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# Housing Finance, Prices, and Tenure in Switzerland

Steven C. Bourassa\*, Martin Hoesli\*\*, and Donato Scognamiglio\*\*\*

## Abstract

*In contrast to many other countries, Switzerland generally has not seen soaring house prices in the 2000s and house prices have only recently started to diminish slightly. Also, Swiss authorities do not engage in trying to increase the homeownership rate much above its current level. This paper presents the main aspects of housing policy and finance in Switzerland, which can help to explain these idiosyncrasies. House prices and rents are also analyzed. The policies that are discussed in this paper may be useful to housing policy makers in other countries.*

After years of bullish activity, many housing markets have been experiencing significant price declines in recent months (Exhibit 1). In the United States, for instance, the S&P/Case-Shiller index of 20 metropolitan areas declined by 29% between July 2006 and January 2009. Similar price drops have been recorded in countries such as the United Kingdom and Ireland. In many of these markets, house prices had risen to levels substantially higher than those warranted by market fundamentals [see Black, Fraser, and Hoesli (2006), for the U.K., and Bacon and MacCabe (2000), for Ireland]. Some of the price increases were of course related to significant changes in fundamentals such as demographics and disposable household income [see Stevenson (2008), for Ireland]; however, much of the current market behavior constitutes a return to more sustainable price levels. In addition, the current economic crisis has led to substantially lower fundamental values.

One driver of the fast rising house prices in the U.S. and many other countries until the mid-2000s was lax lending, which enabled many households to purchase a property even when they did not have sufficient equity for down payments or adequate income. In the U.S., for instance, lenders would finance a home purchase with only a 5% down payment and in some cases with less. The homeownership rate in the U.S. rose from about 64% in the mid-1990s to over 69% in the mid-2000s, but dropped to 67.4% by the second quarter of 2009 and is expected to drop further.<sup>1</sup> Similar lending behavior occurred in the U.K. and Ireland, with very high loan-to-value (LTV) ratios being the norm as borrowers were able to increase the value of their mortgages based on the rising value of their properties.

Switzerland is an interesting case study because it does not appear that house prices have risen there in recent years on average at a faster rate than fundamentals

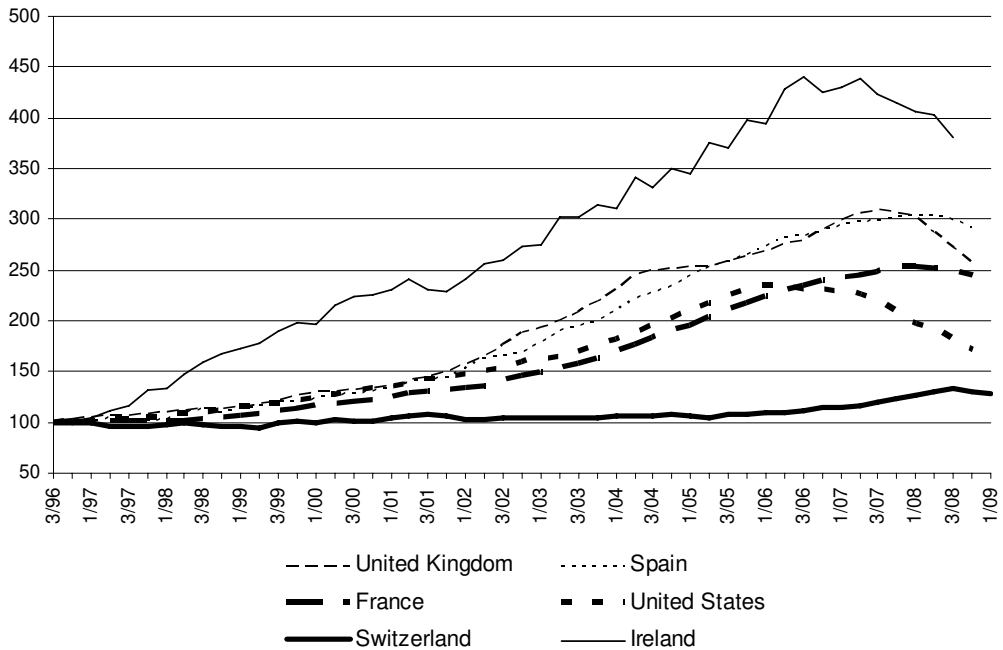
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**Exhibit 1**  
**International Comparison of House Price Indexes,**  
**3rd Quarter 1996–1st Quarter 2009**

