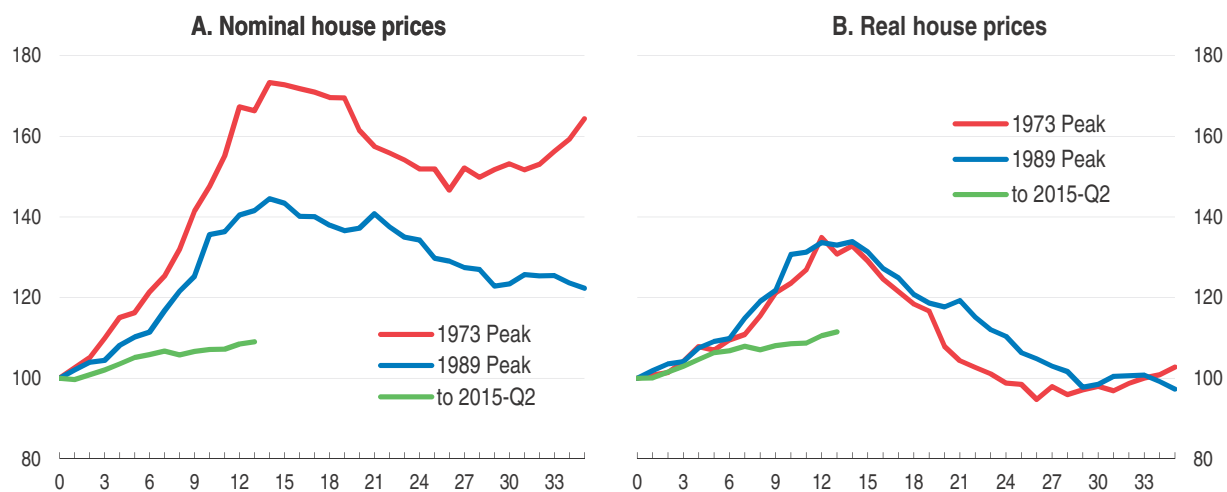
This chapter examines recent developments in the Swiss housing market. First, the factors driving housing-market developments are discussed, including those underlying both supply and demand. On the demand side, low interest rates and high population growth, smaller family units, driven in particular by strong immigration, are the most important. The reasons for low homeownership are also examined. Then supply-side aspects are discussed, including the importance of rigidities in making land available for residential development, particularly in high-demand areas, in explaining the supply-demand imbalance. The chapter concludes by making policy recommendations aimed to dampen the Swiss housing cycle.

Developments in the Swiss housing market

There have been three distinct cycles in the Swiss housing market since the beginning of the 1970s (Figure 1.2), which have generally followed the broader business cycle: one that peaked in 1973, a second that culminated in 1989, and a third is ongoing. The first two booms were of similar amplitude, as were their durations (defined as sustained CPI-adjusted appreciation of over 5% per annum), but the current one has less amplitude but a longer duration. In all three there have been heterogeneous regional developments. Most notably, in the current cycle, house price increases in Geneva have outpaced those elsewhere, while gains in the other major metropolitan areas have also been robust. Indeed, in the canton of Geneva itself, the price of apartments has more than tripled since 2000, while the average across all of Switzerland has been just over half that (Figure 1.3). In the north-western and some central cantons, price appreciation of houses rather than apartments has been considerably more modest, with price increases of around 50% since 2000.


Figure 1.2. **House prices in Switzerland over recent cycles**

Index, 14 quarters before the peak = 100¹



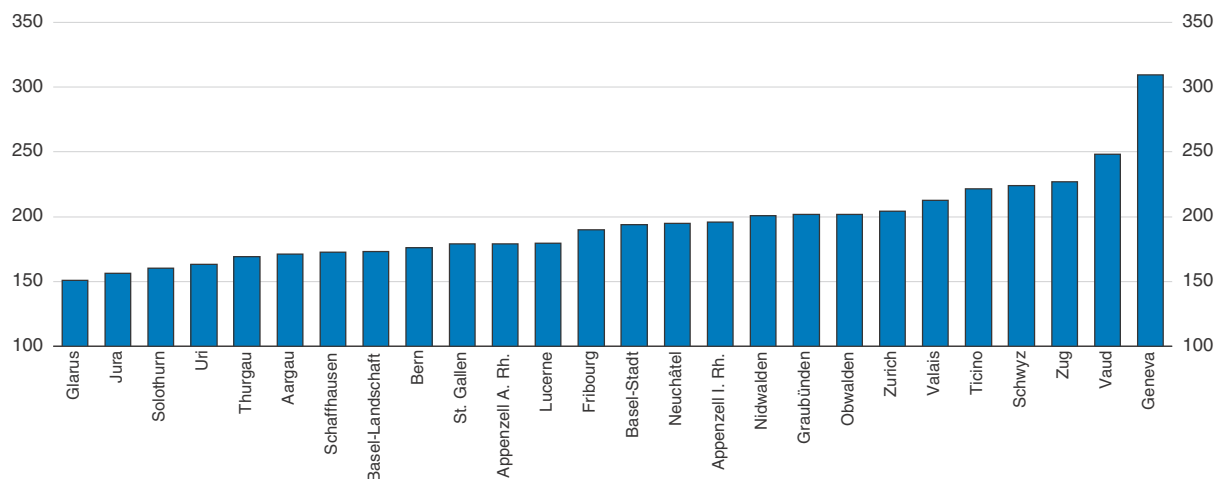
1. The series for the most recent cycle has yet to peak so the chart shows the latest 14 quarters.

Source: OECD House Price Database.


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The real estate boom of the 1980s took place against the background of an economic boom in the second half of the decade and the introduction of the obligatory second pillar in the Swiss pension system. The economic boom drew large numbers of foreign workers, particularly from Yugoslavia, which significantly shifted demand in the housing market.

Figure 1.3. **Real estate prices by canton**
Apartments, increase in price indices, year 2000 = 100



Source: Fahrländer Partner.

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Moreover, rising incomes and relatively low interest rates improved the housing affordability. To cover the growing demand for housing, construction boomed, but despite this increased activity, housing was in undersupply, especially in the larger urban areas. Vacancy rates fell to close to zero, and rising market rents were the consequence. Expanding urban areas also bore witness to the housing shortage. As the second pillar of the pension system matured, capital became concentrated in this system and was seeking returns. In the aftermath of the losses in the 1987 stock-market crash, pension funds, as well as individual investors, diverted more and more capital into real estate projects, which seemed to be a good hedge against the increasing inflation rate. Prices for investment properties rose dramatically, boosted by short-term speculation.

Several factors helped to trigger the real estate crisis of the 1990s. First, around 1990 an abrupt and sharp recession combined with ongoing high inflation and interest rates led to a significant decrease in demand for all kinds of properties. Second, since most mortgages had a variable interest rate, the high inflation and nominal interest rates of 8.5% reduced demand. Third, by the end of the 1980s strong demand and increasing market rents led to a significant increase in development and construction activity. When the business cycle peaked abruptly in 1990-91, many projects were still in the pipeline and came to market only after demand had crashed, and therefore vacancy rates rose significantly, and prices and market rents decreased. Markets in the Lake Geneva region reached their peak in 1990, while in the German-speaking regions the turning point was in 1991-92 (Fahrländer Partner, 2008).

The 1990s real estate bust led to a crisis of the mortgage banks, especially the small regional banks. The losses from unpaid interest due to insolvency did not do too much harm. Much more important was negative equity on the mortgages due to decreasing market values – between 1991 and 1996 prices for apartments fell by around 35% and in both Bern and Geneva by around 20%. Firms owning rental properties (non-financial corporations such as real estate funds and real estate companies) were especially exposed. In the five years leading up to crisis, the stock of mortgages held by non-financial corporations grew at a compound annual rate of approximately 12%, while mortgages held

by households grew by an average 10% over the same period. Over the 1991-96 period, the Swiss Federal Banking Commission (SFBC) estimated a total loss from defaults of CHF 42 billion (around 10% of GDP). To a smaller extent this was due to write-offs on interest and principal for privately owned properties, but most of the losses were due to defaults on mortgages for investment properties, especially in the commercial sector. Smaller regional banks were especially hard hit. An estimated 100 of the 200 regional banks did not survive the crisis or lost their independence (BIS, 2004). Box 1.3 below provides further details.

The first decade of the new millennium saw the housing market reignite. Above-average economic growth, low interest rates, further liberalisation of migration rules, as well as the ability to fund the purchase of housing out of pension deposits led to a boom – of course starting from a low level. Despite an increase in construction of condominiums and single-family houses, and the expansion of urban areas, robust demand led to rapid price increases, which have now been ongoing for about 15 years.

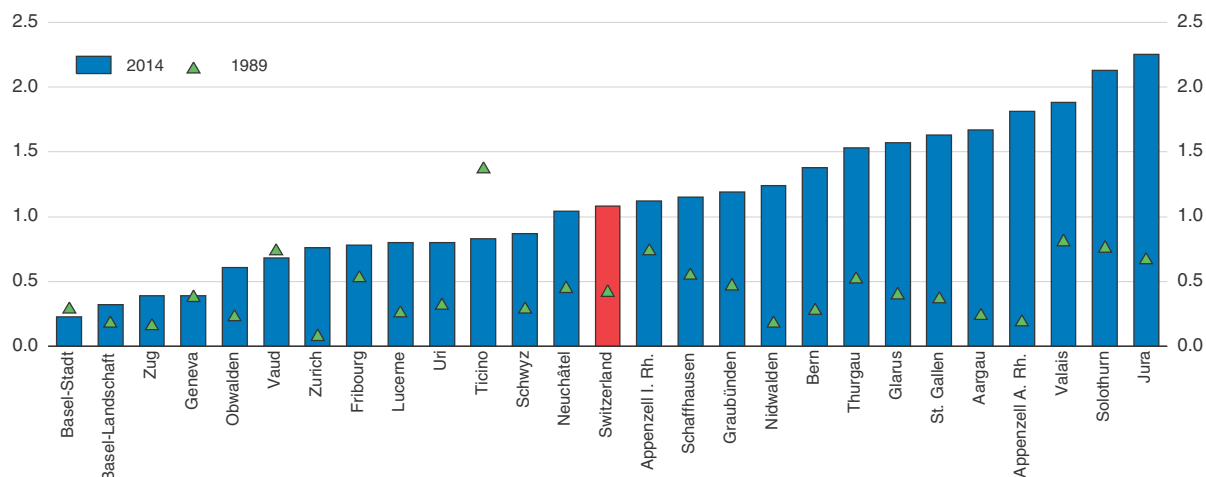
By 2005 prices in some regions had eclipsed the peaks of the late 1980s, and there was already some speculation that the real estate market in Switzerland was “overheating” (Neff and Rauh, 2005; NZZ, 2005; Fahrländer, 2007). Since 2008, the Swiss National Bank (SNB) and other market observers have repeatedly warned of overheating in real estate markets. Several regulations by the Swiss Financial Market Supervisory Authority (FINMA) and the Federal Council, “self” regulation by the mortgage industry, as well as macroeconomic developments, brought a halt in the increases in prices for housing in some regions and a significant slowdown in most others, suggesting a soft landing. However, there are early signs of a reacceleration in some markets and sectors. Due to the high real yields in the real estate sector compared to other asset classes, prices of investment properties might rise still further.

Nevertheless, by most measures, recent developments in this housing cycle have not been as extreme as in the 1980s boom, and rental vacancy rates through the current cycle have never reached the lows seen at the end of the 1980s cycle. In 1989 the national average vacancy rate was 0.4%, while over the past few years it has hovered near 1% (Figure 1.4), a value that has been estimated by some to be almost in equilibrium (Thalmann, 2012). In some cantons in 1989, the vacancy rate was effectively zero. Also, as will be stated below, growth in mortgage volumes relative to real disposable income per capita has been considerably lower through this current cycle. On the other hand, the price-to-income ratio, particularly for owner-occupied apartments, has risen to levels last seen in 1989, and population growth, driven by sustained large migrant inflows, has been stronger over this cycle. And of course, interest rates have been much lower.

The structure of the Swiss housing market

One-third of the Swiss population lives in the agglomerations of the five largest cities: Zurich (1.1 million), Geneva (0.5 million), Basel (0.5 million), Bern (0.3 million) and Lausanne (0.3 million). Another third lives in the remaining urban areas, and a final third in the countryside. Strong population growth and improved infrastructure have accelerated urban sprawl. Only 7% of the land is allotted to settlements and urban areas, with the rest devoted to forests, woods, farmland and alpine farmland (68%), lakes and watercourses (4%), and unproductive land (21%). With a population of approximately 8.3 million, density is around 200 inhabitants per square kilometre. Since much of the land cannot be or is not used for residential purposes, the effective population density is, however, substantially higher than the average figure (Bourassa et al., 2010).

Figure 1.4. **Vacancy rates across cantons**
Percentage of total housing stock

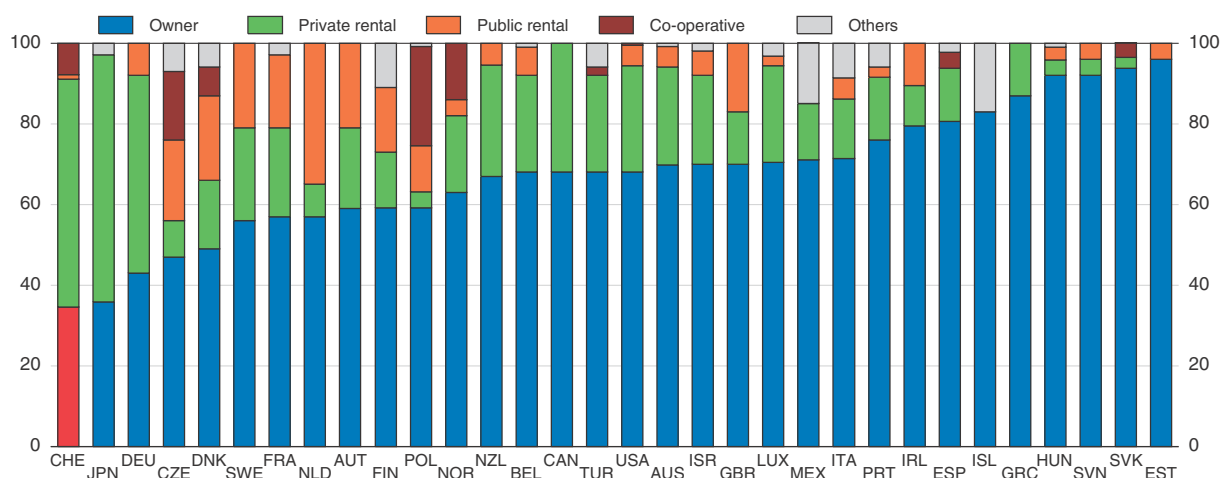


Source: Federal Office of Housing.

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The level of homeownership is very low (see below), and about 60% of Swiss households rent an apartment or a single-family house (Figure 1.5) and a small but not insignificant number live in buildings with a co-operative ownership structure. These are typically in urban areas, with a particularly strong concentration in Zurich (see below). According to the latest available data, about 62% of rental apartments are owned by private investors, 28% by institutional investors such as pension funds, insurance companies, real estate funds and real estate companies, and about 10% by the public sector or non-profit co-operatives. Within the institutional investor category, pension funds constitute the largest owner class with almost 10% of the rental units in the country. Another striking figure is that close to 12% of housing units are second homes.

Figure 1.5. **Ownership structure across countries**
Per cent of dwelling stock, 2009



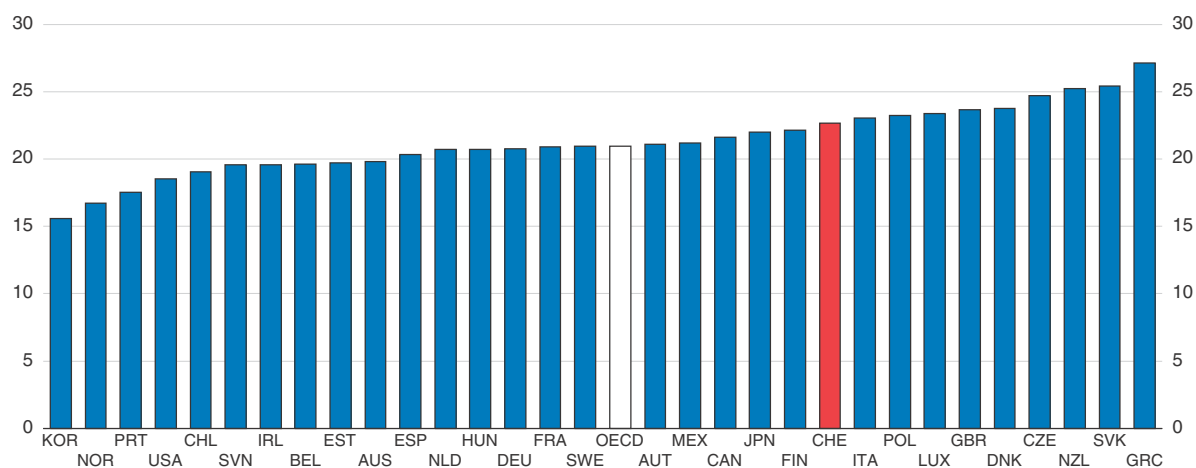
Source: Andrews D., et al. (2011), "Housing Markets and Structural Policies in OECD Countries", OECD Economics Department Working Papers, No. 836, OECD Publishing.

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In 2013, about 66 700 arms-length real estate transactions worth an estimated CHF 56.8 billion were recorded (Fahrländer Partner, 2014). This transaction rate of approximately 3.4% of the stock is low, since homeowners tend to stay in their properties for a long time or, if moving, put them on the rental market (Andrews et al., 2011). More generally, residential mobility in Switzerland is around average, with about 16% of households changing residence over a two-year period: on a par with France but lower than in the Nordic countries.

Due to high prices and therefore relatively high rents, Swiss households spend around 23% of their gross income on housing, which is above the OECD average, on a par with Denmark and Luxembourg, and higher than France, Germany and Austria (Figure 1.6). According to the Eurostat SILC Survey, in 2013 around 38% of the Swiss population in the lowest income quintile lived in households where the total housing costs represented more than 40% of disposable income. This is higher than Belgium, France and Austria but lower than Germany and the Netherlands. Indeed, the housing cost “overburden rate” (the percentage of the population living in households where the total housing costs represent more than 40% of disposable income) for low-income earners in Switzerland is well above the average for European countries (OECD, 2011). High spending on housing is in part due to relatively expensive rents in Switzerland – second only to Japan, according to some studies (Andrews et al., 2011). The trend in many OECD countries has been for spending shares on housing to rise in recent years, with financial deregulation and lower interest rates making borrowing easier and cheaper and therefore boosting homeownership rates and thereby lifting spending on housing. Moreover, prices have also risen, as have rents, adding to upward pressure on spending on housing. That said, in Switzerland the increase in the share of spending on housing has been modest, probably due to rent controls and the still low levels of homeownership.


Figure 1.6. **Housing expenditures in OECD countries**
Percentage of household gross disposable income,¹ 2012 or latest available year



Note: Housing expenditures include actual and imputed rents, expenditure on maintenance and repair of the dwelling, on water supply, electricity, gas and other fuels, furniture, furnishings and household equipment, goods and services for routine maintenance of the house. Data refer to 2012 with the exception of 2011 for Japan, New Zealand and Switzerland and 2010 for Canada.

1. Gross of depreciation but after taxes and transfers as well as social transfers in kind such as education and health care.

Source: OECD calculations based on OECD Better Life Index (2014); and OECD National Accounts Statistics Database.

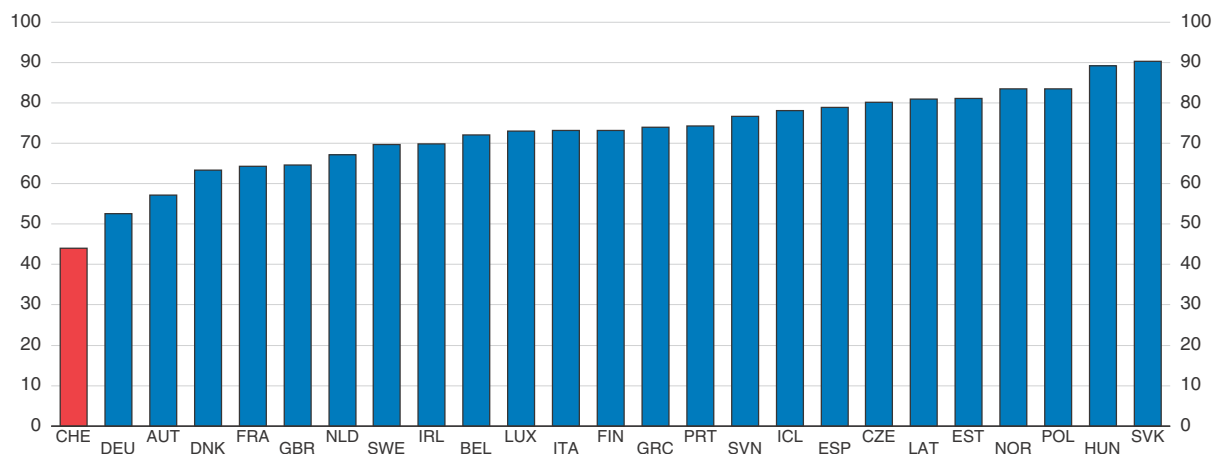
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Home ownership rates are low but increasing

Private home ownership rates in Switzerland are low, at around 44% (2013; population living in private home ownership), which is the lowest in Europe and likely in the OECD by a significant margin (Figure 1.7). Promoting the private ownership of homes is enshrined in the Federal Constitution (Section 8, Article 108). The principle vehicle for this, introduced in 1995, is letting residents draw on their second- and third-pillar pension assets to fund part of the down payment to buy a home. The pension system can also be used to fund refurbishments. Research suggests a number of factors explain the low rates of private home ownership. Bourassa and Hoesli (2006) find that high house prices – relative to rents and to household incomes and wealth – are the most important cause. Within Switzerland, home ownership rates vary considerably from one area to another. The degree of urbanisation is an important determinant of this variation, with Geneva and Basel (14% and 17%, respectively) having the lowest rates in the country, and the Jura and Valais the highest (58% and 56%, respectively). However, in this case urbanisation may be a proxy for relative affordability. Another unique feature of Swiss home ownership is that the average age at which people become home owners is between 35 and 40 years; this is relatively late by international comparison and is consistent with the affordability hypothesis. Andrews and Caldera Sánchez (2011) find that, while age structure and other non-age factors account for some of the change in home ownership in Switzerland in the period 1995-2005, a large part remains unexplained.


In many countries home ownership is commonly a form of saving for retirement, in addition to pension savings and life insurance. However, in Switzerland, present arrangements for the taxation of savings held in pension funds and life insurance companies are very favourable, possibly also explaining low home ownership rates. Contributions to earnings-related pension schemes have been compulsory only since 1985, and the Swiss have accumulated substantial pension fund assets (113% of GDP in 2013) by international comparison. Life insurance company assets (51% of GDP in 2013) are also

Figure 1.7. **Home ownership in selected European countries, 2014¹**
Percentage of all persons living in private households



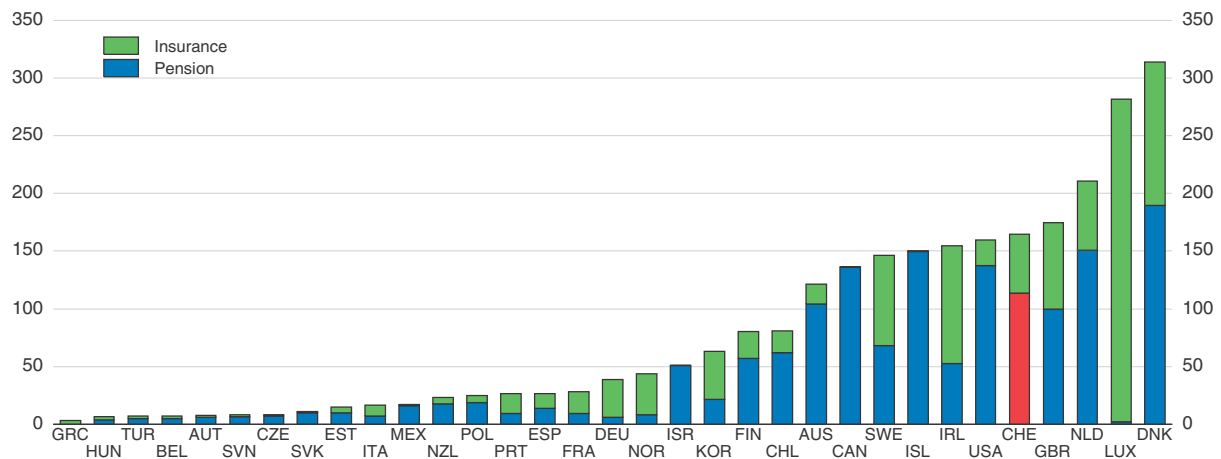
1. Or latest year available (2013 for Switzerland).

Source: Eurostat, Statistics on Income and Living Conditions (distribution of population by tenure status).


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high. Indeed, the combined total of pension fund and life insurance assets (164% of GDP) is among the highest in the OECD (Figure 1.8). These figures suggest that these incentives contribute to the accumulation of this form of long-term savings, at the expense of home ownership (Carey et al., 1999).

Figure 1.8. **Pension and life insurance assets in OECD countries, 2013**
As a percentage of GDP



Source: OECD Insurance Statistics; OECD Pension Statistics; and OECD Annual National Accounts Database.

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Drivers of developments in the housing market

It is difficult to determine if the price increases seen in the Swiss housing market over the past 15 years are sustainable: the indicators are mixed. Nevertheless, policy responses depend to a large extent on such a judgement. A number of factors suggest that part of the price appreciation has been driven by a number of factors, including a strong economy, population increases (including higher immigration), demand from investors, increased affordability in the short term due to lower interest rates and easier availability of mortgage financing. These may have resulted in high demand and low rental vacancies. At the same time, a number of constraints impede supply responsiveness, including the lack of available land due to zoning regulations, strict construction standards, lock-in effects from capital gains taxation, and low nominal rental yields due to high prices and rent controls.