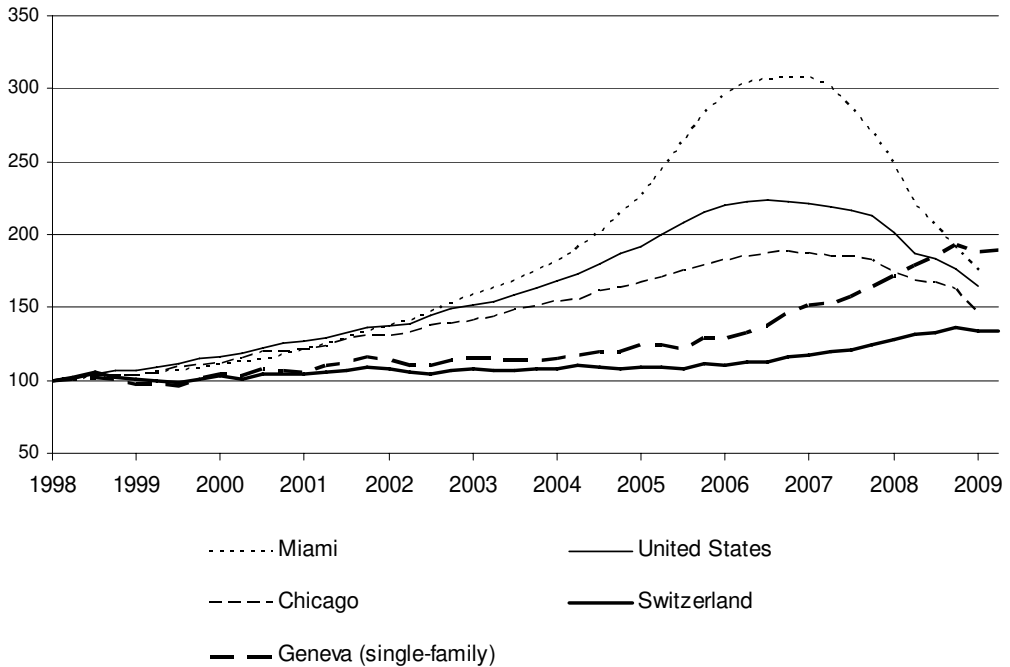


Sources: Halifax (U.K.), Banco de España (Spain), Notaires/Insee (France), S&P/Case-Shiller (U.S.), IAZI (Switzerland), and Department of Environment, Heritage, and Local Government (Ireland).

(Bourassa, Hoesli, Scognamiglio, and Zhang, 2009). From 2000 to the third quarter of 2008, the IAZI private real estate price index (both houses and condominiums are included in the index) rose by 32%, while the S&P/Case-Shiller U.S. house price index rose by more than 100% between 2000 and the summer of 2006.<sup>2</sup> The housing market in Switzerland appears to have peaked in the third quarter of 2008, with a small drop in prices during the last quarter of 2008 (−2%) and only a trivial decrease during the first half of 2009. As in the U.S., there has been significant geographic variation in house price appreciation in Switzerland with Geneva, for example, appreciating at a much faster rate than the country as a whole (Exhibit 2). Single-family house prices rose in that canton by more than 60% between 2004 and 2008. This suggests that although the country as a whole did not experience a house price bubble, there may be price bubbles in some Swiss markets.

In general, however, the contained house price increases during the 2000s can be attributed to quite stringent lending practices by Swiss banks. A 20% down payment is required when purchasing a property. Also, the debt service (interest and amortization) cannot exceed one-third of the household's income. Another moderating factor has been the use by many lenders of hedonic mass appraisal models for valuation for underwriting purposes. As compared to other valuation methods, the

**Exhibit 2**  
**Comparison of House Prices in Switzerland and the U.S.**



Sources: S&P/Case-Shiller (U.S.) and IAZI (Switzerland).

hedonic method leaves less room for appraiser subjectivity and hence estimated values are less prone to being inflated excessively in rising housing markets.

Another interesting feature of the Swiss housing market is that the homeownership rate is one of the lowest of the world (Exhibit 3). Swiss authorities often mention an increase in the rate as an objective, but only limited efforts are made to provide the political and tax means to achieve an increase. This is in sharp contrast with other countries, such as the U.S., where homeownership is largely encouraged by government. Despite the fact that the homeownership rate is low in Switzerland, the country is one of the wealthiest in the world, with a very high standard of living. Hence, it is to some extent debatable whether homeownership needs to be encouraged in order to enhance quality of life. Another unusual aspect of the Swiss housing market, which is related to the low ownership rate, is that institutional investors in Switzerland hold a significant portion of their assets (14.1%) in residential properties (Hoesli, 2008).