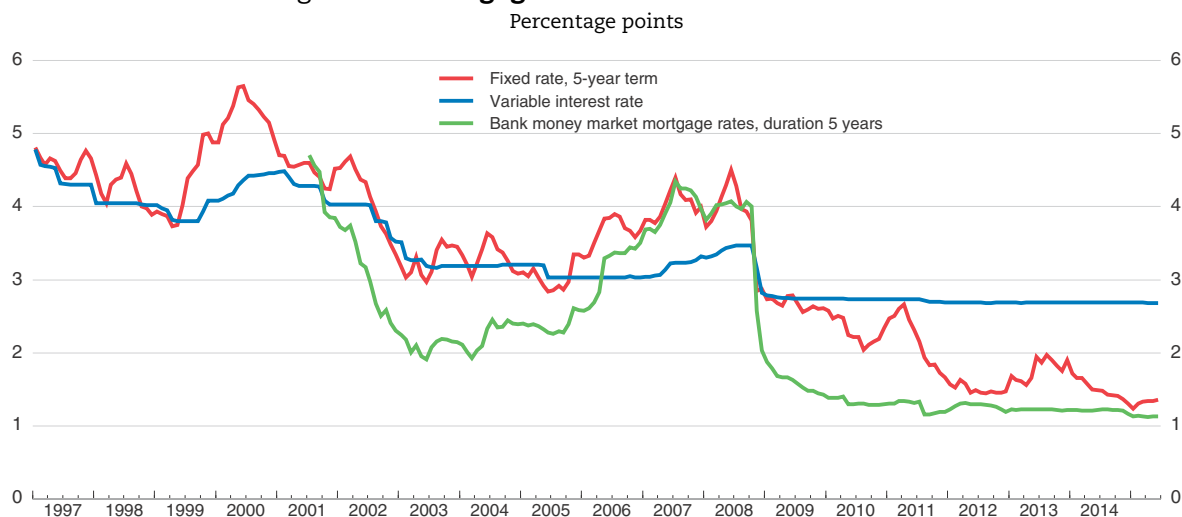
Aside from fundamental demand and supply determinants, low returns in other investment assets may also be driving “search-for-yield” behaviour, especially by institutional investors (pension funds). The net impact of all these factors is difficult to judge, but it is a critical assessment from the standpoint of macro-prudential policy formulation – both in terms of protecting a potentially over-exposed banking sector, as well as possibly over-leveraged households – given the impact that bursting a bubble would have on the economy and social welfare more generally.

Mortgage interest rates and affordability

Interest rates directly influence the market for owner-occupied property, as well as the market for investment property, through the affordability of lending. Moreover, low mortgage interest rates sustained for an extended period are a feature associated with real

estate bubbles in many countries (Hott and Jokipii, 2012). As in almost all OECD countries, Swiss mortgage interest rates have been falling since mid-2008 and are currently at unprecedentedly low levels (Figure 1.9). The average interest rate on new mortgages in 1993 was 6.2%, in 2003 3.4% and in 2013 less than 2%. Moreover, it is also the case that Swiss interest rates have been consistently below those in almost all other OECD countries (with the notable exception of Japan) for many years. In recent years, interest rates have been especially low, as the central bank has been trying to prevent the appreciation of the Swiss franc.

Figure 1.9. **Mortgage interest rates in Switzerland**



Source: Swiss National Bank.

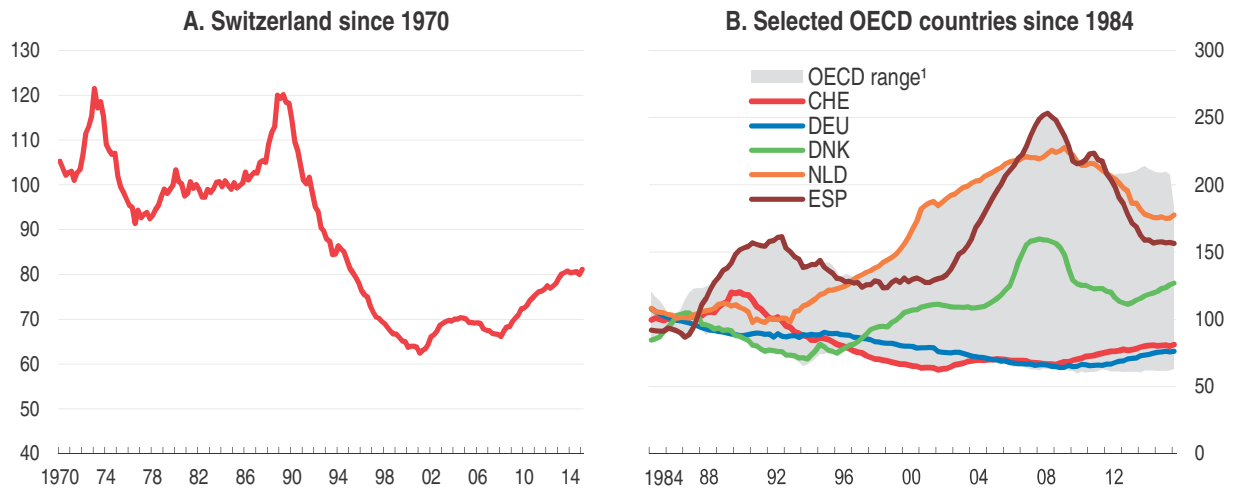
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A crude metric of housing affordability is the price-to-income ratio, which simply measures the average quality-adjusted price of housing against disposable income. It does not consider population growth as well as the actual cost of borrowing, taxation and upkeep. According to this measure, housing affordability is fairly high by historical standards, despite a steady increase in the price-to-income ratio since the beginning of the 2000s (Figure 1.10, Panel A). Moreover, in contrast with most other OECD countries, the Swiss price-to-income ratio has remained relatively low and stable compared to the mid-1980s (Panel B). However, affordability is below its historical average if population growth is taken into account.

A better measure of housing affordability would take into account changes in the cost of borrowing and property maintenance, in addition to the cost of housing itself. Credit Suisse's Housing Affordability Index (HAI), calculated for condominiums and single-family homes, shows the general burden of housing costs on home owners' budgets (Figure 1.11, Panel A). Due to low mortgage rates and the steady growth in household incomes, housing costs have shrunk as a share of household budgets in the recent past, even though they remain high by OECD standards. Analysis based on census and micro-census data show that, in recent years especially, Swiss lower- and middle-class households in particular increased their home ownership rates (Fahrländer Partner and Sotomo, 2014). This development has also been driven by the possibility to tap into compulsory pension savings to help finance the necessary 20% down payment for a mortgage-financed purchase.

Figure 1.10. **Housing price-to-income ratios**

Index, 1985 = 100



1. All OECD countries except for Chile, Iceland, Israel, Mexico, Poland and Turkey for which no data are available.

Source: OECD House Price Database.


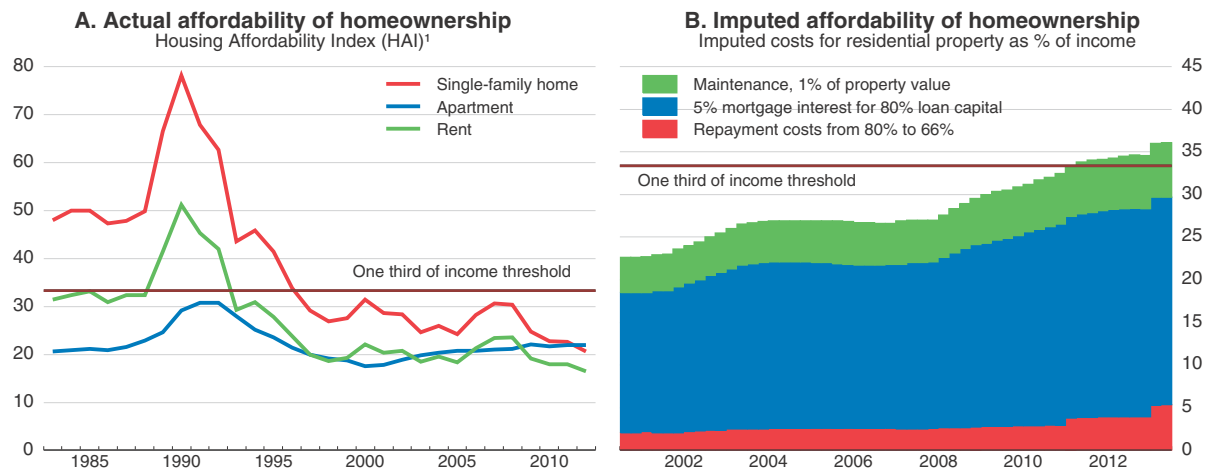

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Figure 1.11. **Housing affordability and costs**

1. Credit Suisse's Housing Affordability Index (HAI) shows the general burden of housing costs on homeowners' budget by type of housing.

Source: Credit Suisse.

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In assessing the eligibility for mortgages, Swiss banks use a “golden rule”, which stipulates that mortgage and running costs should not exceed one third of the household's income. In calculating this ratio for the purposes of assessing eligibility to borrow, rather than the current mortgage interest rate it is current practice for Swiss banks to apply an interest rate of 5% with an additional 1% for amortisation and 1% of the property value for maintenance. In the present circumstances, this constitutes a significant safety margin, and, with the steady decline in market interest rates since the global financial crisis, a significant wedge has opened up between affordability calculated using the market interest rate and the assumed 5% rate. As Credit Suisse shows, affordability with imputed

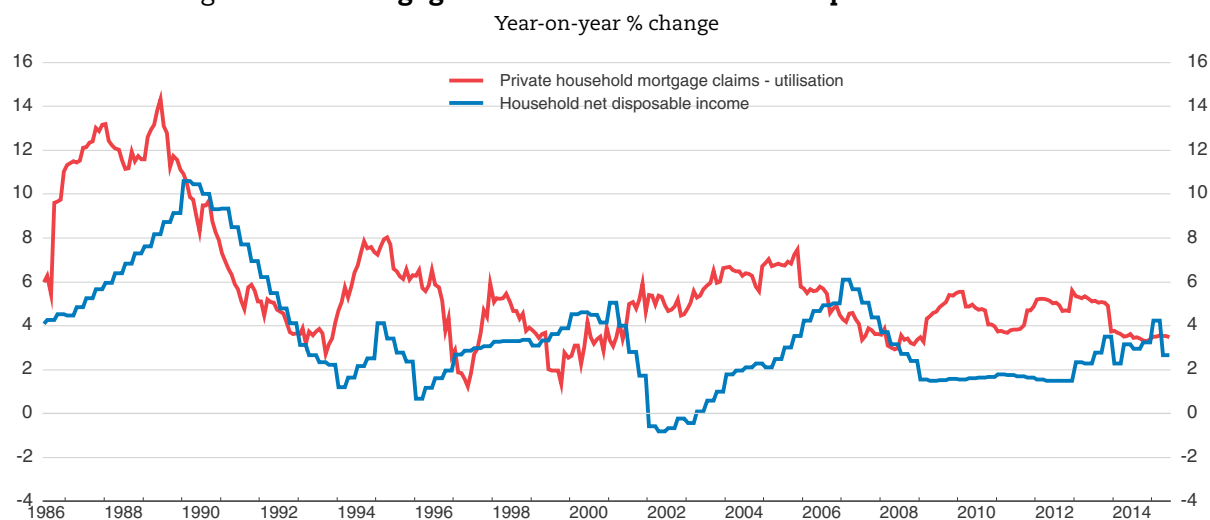
long-term averages (80% loan-to-value, 5-year fixed mortgage) has fallen significantly since the year 2000 (Figure 1.11, Panel B), and currently, for the average household, the estimated cost of home ownership exceeds the one-third golden rule (Credit Suisse, 2015). This shows that for a significant share of Swiss households home ownership remains unaffordable.

Mortgage availability


In addition to the reduced cost of borrowing from lower interest rates, the increased availability of mortgages and easier options for funding down payments are also likely to have fuelled demand for real estate. Except for a two-year spell between 2006 and 2008, mortgage lending growth has significantly exceeded increases in household disposable income over the past decade and a half (Figure 1.12).

One significant change that has facilitated greater housing market activity is the ability to access pension funds for down payments for residential property purchase. Under certain conditions, it is possible to retrieve or to pledge pension savings to buy housing. This has been the case since 1990 for third-pillar pensions and since 1995 for second-pillar pensions and is part of the political promotion of home ownership stipulated in article 108 of the Federal Constitution. According to UBS, every year 35 000 to 40 000 people use second-pillar funds to buy housing or to fund refurbishments (UBS, 2014). UBS estimates that at least 10% of today's transactions involving single-family properties are at least partly funded out of the second pillar. However, due to rising real estate risks, in 2012 the authorities approved a banking-sector "self" regulation to impose a minimum down payment of 10% of the lending value of the property from the borrower's own funds, which may not be obtained by pledging or early withdrawal of second-pillar pension assets. This minimum cash down payment requirement indirectly reduces the use of second-pillar pension assets. Moreover, there has recently been political discussion about abolishing recourse to the second pillar, first for some groups of savers but ultimately with the aim of removing this right for all. This is a measure that authorities should keep in their back pocket as a last resort.

Figure 1.12. **Mortgage volumes and household disposable income**



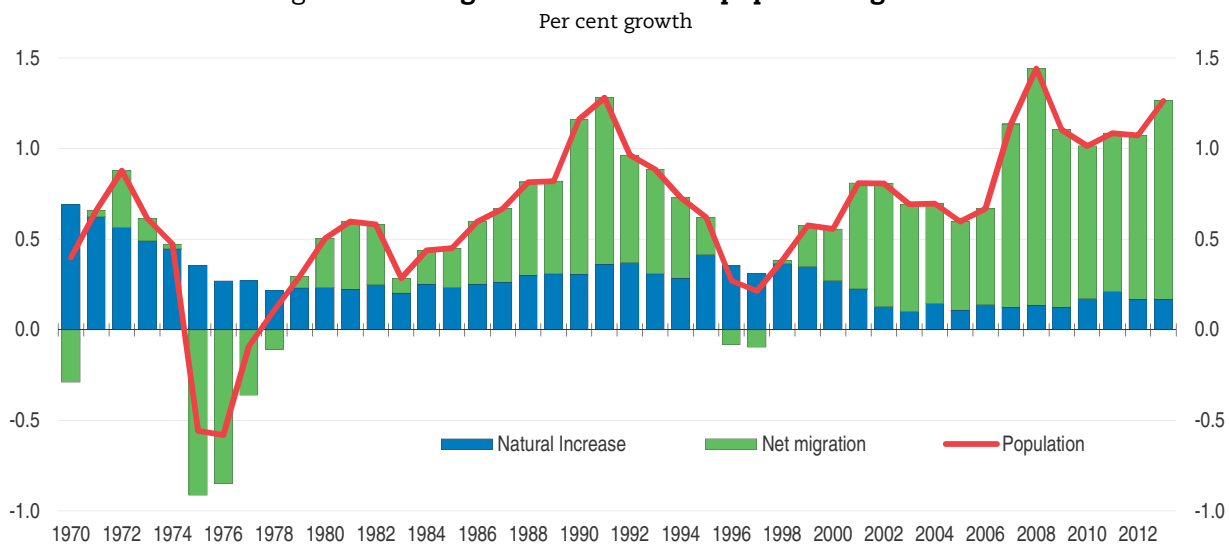
Source: Swiss National Bank; OECD Economic Outlook 97 Database (and updates); and OECD calculations.

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Demographics

The permanent resident population of Switzerland has grown by 13% since 2000, or around 900 000 people (Figure 1.13). The annual population increase of over 1% over the past several years is among the highest in the OECD. Of this, migration accounted for around 700 000 people or nearly 80% of the increase. Migration-driven population growth has been particularly strong since the Agreement on the Free Movement of Persons with the European Union came into force on 1 June 2002. The resulting rapid rise in household formation has, without a doubt, fuelled the demand for housing in Switzerland over the past decade and a half.

Figure 1.13. **Migration and natural population growth**



Source: OECD Population and Vital Statistics Database.

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Whereas in the 1980s and 1990s the Swiss quota system was designed for low skilled seasonal workers, the more recent migration policy featuring freedom of movement with the EU/EFTA countries, as well as quotas for high skilled immigrants and additional allotments for expatriates, is much more responsive to the needs of the economy. Due to great success in the attraction of companies from abroad, comparatively high incomes and quality of life in general, more high skilled immigrants have settled in Switzerland. Overall, the skill structure of recent immigrants is more or less comparable to that of the local population, since high-income immigration is usually accompanied by low-skill immigration to provide all the necessary additional services (Zürcher Kantonalbank, 2010). Indeed, Switzerland is one of the few OECD countries that draws a balanced mix of both higher and lower skilled migrants (OECD, 2013), although in recent years migration has become more qualified, mainly driven by free mobility with the EU/EFTA (Liebig et al., 2012). Moreover, the trend towards smaller family units has been a factor in increasing the demand for housing in Switzerland. Indeed, the average size of migrant households coming to Switzerland is only marginally larger than Swiss-born households (OECD, 2015), which reinforces the already small household size, which, at 2.2 persons, is among the smallest in Europe and well below the OECD average of 2.7, down from 3.4 in 1960.

Against the background of high unemployment in some of the surrounding countries and comparatively strong economic growth in Switzerland (see below), net immigration is expected to stay high in the coming years, although the acceptance of the initiative against mass immigration in February 2014 may have a disruptive effect starting in 2017 when it must be implemented and perhaps even earlier due to the uncertainty effects (Box 1.1).

Box 1.1. **Changes in Swiss migration policy**

On 9 February 2014 some 50.3% of the Swiss population accepted an initiative against “mass immigration”, but the people clearly refused an initiative for much more restrictive regulation of immigration in November of the same year. The Swiss parliament has until February 2017 to design the new immigration rules, and the government will have to set quotas for all kinds and origins of immigrants, including cross-border commuters. Since quotas already exist for non-European immigration, the new regulation will especially apply to immigrants from the EU/EFTA. This policy change might not be possible without a revision of the accord of free movement of persons with the European Union. In February 2015 the Swiss Federal Council drafted the necessary changes to the relevant law and articulated a mandate to negotiate with the EU. According to this draft, quotas should be set annually for new immigration but not for changes in immigration status. The draft law requires that quotas be set in consultation with cantons and a new immigration commission.

Household income growth

Switzerland has enjoyed strong economic growth over the past decade coinciding with a booming housing market. In the decade to 2013, Switzerland had the seventh highest rate of real GDP growth in the OECD. This has underpinned a strongly performing labour market and rising household incomes. However, in terms of real per capita disposable income growth, Switzerland’s ranking drops to 13th. As illustrated in the previous *Survey*, rapid population increases over this period have led to robust overall GDP growth, but productivity gains have been weaker.

Search for yield

Yields on Swiss government bonds have fallen dramatically, which has put institutional investors in a tight spot. For instance, as pension funds have to guarantee a certain minimum return (currently 1.75%) to mandatory second-pillar pension savings, they have a problem since the yield on the “risk free” asset, a 10-year Swiss Confederation bond, currently stands at 0.1%. At the same time, the pension system alone faces an influx of CHF 50 billion in new savings per year that needs to be invested (BSV, 2014). Like many other institutional investors, the pension funds have turned to real estate as an asset class where acceptable yields can be realised. The current gross return on buy-to-let properties is around 3 to 4%, which remains attractive compared to other asset classes (globalpropertyguide.com). Consequently, demand for investment property, especially apartment buildings, has been rising sharply in recent years, not only by institutional but also by individual investors, and as demand has boosted prices, nominal gross yields have dropped to levels never seen before. Banks, insurance companies and pension funds face a portfolio dilemma: either they invest their funds in real estate, thereby diminishing returns on their existing real estate portfolios, or they turn to the stock market with its higher short-term volatility.

Demand from non-residents

With the onset of the global financial crisis in 2008, and again with the euro area crisis starting in 2011, Switzerland has been increasingly seen as a financial safe haven. However, there is little evidence of a surge in foreign money flowing into its residential housing market through that period. Moreover, restrictions on non-residents' residential real estate purchases, including for buy-to-let, have long been in place, curtailing safe-haven investments in this sector (Box 1.2). That said, immigrants from EU/EFTA and other immigrants with permanent residency are not considered as "persons abroad" for the purposes of these restrictions, and, as noted above, their numbers have increased considerably since 2002.

Box 1.2. Regulations for foreigners on the Swiss housing market ("Lex Koller")

The regulation of investment in real estate by "persons abroad" has a long history in Switzerland, going back to the 1950s. The purchase of commercial properties was liberalised in 1997, but residential purchases continue to be regulated by the so-called "Lex Koller" rules. According to these regulations, "persons abroad" are restricted to buying residences in certain areas of the country – mainly in the touristic areas in the Alps, and only up to a certain annual quota. Moreover, the size of properties is typically restricted to a "net" living area of no more than 200 m² and the total property being no more than 1000 m². Real estate (such as dwellings, private houses, city apartments, tenements, etc.) in "non-tourist" locations is subject to a very stringent approval process, and in practice this approval is seldom granted to non-residents. Additionally, a maximum of one third of the gross area in each property may be sold to foreigners, and there is a minimum market value of around CHF 700 000. That said, rules vary from canton to canton and even across municipalities within cantons. However, immigrants from EU/EFTA and other immigrants with permanent residency are not considered as "persons abroad" for the purposes of this regulation, and their numbers have increased considerably since 2002. The possibility for non-residents to invest in Swiss housing through shares in listed companies has existed since 2005. Today some foreign-controlled construction companies are considered as "persons abroad" and have problems investing in land for development if more than 10% of the buildable floor space is suitable for housing.

In 2005 the Swiss government started a process to abolish the "Lex Koller" rules, but after the onset of the global financial crisis the parliament refused the abolition (last ballots were cast in parliament on 26 November 2014). Attempts to re-regulate the commercial property sector are also now being discussed. In 2012, the Swiss people voted for the establishment of a new article in the constitution that would limit the quota of second homes at the communal level to 20% of the housing stock. The corresponding new law has been approved by the Parliament but has not yet entered into force. In the future, it will affect and further restrict the purchase of second homes also by foreigners, since the share of second homes in many touristic regions is already at 20% or above.

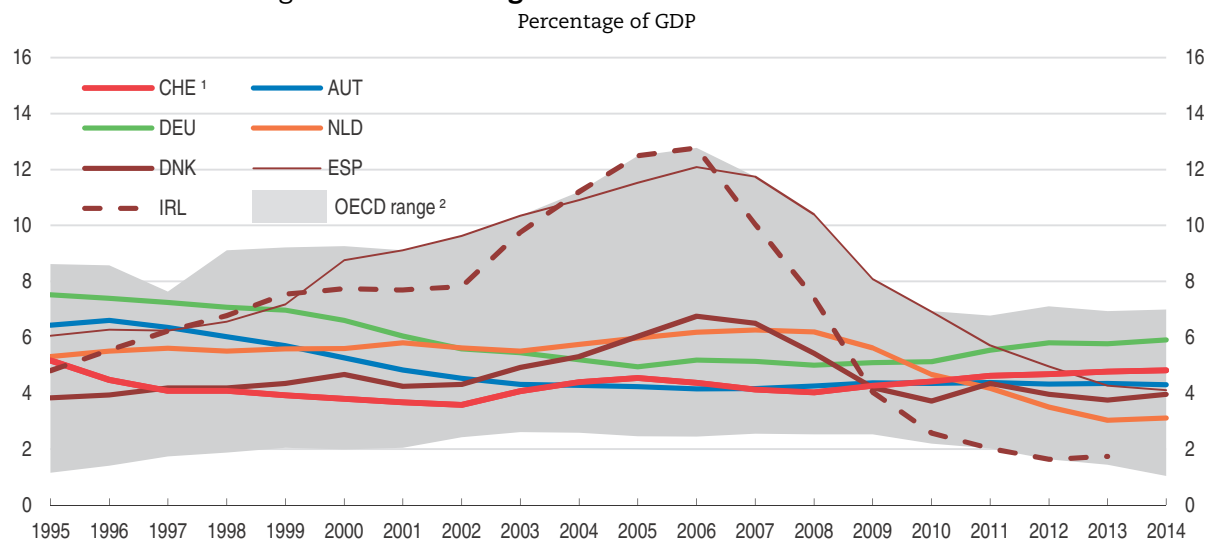
Supply

In Switzerland, as in other OECD countries, residential investment has typically responded to changes in population growth, whether from natural increases or net migration. However, it has failed to respond to the surge in population growth as it once would have, with the housing investment-to-GDP ratio remaining at very low levels since

the beginning of the 2000s (Figure 1.14). The same pattern is evident in a number of other OECD countries including Australia, Denmark, Finland, Norway and Sweden. Housing investment's share in nominal GDP has remained steady at around 4% of GDP and was among the lowest in the OECD until 2009 when the housing cycle crashed in many OECD countries.

This low level of household investment was despite the fact that population growth has been among the fastest in the OECD and that Swiss construction costs are among the highest in absolute terms and relative to both the average price of goods and the price of other fixed investment spending (OECD PPP database). This may help to explain the rapid increases in house prices since the early 2000s. Caldera Sánchez and Johansson (2013) find that the supply response to prices changes in Switzerland is the lowest in their sample of 21 OECD countries (Figure 1.15, Panel A) and suggest that one reason for this might be the stringency of the relevant regulation, including the time taken to obtain building permits (Panel B). Using a stock-flow model of the Swiss housing market, Steiner (2010) finds that supply-demand disequilibria can endure for extended periods of time during which prices can overshoot. She attributes these slow dynamics in part to the slow planning process for residential construction in Switzerland.