The purpose of this paper is to discuss unusual aspects of the Swiss housing market, as well as characteristics of the market that might be of interest to policy makers in other countries. Hence an attempt is made to explain why house prices have not exhibited the same boom and bust cycle as in some other countries and also why the homeownership rate remains low.

**Exhibit 3**  
**Ownership Rates for Selected European, North American, and**  
**Australian Countries**

Country	%	Country	%
Romania	91.6	New Zealand	67.8
Hungary	90.9	United States	66.2
Lithuania	84.9	Luxembourg	66.1
Spain	82.1	Canada	66.1
Slovenia	81.5	Finland	63.5
Ireland	76.9	Belgium	63.1
Norway	76.7	Latvia	59.6
Portugal	74.8	Poland	58.9
Slovakia	73.6	France	54.7
Estonia	72.2	Netherlands	50.4
Greece	71.7	Austria	48.7
Italy	71.2	Liechtenstein	48.1
Australia	69.5	Czech Republic	47.1
United Kingdom	68.0	Germany	42.0
Cyprus	68.0	Switzerland	33.6

Notes: Data are from the most recent census prior to 2002. The sources are European Commission, Australian Bureau of Statistics, Statistics Canada, Statistics New Zealand, Swiss Federal Statistical Office, and the United States Bureau of the Census.

The structure of the paper is as follows. It begins with a discussion of the Swiss economic, demographic, and political context. An overview is then provided of the characteristics of the housing stock, with some reference to U.S. data for comparison purposes. The following section discusses housing finance in Switzerland, focusing first on taxes and subsidies, and then on mortgage financing. The subsequent section analyzes house prices, rents, and user costs. Housing tenure choice is considered in a final section.

### **The Swiss Context**

Switzerland is a small country of only 41,285 square kilometers located in the center of Europe.<sup>3</sup> Only 7% of the land is devoted to settlements and urban areas, with the other land uses being forests, woods, farmland, and alpine farmland (68%), lakes and watercourses (4%), and unproductive land (21%). The population of the country is approximately 7.7 million, which yields a population density of 190 inhabitants per square kilometer. Given that much of the land cannot be or is not used for residential purposes, the effective population density is substantially higher than the average figure. One-third of the Swiss population lives in the agglomerations of the five largest cities: Zurich (1.132 million), Geneva (0.504 million), Basel (0.490 million), Berne

(0.346 million), and Lausanne (0.317 million). Another third lives in the remaining urban areas, and a final third lives in the countryside.

The Swiss Confederation, made up of 26 cantons, has been in existence since 1848. The government is headed by the Federal Council, which is a collegial body consisting of seven ministers, one of whom serves as president on a rotating basis. They are elected by both chambers in parliament: the National Council (representing the people, 200 seats) and the Council of States (representing the cantons, 46 seats). The Swiss political system is also characterized by far-reaching democratic rights, including extensive use of initiatives and referendums. Overall, the Swiss system is one of compromise and of few social conflicts. Switzerland is not part of the European Union (EU) and has retained its currency (the Swiss franc, designated CHF).<sup>4</sup> Switzerland, however, benefits from special labor and trade agreements with the EU. The country only quite recently joined the United Nations.

The country is multi-cultural, with four national languages being spoken, as well as many foreign languages given that over 20% of the population is foreign. The official languages are German (64%), French (20%), Italian (6%), and Romansh (1%), with non-Swiss languages accounting for the balance (9%). The diversity of the country also emerges with respect to religions, with Roman Catholic and Protestant being the largest groups.

Switzerland enjoys a quite stable economy with low unemployment (2.6%) and low inflation (0.8% in 2007 and 2.4% in 2008). Interest rates are also low as compared to levels in other countries. At CHF 67,223, GDP per capita is 22% higher than the average of the EU countries. The median gross monthly wage is CHF 5,674. The economy is largely a service economy (73% of jobs), but industry (23%) is also important. Only 4% of the population is employed in agriculture. The main export goods are pharmaceuticals and chemicals, machinery and electronics, and watches and instruments. Given the importance of the banking sector, the country has been quite exposed to the current financial crisis.

## **Characteristics of the Housing Stock**

Swiss households largely rent their homes and live in apartments. This is reflected by the fact that as of 2000, only 23% of the housing stock was single-family houses and 7% was semi-detached houses, while the remaining 70% was multi-family and other forms of housing.<sup>5</sup> This is in sharp contrast with the U.S., where these figures were 60%, 4%, and 36%, respectively. A large proportion (28%) of the Swiss rental market is owned by institutional investors such as pension funds, insurance companies, real estate funds, and real estate companies (this compares to about 8% in the U.S.).<sup>6</sup> Within the institutional investor category, pension funds constitute the largest owner (with almost 10% of the rental units in the country). Another striking figure of the Swiss housing market is that close to 12% of housing units are second homes (the comparable figure for the U.S. is less than 4%).