Figure 1.14. **Housing investment in selected countries**



1. For Switzerland data refer to total investment in dwellings, excluding land.

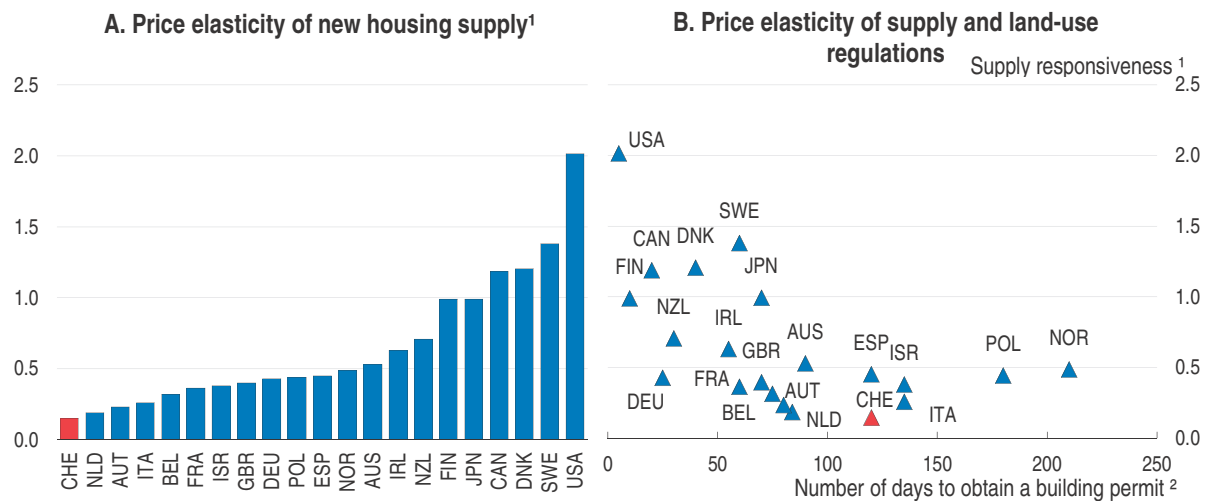
2. Excluding countries where data is not available for the full period (Mexico and Turkey).

Source: OECD Economic Outlook 97 Database (and updates); and OECD staff estimates.

StatLink  <http://dx.doi.org/10.1787/888933292579>

Spatial planning


Given Switzerland's high population density and relatively rapid demographic growth, some of the main aims of its spatial planning regulations have been to preserve agricultural lands and natural landscapes by containing urban sprawl and promoting the densification of already urbanised areas. Nevertheless, there is no shortage of building land to meet the demand for residential housing (Fahrländer Partner, 2008). However, the existing building zones are spatially not optimally distributed: those regions with lower demand tend to have the largest reserves, while in many urban areas building land for residential use is scarce. Furthermore, urban planning laws give neighbours of potential

Figure 1.15. **Housing supply responsiveness in selected countries**

1. Estimates of the long-run price elasticity of new housing supply where new supply is measured by residential investment (see Caldera Sánchez and Johansson (2011)).

2. The number of days to obtain a building permit is obtained from the World Bank Doing Business (2009) indicators.

Source: Caldera Sánchez, A. and Å. Johansson (2013), "The price responsiveness of housing supply in OECD countries", *Journal of Housing Economics*, Volume 22, Issue 3, September, pp. 231-49.

StatLink  <http://dx.doi.org/10.1787/888933292580>

construction sites a lot of leverage to delay the planning and construction process, which mainly affects large housing schemes in densely populated areas. Due to the lack of viable projects, developers have been pushed into ever more peripheral areas, thus further exacerbating urban sprawl. The Federal Law on Spatial Planning strongly influences the extent and characteristics of building zones and therefore largely defines the supply side of the housing market in metropolitan areas. That said, international evidence shows that where local governments receive a large share of taxes paid by their residents, such as in Switzerland, Germany and the United States, authorities tend to adopt a positive attitude towards development and compete to attract households (Evans and Hartwich, 2005).

The Federal Law lays down the principles of Swiss spatial planning, although the implementing legislation is cantonal, and zoning and land planning is done at the municipal level. Most cantons have joined a concordat harmonising some construction regulations. Furthermore, the Federal Law has recently been revised to deal with urban sprawl, namely through measures for removing excessively large development areas, which tend to remain unutilised for longer periods, and stimulating higher-density urban development (ARE, 2014a). For this purpose, the cantons must implement new tools to manage their settlement areas. In December 2014 the Federal Council proposed another set of revisions to address the protection of agricultural land, the co-ordination of transport and energy infrastructures with spatial development, as well as cross-border spatial-planning initiatives (ARE, 2014b). Both revisions are consistent with the trend to shifting planning competences from the municipal to the cantonal authorities. The revised law provides more detail and precision as regards cantonal tasks in spatial planning.

The main instrument for land planning is a legally binding municipal-level land-use plan, which is updated every 15 years. Zoning an area for settlement creates a duty for the municipality to build infrastructure, and in case of rezoning to no longer be residential, to compensate landowners. Additionally, it is not possible for municipalities to buy the land

before zoning it for settlement purposes, as buying and selling agricultural land is permitted only for farmers (with only a few possible exceptions). Some municipalities also prepare Municipal Structure Plans, which encompass their entire territory and aim to set the main framework for future urban development.

The revised Federal Law strongly promotes densification, especially in areas with above-average accessibility by public transport. Several cities have taken measures to increase allowed density, notably the cities of Geneva and Zurich. Furthermore, instruments for private investors and public authorities to co-operate in the mobilisation of potential increases in the density of existing zones and structures (inner development) reserves have also been introduced in the last few years. For instance, in February 2015 the government of the Canton of Zurich published plans to increase density by 20% and more in certain areas surrounding the city of Zurich itself. The supply of land for residential construction in high-demand areas could be increased by taxing land that has been rezoned for real estate but has remained undeveloped for more than, say, five years.

But in the end it is the owner of the property who decides if and when s/he wants to realise this potential. When a building nears the end of its lifetime, densification usually takes place, because from the owner's point of view it makes economic sense to construct as much floor space as possible. In cases where a building is still in good shape, it is much harder to achieve a higher density, either because the owner does not want to demolish and reconstruct, or because the building's structural conditions prevent the addition of an additional storey. Furthermore, the owner often is unaware that there exists a potential for higher density on the property. The capacity for inner development should be reassessed, and a programme of audits of individual properties that feature potential for added-value densification should be instituted, and this information should be provided to property owners.

Switzerland's 26 cantons each have different building laws and codes. The barriers this presents to cheaper housing construction were discussed in the 2009 *Survey*. Heterogeneous construction codes and standards reduce the potential for competition as compliance costs for construction firms operating across jurisdictions are higher. Differentiated labour laws across cantons also inhibit competition in the construction industry by preventing companies from exploiting economies of scale (OECD, 2009).

Environmental standards

In general, economic costs of environmental regulations are relatively low in Switzerland, reflecting comparatively low administrative burdens associated with permitting and licencing (Kozłuk, 2014). However, the environmental impact of the housing sector is not inconsiderable. Given that more than a third of Swiss energy consumption is used to heat buildings and water, the energy-saving potential of this sector is huge. Switzerland has adopted the MINERGIE standard for new and refurbished low-energy-consumption buildings. This standard is mutually supported by the Confederation and the cantons. Building a property according to MINERGIE standards is about 10% more expensive, but compared to a conventional building a MINERGIE-certified structure has up to 60% lower energy costs. As of April 2015, there were around 15 000 individual residences and 9 300 apartments with MINERGIE certification, including both newly constructed and renovated dwellings (www.minergie.ch/liste-des-batiments.html).

Most cantons offer financial incentives in the form of subsidies and grants for new or renovated MINERGIE buildings. A major vehicle for this is the federally sponsored Building Renovation Programme, launched in 2010 and taking over where the Climate Cent Buildings Programme left off. The Programme has been allocated CHF 300 million annually for 10 years and will both fund improved insulation in homes built before 2000, as well as subsidise energy-efficient construction. However, Salvi and Syz (2011) find that in Switzerland, after taking into account other factors, subsidies do not seem to trigger additional green housing activity. The authors conjecture that, as the median subsidy payment accounts for just about a tenth of the extra building cost associated with the MINERGIE certification, the subsidies are too small to encourage much new certified construction.

While in general value-preserving expenditures (maintenance and upkeep) on rental properties can be deducted from a landlord's taxable income, value-adding expenditures that entitle the landlord to raise the rent are not deductible. The exception is, however, for value-adding energy-efficiency renovations, which are both deductible and entitle the landlord to raise the rent. The landlord is allowed to pass 50-70% of the costs of renovation work onto the tenant. For tenants this can be unprofitable, because, although there are likely to be savings by virtue of lower heating and hot water costs, in practice the rent increases frequently exceed these savings (Wehrmüller, 2014).

Taxation of housing

The taxation of housing is an important policy instrument. In Switzerland home owners are subject to a wealth tax on their housing assets and also to the taxation of imputed rental income, against which mortgage interest and other expenses are deductible. At the cantonal and municipal levels a capital gains tax is imposed on the sale of both private and business property with usually progressive rates and lower taxes the longer the property is owned. Under certain circumstances, in most cantons capital gains made on the sale of real estate are also subject to a special surcharge if the duration of ownership is especially short.

Taxation of owner-occupied housing services, real estate wealth and property transactions

Switzerland is one of the few OECD countries where the imputed rent of private households living in their own home is taxed. Maintenance and insurance costs and mortgage interest payments are deductible, and if the owner does not utilise all the rooms, a further reduction in the imputed rental value is allowed in some cantons. In accordance with a verdict of the Federal Court, the imputed rental value on the cantonal level must not be lower than 60% of the market rent. Not surprisingly, this has resulted in estimated undervaluation of imputed rent of 30-40% across the most populous cantons (Bourassa and Hoesli, 2010). Moreover, property valuations used to calculate imputed rent are typically updated only infrequently, resulting in a weak link between taxes and house prices. Indeed, property taxes more generally have been found to reduce house price volatility, although the effect is small (Blöchlinger et al., 2015).

Besides the taxation of imputed rents, properties are also subject to a wealth tax. Cantons levy annual wealth taxes, and the rates vary across cantons. Individuals pay taxes on privately owned business assets and real estate situated in Switzerland. The assets are supposed to be valued at market prices, yet many cantons use an official valuation that is generally less than market value and again updated only infrequently. Personal debts,

mortgages, bank loans and overdrafts are deductible, as well as certain personal deductions and allowances depending on the canton. The wealth tax rate varies between cantons and municipalities, ranging from 0.1% to 0.96% for net taxable assets of 10 million Swiss francs (married couple without children). About half the cantons also levy an annual immovable property or land-based tax. The rates generally range from 0.02% to 0.3%. Here debts are not deductible.

A real estate transfer tax and tax on the realised capital gain applies to the sale of property. At cantonal and communal levels, capital gains on private immovable property are subject to special capital gains taxes (CGTs). However, subject to various conditions, that tax is deferred if the proceeds of the disposal are reinvested in other property used as a main residence in Switzerland. In general, a deduction is available based on the period of ownership, meaning that for a long-term ownership the tax is typically relatively low. In Geneva, for instance, the rate is 50% if the property is sold within two years of purchase, but 0% if the property is held for more than 25 years. Where ownership has been only for a short period, there is usually an additional speculation surcharge. The definitions of short-term and long-term ownership vary by canton. At the federal level, capital gains realised on real estate and other private assets are exempt from income taxation, unless the individual is deemed to have held the real estate as a business asset (e.g. when qualifying as a professional real estate broker or if investing in a construction consortium). Capital gains realised on business assets are included in profits and are subject to the general profits tax system, which is income tax for individuals or taxes on profits for legal entities. As a result, federal tax is levied in the general way, instead of separately as CGT.

Most cantons levy a real estate transfer tax on the transfer of ownership in a property based on the purchase price. If that price cannot be determined or appears arbitrary or unusually low, the market value is decisive. The rate varies by canton ranging between 0.5 and 3.5%. This tax is generally paid by the purchaser, but in some cantons it is split with the seller.

Lock-in effects from capital gains taxation

In so far as the real estate sector is concerned, the most important drawback of a tax on realised capital gains is its “lock-in” effect. Due to lock-in effects for existing homeowners, taxing (short-term) capital gains may be counterproductive to the objective of more stable housing prices, especially because it curbs the optimal reallocation of real estate properties based on the changing preferences of owners and potential buyers. Furthermore, Kugler and Lenz (2001) analyse the comparative performance of Swiss cantons by comparing trend economic growth rates in cantons with CGT against those without it. They found that the latter enjoyed an average short-(long-)run 2.2(3.1)% income gain relative to the former. Moreover, reducing the CGT rate has distributional effects: higher-income households are considerably more likely to own assets that can generate taxable gains than poorer households. Additionally, affluent households own most assets, realise most capital gains and in Switzerland pay most of their CGT at preferential rates. A CGT reduction would mainly benefit high-income taxpayers who are likely to save most of any tax break. Aregger et al. (2013) conclude that taxes on transaction values and capital gains in the real estate market are not suitable instruments of macro-prudential policy. Finally, reducing CGT rates may increase tax revenues by dramatically increasing realisations. While the effects of CGT rate changes continue to be debated and researched, the bulk of the international evidence suggests that reducing the CGT rate lowers revenues, even in the short run.

Reform of the taxation of owner-occupied housing

The objective of tax neutrality implies the equal treatment of consumption of housing services and of other goods, and of income from property and income from other assets (Eerola and Määttä, 2013). From this standpoint, a source of distortion in most OECD countries concerns the non-taxation of imputed rents, whereas rental income is taxed. Gervais (2002) and Nakajima (2010) show that this omission has a substantial negative impact on well-being. One of the aims of the the Swiss system of taxing real estate is to achieve tax neutrality by treating the owner-occupier in the same way as the pair formed by the landlord and tenant. This means fully taxing imputed rents after deduction of expenses. The second source of inefficiency may arise from differences in the taxation of property, consumer goods and other assets. This is an important problem, since property represents a substantial proportion of the capital stock in most countries.

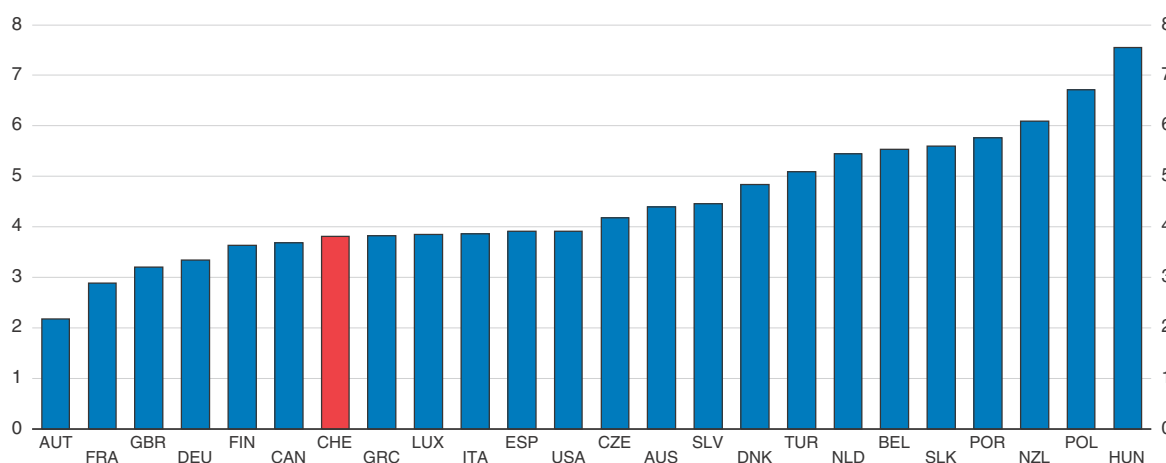
In practice, the Swiss system is based on a trade-off between the two constitutional goals of tax neutrality on the one hand and promotion of home ownership on the other hand. This is achieved by taxing imputed rents below-market rates (although not by as much as in some other countries where imputed rents are taxed). As a consequence the taxation of imputed rents in Switzerland generates no net tax revenue. Indeed, a previous study (Peters, 2009) calculated that housing accounts in aggregate are in deficit, so that abolition of the taxation of imputed rents (along with the deductibility of interest payments and maintenance expenses) would actually increase tax revenue although a more recent study suggests it would be revenue neutral, especially given the current low-interest rate environment (Morger, 2014). Another problem is that the system gives homeowners an incentive to maintain large unamortised mortgages and to invest their savings in third-pillar pension funds or other assets which are tax-privileged (in particular, assets which generate tax-exempted capital gains). This creates incentives for holding gross indebtedness at a high level and generates a tax-deductible expense and no extra revenue. Recent rule changes requiring mortgages to be partially amortised have to some extent addressed this issue (see below). The other major source of inflated expenses is that environmental and energy-saving investments are claimed as maintenance expenses. One solution would be to simply disallow claims that exceed the imputed rent tax liability to be written off against other income. Another solution would be to control maintenance expenditures by allowing a fixed charge as a percentage of the value of the building and to treat additional expenditures as capital outlays to be depreciated over time. A solution along these lines was adopted in the Netherlands in 1971, although even so, owner-occupied housing accounts there too remain in deficit by about 2% of GDP; but this is probably related to the generosity of mortgage debt relief rather than to the treatment of deductible expenditures (Vandevyvere and Zenthöfer, 2011).

While phasing out the taxation of imputed rents and all of the associated expense claims including mortgage interest payments might be considered, a careful evaluation must also include incentives on other savings instruments. A pragmatic solution would be to impose a ceiling on expense claims, so deductions cannot exceed taxes paid on imputed rents. As a first step, unless rented out, mortgage interest deductibility should be restricted for owner-occupied and second homes. In any case, deductible expenses should be more strictly defined, particularly the amount of allowable interest deductions, properties should be valued more frequently, and the amount of imputed rental income should be more closely aligned to market levels. And, finally, net deductions from housing should be ring-fenced so that they cannot be applied to other income.

Tenancy law and low rental yields


Rental yields are one of the inputs in the decision to invest in buy-to-let real estate. In Switzerland, nominal rental yields as low as 3% in some cities (Wüest & Partner, 2013) and around 4% for the whole of the country (Figure 1.16) either imply house price overvaluation or may be attributable to rent controls. In Switzerland, tenant protection from abusive rents is a constitutional right. Only apartments that come onto the market for the first time are exempt from rent control and so subject to market forces. In principle, the relationship between the landlord and the tenant is determined by a contractual agreement, and the rent can be freely agreed by the parties. This first tenant can, however, challenge the rent, which can be reviewed for unfair terms.

Figure 1.16. **Rental yields in premier cities in selected OECD countries,¹ mid-2014**
% of market price



1. The gross annual rental income for 120-sq.m. apartments located in premier city centres, expressed as a percentage of property purchase price before taxes, maintenance fees and other costs.

Source: GlobalPropertyGuide.com.

StatLink  <http://dx.doi.org/10.1787/888933292592>

As soon as the first lease has been signed, tenancy law takes over, and the rent can be adjusted for inflation, the reference interest rate and other cost factors. In spite of the falling reference interest rate, rents for existing tenants have been more or less stable in recent years. Several attempts have been made to uncouple rents from interest rates, but all have failed for political reasons. After the contract ends, the owner can raise the rent for the next tenant to the local market level, which can again be disputed, and the landlord has to prove compliance with the law. One of the parameters considered is the rent prevailing in neighbouring residences. Apart from cases of tenant misbehaviour, the owner can terminate an ongoing contract only if s/he needs the apartment for him/herself or for close relatives, or if the apartment is to be thoroughly renovated. In order to improve transparency in the rental market and to damp rent increases, the Federal Council recently decided that landlords must communicate the previous tenant's rent to potential new tenants. A draft law was presented to the parliament in spring 2015.

In times of high demand for rental apartments, the tenancy laws can lead to market distortions, as market rents increase much faster than ongoing contract rents. Long-term tenants therefore have no incentive to move even if the quality and size of their current

apartment surpass their needs. It is usually much more expensive for an elderly couple to move to a new or refurbished smaller dwelling than to stay in their large, depreciated dwelling after their children move out. These lock-in effects temporarily increase statistics on the consumption of floor space per capita, de-densify the population and prolong housing shortages. One solution would be to allow renegotiation of rents after the end of the term of a contract, rather than only when the tenant changes. Consideration should also be given to applying differentiated rent-setting rules when large residences are occupied by few people, although such a formula should take into account the ability of low-income households to pay for moving. Moreover, broader deregulation of the tenancy laws would possibly lead to higher rents, harming low-income groups. To support them, targeted housing allowances and/or more social housing would be needed.

Non-profit co-operatives and social housing

Social housing comprises a very small proportion of the Swiss dwelling stock with only around 14% of rental properties in this category. This is among the lowest shares in the OECD – far below that of the Netherlands, Austria, and the Nordic countries, although on a par with Germany and Luxembourg (Figure 1.5). In Switzerland many of these dwellings are provided by non-governmental, non-profit co-operatives that let their apartments at cost. Most co-operatives operate in large cities, where affordable housing is most needed because of high rents and the large number of poorer households (Table 1.1). While some co-operatives operate totally independently from government and impose few restrictions on their tenants (as to household income or persons per dwelling), most receive some form of subsidy, such as land for building and leases at below-market prices, tax breaks and financing at below-market interest rates. These subsidies usually come with an obligation to let the units only to low-income households. Some co-operatives impose some form of redistribution within the co-operative where households with higher incomes subsidise low-income households to some extent.

Table 1.1. Apartments owned by non-profit co-operatives, 2013

	Number	% of total number of apartments
Switzerland	157 564	3.7
Zurich	40 637	18.9
Geneva	4 785	4.5
Basel	9 517	9.9
Bern	5 298	6.9
Lausanne	5 463	7.3

Source: Swiss Federal Housing Office.

Until a few years ago most local and regional authorities had no explicit policies with regard to affordable housing. Since then voters in several cantons and municipalities have passed initiatives forcing governments to adopt a strategic approach and to increase its supply. Voters in the Canton of Zurich and the city of Zug, for example, want their respective governments to establish planning zones where at least part of any newly built floor space is dedicated to affordable housing. To counter the shortage of affordable housing, the canton of Geneva passed a law obliging new buildings in a *zone de développement* to have a minimum percentage of subsidised apartments or part of the building to belong permanently to the government or a non-profit organisation that will

manage subsidised housing (Credit Suisse, 2014). In spite of this law, the Geneva cantonal government's 2007 goal of 3 500 additional subsidised apartments per year has so far been missed by a wide margin, with only 1 400 units built per year on average, of which only around 500 are subsidised (République et Canton de Genève, 2015).

Macroeconomic risks from the housing market

At the end of 2013 there were 283 banks in Switzerland: 2 big banks (Credit Suisse and UBS), 24 cantonal banks (the biggest being Banque Cantonale Vaudoise and Zürcher Kantonalbank), 64 regional banks and savings banks, Raiffeisen bank (comprising 305 co-operatives), 47 stock exchange banks, 14 other banking institutions, 93 foreign-controlled banks, 27 branches of foreign banks and 11 private banks. These numbers have remained roughly constant over the past decade, except for regional banks and savings banks where the consolidation that began in the aftermath of the bursting of the 1980s housing bubble and subsequent banking crisis (Box 1.3) has continued, albeit at a much more measured pace.

Banks that are exposed to the real estate sector through mortgage lending are subject to both interest-rate and house-price risks. Direct interest-rate risk arises when there is a mismatch between the interest rate at which a bank borrows and that at which it lends, whereas indirect interest-rate risk captures the risk that borrowers become unable to pay as interest rates rise. House-price risk arises when the value of the house falls below the value of the mortgage used to purchase the property. Internally, banks handle these risks through asset and liability management (ALM) strategies. But because of the potentially large negative externalities of bank failures, governments task prudential supervisory agencies with regulating mortgage lenders to ensure these risks are being properly managed.

In Switzerland, this prudential supervision is jointly handled by the SNB and the Financial Market Supervisory Authority (FINMA). The Federal Department of Finance (FDF) also plays a role, particularly in so far as the Federal Council needs to be involved. To facilitate these joint supervisory and regulatory roles, MOUs were signed between the SNB and FINMA in 2007 (and revised in 2010 to establish a Steering Committee, which is responsible for co-operation between the two institutions at strategic level), and between the SNB, FINMA and the FDF in 2011; the latter governs collaboration among the three authorities, including the exchange of information on financial stability and financial market regulation issues, as well as collaboration in the event of a crisis. Legislation is currently being drafted aimed at strengthening information exchange among them.

In the current instance, where mortgage interest rates are at historic lows and house prices are at historic highs, the risk to the banking sector is higher than the norm of the past few decades. In contrast to most other European countries, the exposure of Swiss banks to residential real estate has increased substantially over the past five years, with the ratio of the stock of residential loans to total bank loans increasing from 30% in 2009 to 38% in 2013 (Figure 1.17, Panel A). SNB data shows that mortgages make up around 84% of all domestic bank loans excluding interbank credit. With a stock of residential real estate loans at over 120% of GDP, Switzerland is the leader in the OECD (Panel B). Indeed, interest-rate risk has become more acute in Switzerland in recent years as more and more borrowers take fixed-rate mortgages, typically fixed for five to ten years, and also because the interest rate on mortgages has dropped so dramatically in recent years. Already in 2013 around 15% of new mortgages bore an interest rate of less than 0.5%.

Box 1.3. The 1990s Swiss banking crisis

The strong real estate market boom during the 1980s saw the stock of domestic mortgages double between 1981 and 1989. During this time amortisation was not mandatory for the majority of mortgages, and banks typically tolerated high lending limits, with loan-to-value ratios of 80-100% being common. The average ratio of outstanding mortgages to total bank assets was about 30%, with a peak of 36% in 1991. The sharp decline in real estate prices that started in 1989 in the most inflated regions, combined with a general macroeconomic slowdown, adversely affected banks' loan portfolios and some banks started to feel pressures on both sides of their balance sheets. On the assets side, borrowers began to have trouble servicing their debts, especially small businesses and households. Falling real estate prices and high lending limits implied that in many cases the collateral no longer covered the total amount of the mortgage or the loan, and banks were forced to write off large sums. On the liabilities side, banks faced mounting problems to finance their mortgages with savings deposits, forcing some banks to issue medium-term notes and mortgage bonds, although a gradual withdrawal of this type of funding was observed as customers shifted to regular bonds, equities and mutual funds.