Some 44% of units were constructed prior to 1961, 32% were built between 1961 and 1980, and 24% were constructed between 1981 and 2000. Comparable

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percentages for the U.S. are 35% prior to 1960, 32% between 1960 and 1979, and 33% between 1980 and early 2000. This reflects the relatively low rate of population growth in Switzerland (2.7% during the 1990s vs. 13.2% in the U.S.). The breakdown of the Swiss housing stock by size in 2000 was 7% for units with one room (studios), 14% with two rooms, 27% with three rooms, 27% with four rooms, and 25% with five rooms or more. Adjusting for the fact that, unlike the Swiss, the U.S. authorities count separate kitchens as rooms, the percentage of U.S. dwellings with 5 or more rooms (net of kitchens) was about 46% in 2000, or 21 percentage points higher than in Switzerland.

Switzerland has historically always had a low vacancy rate. Over the period 1980 to 2008, the rate peaked at 1.85% in 1998 and is currently less than 1%. There are some regional disparities in the vacancy rate, which ranges from 0.2% in the canton of Geneva to 2.2% in the canton of Glarus. The vacancy rate in the U.S. in 2000 was 6.1%.<sup>7</sup> Consistent with a trend that has been reported for many countries, the average household size has diminished from 2.93 in 1970 to 2.26 in 2000. The comparable figure for the U.S. in 2000 was slightly higher at 2.59.

## **Housing Finance**

Unlike countries such as the U.S., where the government has actively promoted home ownership, the Swiss authorities have maintained a more ambivalent attitude. The tax system, for instance, is not designed to encourage home ownership. Imputed rent (net of housing expenses) is taxed, as are housing wealth and some capital gains. In contrast, rental housing has been the subject of various subsidy programs by both federal and cantonal governments.

### *Taxes and Subsidies*

As is customary in many countries, an income tax, a property tax, and a capital gains tax are levied in Switzerland.<sup>8</sup> In addition, there is a wealth tax that is levied at the cantonal and communal levels only. Income taxes are federal, cantonal (provincial), and communal (municipal). Property taxes are cantonal or communal, but are not levied in all cantons. Capital gains taxes are cantonal and/or communal. Income and wealth taxes can in some cantons also include a church tax. The bulk of taxation is at the cantonal and local level, and there is much variation in taxation across cantons and communes. In addition to the taxes that are discussed in this section, a large fraction of closing costs comprises transfer taxes (Bureau d'Information Fiscale, 2003). The rate varies across cantons, but can be as high as 3% of the value of a property (in Basel Stadt or Geneva, for example).

Income taxes are the most important type of tax. Taxable income is calculated somewhat differently for federal and cantonal purposes (Bureau d'Information Fiscale, 2005). Communal taxes are calculated as a percentage of cantonal taxes. In all cantons and for federal tax purposes, the imputed rent of owner-occupied housing is included as part of income. The method used to estimate the imputed rent varies across cantons (Commission Intercantonale d'Information Fiscale, 1999). It is in most cases

calculated by comparison of market rents on rental properties, based on the house's characteristics, or as a percentage of the tax value of the property.

Generally speaking, imputed rent lies well below market rent. The federal tax authorities aim to capture an imputed rent that is no less than 70% of market rent. Market rent is generally considered to be 5% of the value of the property. The undervaluation of imputed rent has been estimated to range from about 30% to about 40% across the most populous cantons (Bourassa and Hoesli, 2010).

Housing expenses can generally be deducted from income for tax purposes. All cantons and the federal authorities allow mortgage interest to be deducted. In most cantons, maintenance costs, insurance premiums, property taxes, and condominium fees can also be deducted. Compared to the U.S., where mortgage interest payments and property taxes can be deducted with no taxation of imputed rent, income tax rules in Switzerland seem less favorable to home ownership. Nevertheless, in 1993, 59% of Swiss voters rejected by referendum a suggested change in the law which, among other things, would have significantly lowered the amount of imputed rent in the first 10 years after the purchase of a building and used a very conservative imputed rent calculation method thereafter. This outcome is probably not surprising, given that two-thirds of Swiss households are renters. There has also been discussion about removing all items related to home ownership (imputed rent and the mortgage interest and expense deductions) from the income tax system. As the imputed rent is on average slightly lower than the deductions, one would expect such a change to have a negative impact on the home ownership rate.

As for imputed rent, the tax value of a property for wealth taxation purposes is in almost all cases significantly below market value. Valuation methods vary substantially across cantons. Some cantons use sales of comparable properties to determine the tax value, while others use the income capitalization approach or a combination of the two methods. The depreciated cost method is also used in some cases.<sup>9</sup>

Property taxes are cantonal or communal, but do not exist in all cantons. In cantons where property taxes are communal, the canton grants the commune the option of levying a tax. For example, property taxes are cantonal in Geneva and communal in Berne, while Zurich does not have a property tax. In contrast to the U.S., where effective property taxes average about 1% of value, nominal property tax rates in Switzerland are in the 0.1%–0.15% range. The percentage is applied to the tax value which is, as discussed above, substantially less than market value in most cases, making the effective percentage very small.

There is also a capital gains tax (Commission Intercantonale d'Information Fiscale, 2000). Rates increase with the magnitude of the capital gains in some cantons. However, capital gains tax rates always bear an inverse relationship with the holding period. In Geneva, for instance, the rate is 50% if the property is sold within two years. There is no tax if the property is held for more than 25 years. In all cantons, the tax liability is postponed if the proceeds of a sale are used to purchase another property (with some restrictions).



The variations in tax rules also affect the taxation of rental housing. There is no tax benefit to renters at the federal level. However, a deduction for rent is permitted in cantons such as Basel Landschaft and Vaud. In Vaud, there is also a cantonal deduction for homeowners' imputed rent.

The development of rental properties has been promoted by government bodies in several ways. The aim is to facilitate construction of buildings whose units can be rented out at below-market rents. Two of these means, loans and operating subsidies, will be discussed briefly [see Cuennet, Favarger, and Thalmann (2002) for a discussion of other means]. A federal law aimed at encouraging housing construction and home ownership was enacted in 1974. The ambiguous stand of Swiss authorities with respect to home ownership emerges as the same law deals with promoting investment in both rental properties and home ownership.

One of the instruments included in this legislation provided for investors to be granted a loan from the federal authorities so that rents could be set below market during the initial 15 years of operation. The law also made it possible for landlords to receive subsidies to lower rents even further when units are occupied by very low income households. A new law was enacted in 2003, but the financial means for implementing it have so far largely been blocked by parliament.

Geneva and Vaud are examples of cantons that have well developed subsidy schemes. Tenants need to satisfy income requirements to occupy a subsidized apartment. Zurich has a cantonal scheme whereby rents can be reduced by the granting of loans to landlords at below market interest rates or even without interest. In Geneva and Vaud, the proportions of households benefiting from these subsidies are 20.9% and 8.6%, respectively, whereas the proportion is only 3.4% for Zurich.<sup>10</sup> Other cantons typically have lower subsidy rates.

Rental aid, in the form of subsidies paid directly to the tenant to cover part of the rent, is far less developed, although Geneva and Basel Stadt have cantonal programs. In the other cantons, the aid is limited to a few communes. Geneva stands out again with 3.4% of tenants benefiting from rental aid, sometimes in addition to occupying a subsidized unit. Many cantons do not provide any subsidy in this form.

Regulation of the rental housing sector and protection of tenants constitutes a popular topic among Swiss politicians. Werczberger (1997) suggests that rent controls may help to explain Switzerland's low ownership rate; however, his interpretation reflects a focus on the demand side of the rental market, not the supply side. In any case, rents can be adjusted only to reflect higher operating and maintenance costs, along with interest rates. The rent can be challenged if the increase exceeds any change in these items, but also if it is considered that rents offer an "abnormal" return on equity.

### *Mortgage Financing*

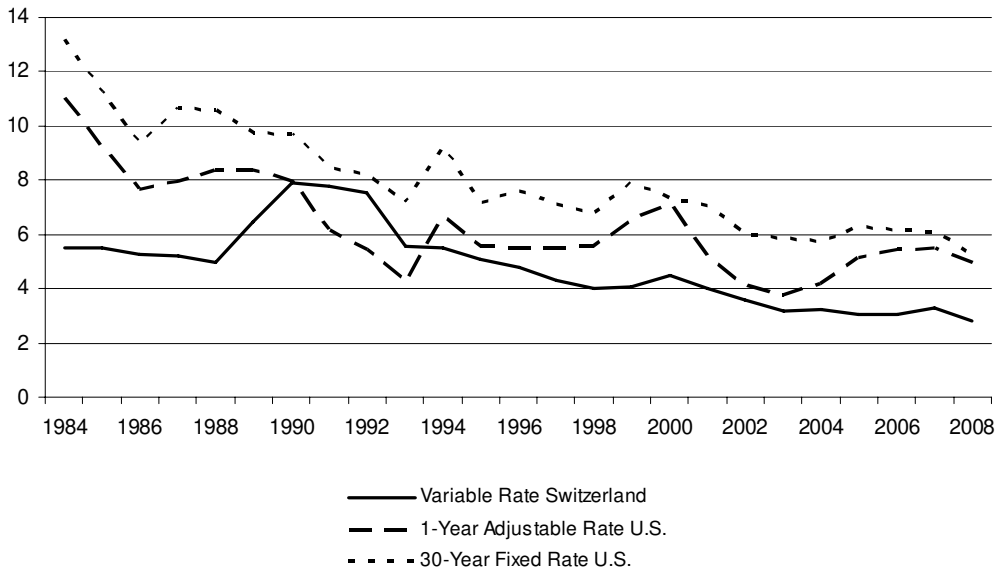
Mortgage underwriting criteria in Switzerland are quite stringent. Generally speaking, banks will not finance more than 80% of the value of a property. Prior to the real