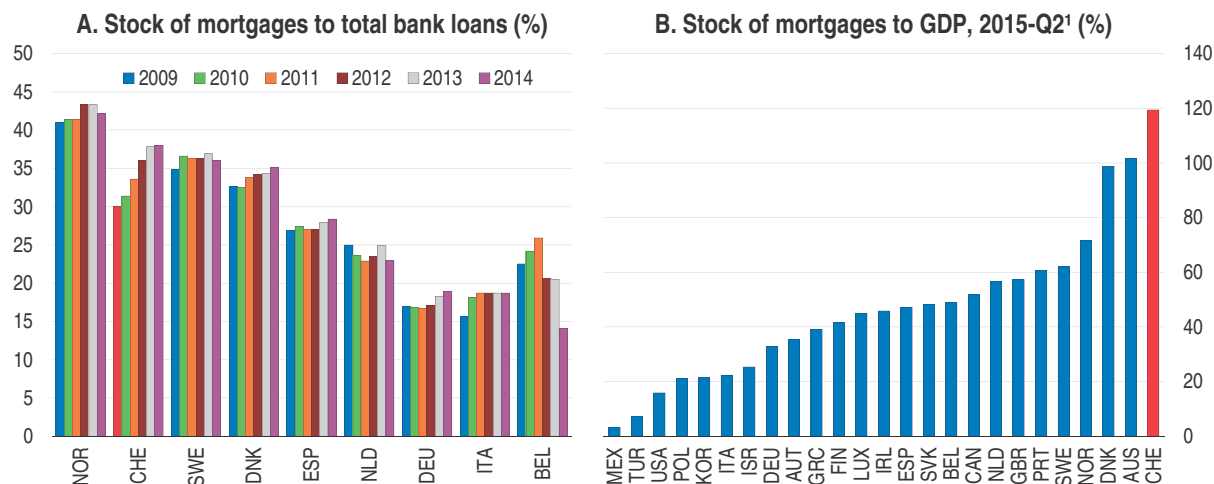
Between 1991 and 1996, banks incurred estimated losses of around CHF 42 billion (roughly 8.5% of the total loan volume or more than 10% of annual GDP). A key feature of the Swiss banking system at the time was the high degree of segmentation – there were 371 banks operating in Switzerland at end-2001, of which 219 were domestic banks. While the large banks incurred the biggest share of total losses, their well-diversified portfolios allowed sufficient profits to be earned out of their other businesses to cover these losses. They were strong enough to write off the non-performing loans quickly. Likewise the Raiffeisen banks were not saddled with a significant problem of non-performing loans and therefore emerged relatively unscathed by the crisis. In contrast, the regional and cantonal banks, which focused on the domestic loan business, suffered most. The regional banks bore the brunt of the crisis, with almost half of all them disappearing during that period. However, only a single bank had to be liquidated – in October 1991, the Swiss Federal Banking Commission (SFBC) closed Spar+Leihkasse Thun, a medium-sized regional bank with assets of CHF 1.1 billion. The liquidation was accompanied by depositor losses, as the bank's assets could not cover outstanding liabilities. All other regional banks that experienced problems merged with stronger banks. Five state-owned cantonal banks received taxpayers' money, but the fiscal cost of resolution for these cantonal banks combined was less than 1% of annual Swiss GDP.

As a response to the regional banking crisis, the SFBC introduced an Early Information System in 1997 that allowed it to monitor in real time important balance-sheet ratios, the profit and loss account, off-balance-sheet activities and bad loans. The Swiss National Bank (SNB) created a Systemic Stability division in 2001 and started to co-ordinate the collection of statistical data with the SFBC. As a result of the crisis, a new law on bank insolvency was passed in 2003, which facilitated more efficient liquidation and restructuring of troubled banks and offered better protection for small depositors.

Source: BIS (2004), "Bank Failures in Mature Economies", *Bank for International Settlements Working Paper*, No. 13, April, Basel.

Despite repeated SNB warnings, banks keep expanding their mortgage loan books. In its latest *Financial Stability Report* (SNB, 2015), the SNB stated that banks' risk appetite in mortgage lending remains high overall. While the growth in mortgage lending slowed in 2014 relative to the previous couple of years, at around 4% per annum it still outstripped nominal per capita GDP and disposable income growth. And the historically high level of interest-rate risk in the banking books has not declined.

Figure 1.17. **Stock of residential loans relative to total bank loans and GDP**



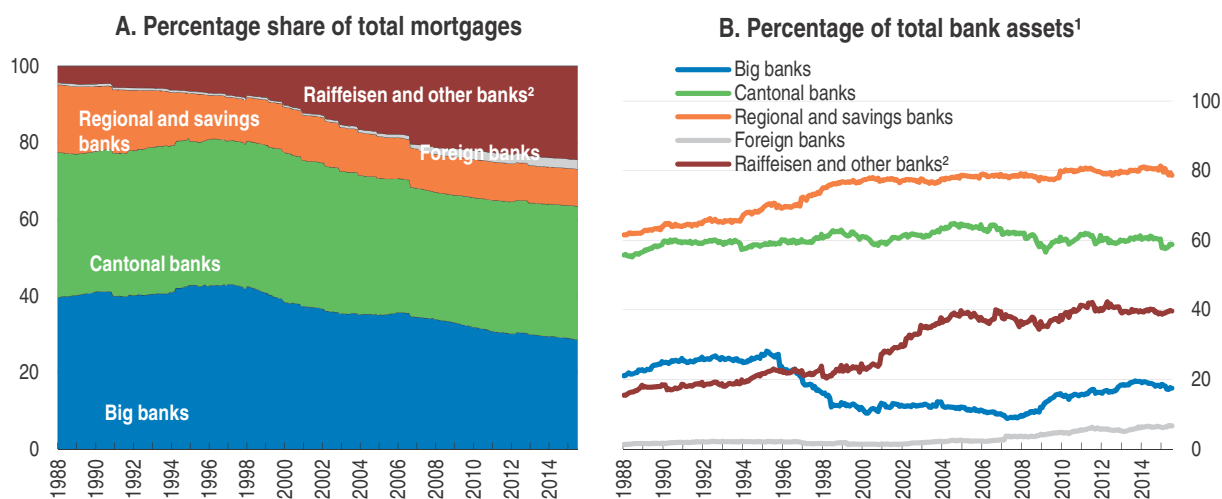
1. Or latest available observation. 2014 annual average for Switzerland.

Source: IMF, Financial Soundness Indicators (FSI); OECD Economic Outlook 97 Database (and updates); and OECD calculations.

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There is considerable variation across bank types in Switzerland in their degree of exposure to the mortgage market. In terms of their shares of the total stock of domestic mortgages, at the beginning of 2015 cantonal banks were the largest players, having just over a third, while the two big banks held around 29% (Figure 1.18, Panel A). Reflecting ongoing consolidation among regional and savings banks, their share has declined over the past three decades to around 10%, while the share of Raiffeisen and other banks has increased from below 5% in 1990 to 24% at the beginning of 2015 (Box 1.4). According to Raiffeisen Schweiz figures, the group's share of the total Swiss mortgage market was 16.6% at end-2014, up from 12.6% in 2002. The profile of mortgage-to-asset ratios across bank types in Switzerland has remained fairly stable over the past 10 years (Panel B). Regional and savings banks are the most mortgage-focused, with around 80% of their assets in

Figure 1.18. **Total mortgage loans by bank type**



1. Domestic mortgages as a percentage of total foreign and domestic assets.

2. Excluding PostFinance.

Source: SNB (2015), *Monthly Bulletin of Banking Statistics*, September.

StatLink <http://dx.doi.org/10.1787/888933292614>

Box 1.4. One hundred years of Raiffeisen banks in Switzerland

Raiffeisen Group is a Swiss co-operative bank. After UBS and Credit Suisse, it is the third largest bank in Switzerland. Raiffeisen has 3.7 million customers, 1.8 million of whom are co-operative members (co-owners). The Group consists of the 305 co-operatively structured banks, which collectively have over one thousand branches throughout Switzerland and around 11 000 employees. The group is a member of the International Raiffeisen Union (IRU), which is an association of co-operatives based on the ideas of Friedrich Wilhelm Raiffeisen (1818-88). Switzerland's first Raiffeisen bank was founded in Bichelsee, Canton Thurgau, a century ago. The purpose of the initiative, taken by a local clergyman, was to ease the dire financial position of the farming and business community by letting the people help themselves.

The size of the group has more than doubled over the past 14 years, and mortgage loans have increased by around 120% over that period (Table 1.2). Its share of the domestic mortgage market has increased from 12.5% in 2002 to 16.6% in 2014. The success of the Raiffeisen is based on several factors. First, the granting of loan facilities is limited to low-risk commitments to members of the individual banks. The fact that borrowers must be co-owners who are liable to provide additional cover makes borrowing unattractive for high-risk customers. On an organisational level, there is a combination of decentralised responsibility of the member banks with the strong management role of the St. Gallen head office. The latter plays a vital role in monitoring business activity and undertaking structural adjustments.

Table 1.2. Raiffeisen Group balance sheet and mortgage share

	Assets CHF mlns	Mortgages CHF mlns	Mortgage to asset ratio %	Percentage of domestic mortgage market %
2002	92 684	68 570	74.0	12.5
2005	108 187	83 893	77.5	13.8
2010	147 239	119 595	81.2	15.7
2013	176 575	143 659	81.4	16.3
2014	188 640	150 880	80.0	16.6

Source: Raiffeisen Group Annual Reports, various editions.

Over the past three years, Moody's has downgraded its rating of Raiffeisen Group from Aa1 to Aa3. The most recent downgrade, in July 2013, was instigated by: i) the Group's above-average residential mortgage-loan growth over recent years, leading to increased susceptibility to shocks under a scenario of a significant slowdown in the Swiss housing market; and ii) the continued challenging operating environment, characterised by net interest margin compression and low interest rates, which constrain the group's profitability prospects.

mortgages. For cantonal banks the ratio is around 60% and for Raiffeisen around 80%, and other banks around 40%. The big banks have seen some increase in asset concentration in mortgages, going from 10% in 2007 to close to 20% in 2015; however, this is largely a reflection of a consolidation in the business of the two big banks since the global financial crisis and the Too-Big-To-Fail (TBTF) reforms, which sought to address systemic risk arising from Switzerland's large financial institutions including from moral hazard.

Prudential measures in the mortgage market

Switzerland's prudential regulation of its mortgage lenders is a combination of legal directives by supervisory authorities and self-regulation by the banking industry. Table 1.3 outlines the array of legal requirements, banking industry guidelines and individual bank internal policies. Self-regulation plays a very important role, although sometimes arm-twisting by the authorities has been required, and, indeed, self-regulatory measures adopted by the banking sector typically receive the imprimatur of the regulatory authorities. These self-regulations are not mandatory, and, indeed, mortgages that breach these guidelines are not uncommon these days. Self-regulations where minimum standards are not fulfilled, are rather uncommon. In these cases, the entire mortgage amount must be risk weighted at 100%. The second prong of regulation is legal directives that are imposed by the supervisory authorities including the Federal Council, SNB and FINMA.

Table 1.3. Regulation and “self” regulation in the mortgage sector

Regulations/Policies	Regime	Date
Borrowers required to provide at least 10% in equity (excluding second-pillar pension savings) when applying for a new mortgage.	FINMA-approved self-regulation (of the SBA) ¹	July 2012 (5-month transition period)
The mortgage must be amortised to an LTV of two-thirds within 20 years.	FINMA-approved self-regulation (of the SBA) ¹	July 2012 (5-month transition period)
The legal framework for a counter-cyclical capital buffer (CCB) was put in place.	Legal	July 2012
The SNB abstained from proposing the activation of the CCB for the mortgage sector.	Legal	August 2012
Increase in capital requirements for high-LTV loans.	Legal	January 2013
Sectoral CCB activated. Set at 1% by 30th September 2013 (announced in February 2013).	Legal	February 2013
Sectoral CCB raised to 2% by 30th June 2014 (announced in January 2014).	Legal	January 2014
New mortgages must be amortised to a LTV of two-thirds within 15 years, subject to linear repayment.	FINMA-approved self-regulation (of the SBA) ¹	September 2014 (5-month transition period)
General and qualitative guidelines of the Swiss Bankers Association (SBA)		
First revision of the guidelines of the Swiss Bankers Association “on examining, evaluating and settling mortgage-backed loans”. Issues covered, among other things, are affordability (methods for calculation of a level of sustainable income), property valuation standards, loan-to-value, and amortisation.	FINMA-approved self-regulation (of the SBA)	October 2011
Second revision of the guidelines of the Swiss Bankers Association “on examining, evaluating and settling mortgage-backed loans”. Focus on second incomes and the “lower of cost or market” principle. (This was coupled with the shortening of the amortisation period which is implemented as a minimum standard).	FINMA-approved self-regulation (of the SBA)	September 2014
Common internal bank policies		
Loan-to-value of around 80%.		
Interest-to-income (affordability based on imputed interest rates) of around one third.		
Interest rate used in imputing interest payments (5% plus 1% amortisation and 1% of property value for maintenance = approx.7%).		