estate crash of the early 1990s, which led to numerous foreclosures, the percentage was 90%. As closing costs constitute on average 4% of the value of a property, the wealth of a household must typically amount to a minimum of 24% of the value of the property. Banks in Switzerland make wide use of automated valuation models based on the hedonic method when granting a mortgage loan. Hence, when granting a loan banks have an informed view of the fair value of a property.

Mortgage financing is usually granted through a first mortgage covering up to 65% of the value of the property. First-time buyers with limited equity may also finance up to an additional 15% of the value with a second mortgage. As the default risk on the second mortgage is greater, the interest rate for second mortgages is typically 100 basis points higher than the rate on first mortgages. Banks usually do not require any amortization of the first mortgage. The second mortgage must be amortized over 15 years (implying amortization of 1% of the purchase price each year). Some banks require that the second mortgage be fully amortized by the time the borrower turns 60. The bulk of mortgages have a variable interest rate or a rate that is fixed for a limited number of years (typically 3 to 5 years).

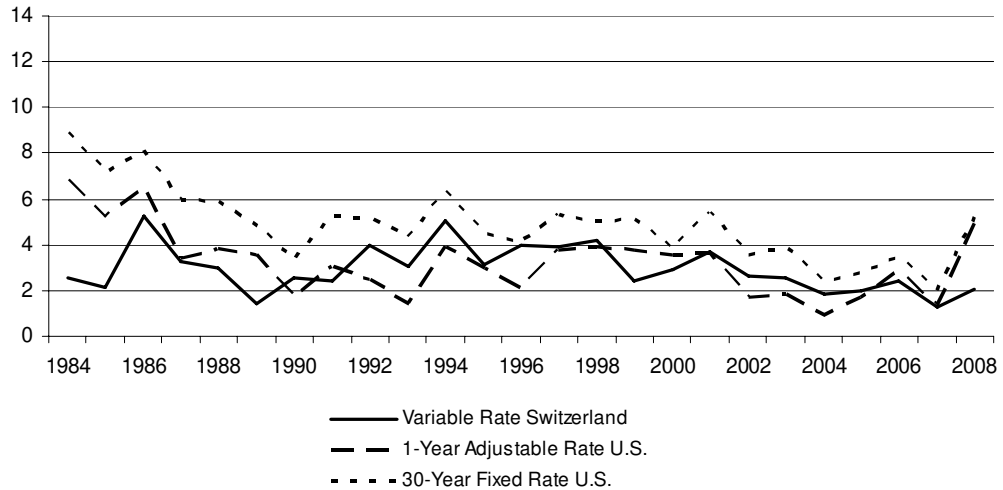
Exhibit 4 depicts nominal mortgage interest rates in Switzerland and the U.S. for 1984 through 2008. The rates for typical kinds of mortgages in each country are shown: variable rate for Switzerland and the 30-year fixed rate for the U.S. For comparison purposes, the 1-year adjustable rate for the U.S. is also included. Exhibit 5 shows the same series in real terms. Both nominal and real mortgage rates are trending downwards during the period shown. Nominal rates in Switzerland are lower than

**Exhibit 4**  
**Nominal Mortgage Interest Rates in Switzerland and the U.S., 1984–2008**



Sources: Swiss National Bank and Freddie Mac.

**Exhibit 5**  
**Real Mortgage Interest Rates in Switzerland and the U.S., 1984–2008**



Sources: Swiss National Bank (interest rates), Swiss Federal Statistical Office (inflation rates), Freddie Mac (interest rates), and U.S. Bureau of Labor Statistics (inflation rates).

comparable rates in the U.S., except for the early 1990s. In real terms, however, mortgage rates in the two countries are quite similar.

Another feature of the Swiss mortgage market is that loans can be amortized “indirectly” through a tax exempt retirement account. This retirement savings plan is called the *Troisième pilier* (“third pillar”) as it supplements retirement income from the state pension plan (*Premier pilier*) and the employer pension plan (*Deuxième pilier*). Rather than amortizing the loan, a borrower will pay the equivalent amount into the *Troisième pilier*, with the bank having a preferred claim on the accumulated savings. There is a cap, however, on the annual contribution into a *Troisième pilier*, which varies with employment status (self-employed or not).

Banks also use an income criterion to determine whether a household can afford to buy a property. The annual cost of owning a house must not exceed 33% of gross household income. The first component of the annual cost is the mortgage interest payment, which is typically calculated using an average of historical mortgage interest rates. The reference interest rate is in most cases 5%, although some banks will consider a rate of 5% for the first mortgage and a rate of 6% for the second mortgage. The annual cost also includes loan amortization and an allocation for expenses. The cost related to each of these two items is calculated at 1% of the value of the property, so 2% in total.

The wealth and income constraints restrict many households from purchasing a property. The 1974 federal law referred to above provided for some measures to alleviate these constraints. The law provided for loans that made it possible to reduce

the cost burden in the initial years of ownership. Also, the home buyer could apply for a federal guarantee that allowed a lower interest rate and/or an LTV ratio up to 90%. Thalmann (1999) reports that federal support helped fewer than 10% of buyers and that half of them would have purchased a property in any case. Given that the Swiss parliament has so far provided only limited funding to implement the new law enacted in 2003, these incentives are substantially diminished.

Another means for overcoming the wealth constraint is to use retirement funds to reach the 24% down payment. This is possible through the *Deuxième pilier* (since 1985) and the *Troisième pilier* (since 1990), provided that the monies are used to purchase a principal residence. These funds can also be used as collateral for a mortgage loan or to amortize an existing mortgage loan. The Office Fédéral du Logement (2004) estimates that one purchase out of five in 1998 was made using *Deuxième pilier* funds. While *Deuxième pilier* funds were mostly used by households in intermediate income brackets, *Troisième pilier* funds were used by high income households.

Contrary to what is the case in some other countries, such as France and Germany, preferred tax exempt savings accounts specifically for house purchase are usually not available in Switzerland. The Basel Landschaft and Geneva tax rules, however, provide for such savings accounts.