1. These regulations have the nature of minimum standards within the self-regulation guidelines. Due to competition laws, banks are allowed to circumvent these requirements if they risk weight the entire loan amount with 100%. This treatment is laid down in the Capital Adequacy Ordinance (CAO). For instance, for residential mortgage loans, this would result in a substantial increase compared to an average risk weight of 35% to 50% depending on the LTV.

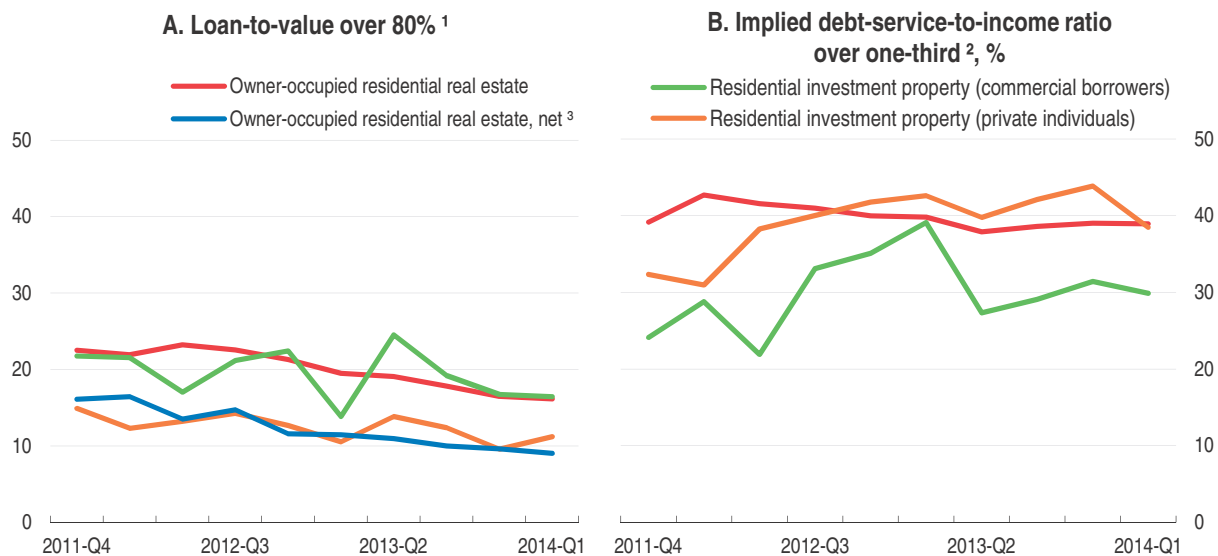
Source: SBVg (2014), “Richtlinien betreffend Mindestanforderungen bei Hypothekendarfinanzierungen”, Basel; FINMA; SNB.

While maximum loan-to-value (LTV) ratios for mortgages are not legally binding, the internal policies of banks typically specify a ceiling of 80%. Moreover, high-LTV mortgages are legally required to be backed by high levels of capital, and in January 2013 this rule was tightened further. Guidelines of the Swiss Bankers Association (SBA), which have been approved by FINMA, set down standards for estimating property valuations used in LTV-ratio calculations. With regards to affordability (debt-service coverage) ratios, banks also have internal policies that typically set a target of no more than one-third. However, unlike LTV ratios, there are no legal regulations dealing with affordability, only SBA guidelines for the calculation of a level of sustainable income. Moreover, banks' practice of using a 5% interest rate (a long-term historical average), with 1% for amortisation costs and 1% of the total property value for maintenance costs added on top, to calculate an affordability ratio, gives a large precautionary buffer in the current environment of historically low mortgage interest rates.

Estimates put the average LTV ratio in the Swiss housing market at about 45%. This may seem low, but it reflects the fact that a substantial share of households has little or no debt, as they have already repaid almost all of their mortgages. This means that many new home owners have a much higher LTV ratio. The share of new mortgage loans with a LTV exceeding 80% has declined in the last two years, but still one in six new mortgages exceeds the threshold, notably based on a most likely "overheated" property value (Figure 1.19, Panel A).

However, from the point of view of the banks, they tend to be more sanguine regarding the risks, taking the view that, even if they have trouble repaying mortgages, most borrowers have scope to cut discretionary spending, such as for holidays and other consumption, in order to not default and remain home owners (see below). Therefore, an

Figure 1.19. **Share of new mortgages with high loan-to-value and implied debt-service-to-income ratios**




1. Proportion of new mortgages with LTVs above 80%.

2. Proportion of new mortgages with LTIs where imputed costs would exceed one-third of gross wage or pension income (private properties) or rental income (investment properties), respectively, at an interest rate of 5% as well as 1% for maintenance costs and 1% for amortisation costs.

3. Net figures including pledges from pillar 2 and 3a pension funds.

Source: SNB (2014), *Financial Stability Report 2014*, Zurich.

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excessive LTV would be a minor problem as long as the borrower could pay the interest, and therefore the debt-service-to-income ratio should be the primary focus. Interestingly, however, recent regulation and “self” regulation have concentrated on appropriate LTV ratios and not on the debt-service-to-income ratio. Banks are free to set their own policy in this regard. In its *Financial Stability Report 2015*, SNB (2015) calculated that the proportion of new mortgages for owner-occupied residential real estate that exceed the one-third interest-to-income ratio was 41% in 2014 when applying a 5% interest rate and current disposable income levels as the base (Figure 1.19, Panel B). Consideration should be given to formulating a framework for explicitly regulating affordability with a view to adding this to the macro-prudential toolkit. Moreover, given that borrowers financing rental properties may not be as responsive as households’ borrowing to recent regulatory measures, mortgage lending to these borrowers should be monitored closely.

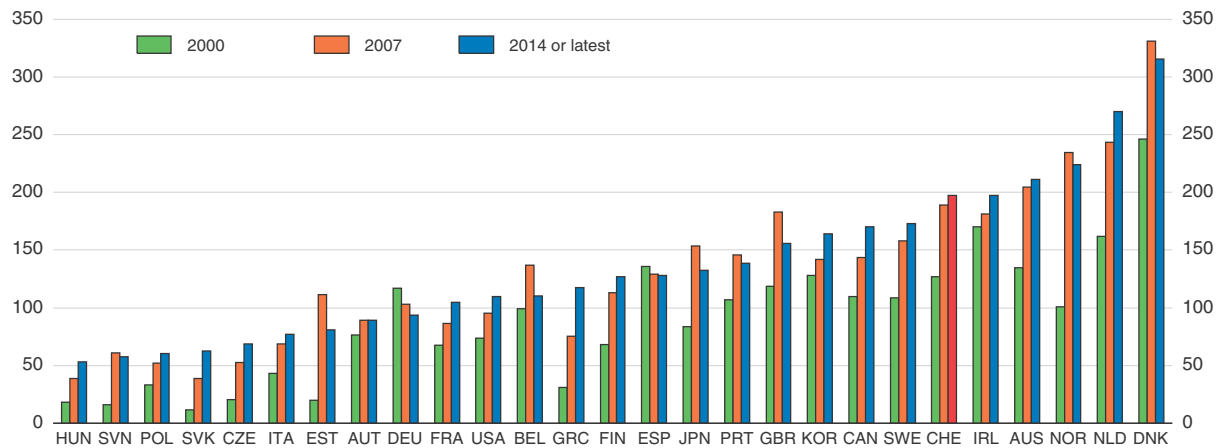
In June 2012, the Federal Council agreed to implement a package of measures aimed at reducing risks in the housing market, including the so-called counter-cyclical buffer (CCB). Its two main objectives are, first, to protect the banking sector from the consequences of excessive credit growth by increasing its loss-absorbing capacity and, second, to reduce the attractiveness of mortgage lending. The CCB is a component of the Basel III framework and is to be introduced by most countries over the next few years. It was introduced early in Switzerland following concerns about the risks of cyclical imbalances developing in the domestic mortgage and real estate markets. The CCB framework has been implemented so that it can be applied on a broad basis or targeted at specific segments of the credit market. Also, in line with Basel III, the maximum level of the CCB is set at 2.5% of total domestic risk-weighted assets of the individual bank. The CCB is applicable to Swiss banks and to subsidiaries of foreign banks. Activation and adjustments to the CCB are proposed to the Federal Council by the SNB after consultations with the FINMA. It is the Federal Council that takes the final decision on the CCB, and FINMA supervises its implementation at the individual bank level.

The CCB was first activated in February 2013, with the Federal Council accepting the SNB’s request to require banks to increase capital by 1% of their residential-mortgage lending by September 2013. In January 2014, the CCB was increased to 2%, with required compliance by end-June 2014. The SNB decided that it was necessary to increase the CCB because, while the initial activation boosted banks’ resilience, the sustained strong increase in mortgage loans and the prices of residential properties caused imbalances to continue to build up in the low-interest-rate environment. It was the SNB’s assessment that these imbalances constituted a considerable risk for the stable development of the economy and thus also for the banking sector’s soundness.


Risks to households

Measured in gross terms, Swiss households are among the most indebted in the OECD and have become more so over the past decade (Figure 1.20). In 2013 gross household debt in Switzerland reached 200% of household disposable income. Moreover, according to SNB data, in 2013 mortgages made up over 92% of all household financial liabilities and between 2000 and 2013 the total stock of mortgages held by Swiss households increased by 66%, while all other financial liabilities increased by just 5%. As seen above, the Swiss tax system generates incentives for households to leverage their wealth. The deductibility of mortgage interest payments is both regressive and encourages borrowing, and the wealth

Figure 1.20. **Household debt in OECD countries**
% of disposable income



Source: OECD Economic Outlook 97 Database (and updates) and national sources.

StatLink  <http://dx.doi.org/10.1787/888933292629>

tax does not diminish incentives to leverage, as it is assessed on net household wealth. Jordà et al. (2014) show that the severity of economic downturns is related to the level of household debt, suggesting the importance of focusing macro-prudential policy on the vulnerabilities inherent in high levels of household debt.

Overall, the ability of many households to weather an adverse macroeconomic shock or a major change in interest rates is questionable. It is comforting that, contrary to the situation in the early 1990s, most mortgages granted in the last 10 years are at fixed interest rates, which are thought to temporarily shield the borrowers against the effects of rising interest rates. Nevertheless, the maturity structure of said mortgages gives reason for concern, as 75% of total mortgage volume will have to be re-priced in the next five years, with roughly 40% of the stock maturing within 12 months (SNB, 2015). A major part of the domestic mortgage volume will thus be affected by interest rate changes in the short and medium term. That said, a substantial buffer against household default is provided by banks' practice of using an indicative interest rate significantly higher than current market rate when assessing a household's eligibility for a mortgage. Nevertheless, as pointed out above, a large share of mortgages breaches this self-regulation, particularly with regard to interest-to-income ratios. Nonetheless, Brown and Guin (2013) concluded that if interest rates went back to their long-term level of 5% and house prices adjusted downwards by 20%, this would not, in the short or medium term, lead to a significant increase in mortgage defaults. However, if this situation were sustained, as happened in Switzerland in the 1990s, it could result in a significant increase in mortgage defaults. The SNB also warned of this possible outcome in its 2014 *Financial Stability Report* (SNB, 2014). That having been said, recent research suggests that highly indebted households are willing to cut consumption more than less indebted households in the event of a crisis, suggesting resilience in the face of possible mortgage default (Baker, 2014; Bunn 2014; Lau Andersen et al., 2014).

Recommendations to mitigate risks in the housing market

- Establish a framework for explicitly addressing affordability risk, to be used if needed to contain financial stability risks related to imbalances in the housing and mortgage markets. Reassess the role played by government-mandated guaranteed returns on pension funds in fuelling the boom in house prices.
- Review spatial planning regulations to make it easier to build denser housing.
- Undertake audits of potential for added value in existing dwellings, and provide this information to homeowners.
- Harmonise cantonal and communal land-use and building codes to promote greater competition and economies of scale in the construction industry.
- Adjust tenancy law to minimise lock-in effects.
- Adjust the valuation of properties used in calculating imputed rental income more frequently so that it more closely follows market prices.
- Limit the tax deductibility of mortgage interest so that, combined with maintenance outlays, it does not exceed to the amount of declared imputed rent.
- Impose an extra tax on land in high-demand areas that has been rezoned for real estate but has remained undeveloped for more than five years.
- Restrict income tax privileges or mortgage deductibility for owner-occupied first and second-home owners.
- Ensure that the SNB and other regulators continue their communication strategy of warning households and investors of the growing risks of borrowing to purchase real estate.
- Monitor closely mortgage lending to firms or households for rental properties, which may not be as responsive as the owner-occupied segment to recent regulatory measures.

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