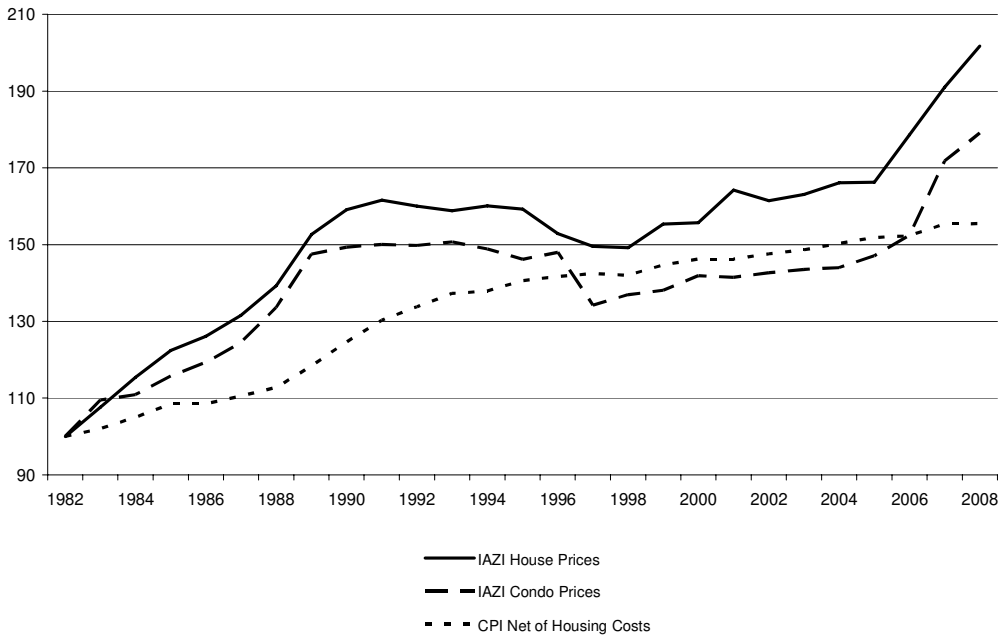
## House Prices, Rents, and User Costs

### *House Prices*

The hedonic approach is the primary method used in Switzerland to construct constant-quality housing indexes. IAZI, for instance, calculates price indexes for single-family houses and condominiums (Bourassa, Hoesli, Scognamiglio, and Sormani, 2008), as well as a combination of the two.<sup>11</sup> The IAZI indexes are based on transactions—covering about 60% of the national market (approximately 30,000 transactions annually)—as reported by mortgage lenders. A hedonic equation is estimated that contains variables for various property characteristics plus time dummy variables and a macro-locational variable that adjusts for land value differences across locations. The macro variable is an index constructed for each postal code (initially these were calculated for communes rather than for postal codes) using about 60 locational characteristics that collectively capture most of the geographical variation in values. These locational characteristics include variables from tax and income statistics, population density and distributions, infrastructure statistics, and local geographic and economic factors.

Exhibit 6 shows the house and condominium price indexes for the period from 1982 to 2008. Overall, housing prices rose at a faster rate than inflation, providing an average annual real capital gain of 1% for houses and 0.5% for condominiums. The time period can be divided into three segments with quite distinct market behaviors. Housing prices soared in the 1980s. This decade is viewed as having been quite speculative, with banks often granting mortgage loans to prospective buyers with a

**Exhibit 6**  
**House, Condominium, and Consumer Price Indexes, 1982–2008**

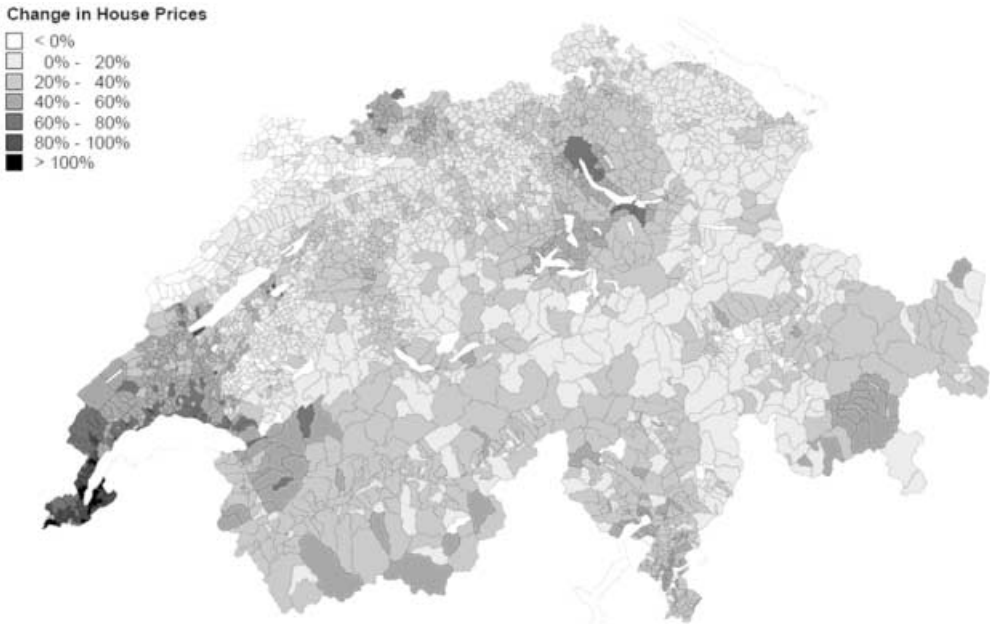


Sources: IAZI and Swiss Federal Statistical Office.

very little down payment requirement. Interest rates then climbed from 5% in 1988 to almost 8% in 1991, leading to sometimes severe price corrections and widespread foreclosures. From the peak of 1989 to the trough of 1997, real house prices went down by 19% and real condominium prices by 24%. Finally, the third period from 1997 to 2008 saw quite substantial price changes, with house and condominium prices increasing by 24% and 22%, respectively. These price increases have not occurred uniformly across the country, as shown in Exhibit 7. The larger price increases have primarily been in the more urban areas of the country (the Lake Geneva area, Zurich, and Basel), where nominal prices have more than doubled over the period.

Residential real estate prices in Switzerland are high relative to household incomes. The two reasons commonly given for this are the scarcity of land in general and of buildable land in particular, as well as high construction quality standards. Credit Suisse (2005), for instance, estimates that the ratio of average single-family house prices to average household income (averaged across all households) fluctuated between approximately 7 and 8.5 over the period 1985 to 2004, while the ratio was between 3.7 and 5 for condominiums. In comparison, the ratio of median value to median household income was about 3.4 in the U.S. in 2003 (U.S. Census Bureau, 2004).

### Exhibit 7 House Price Appreciation, 1998–2008



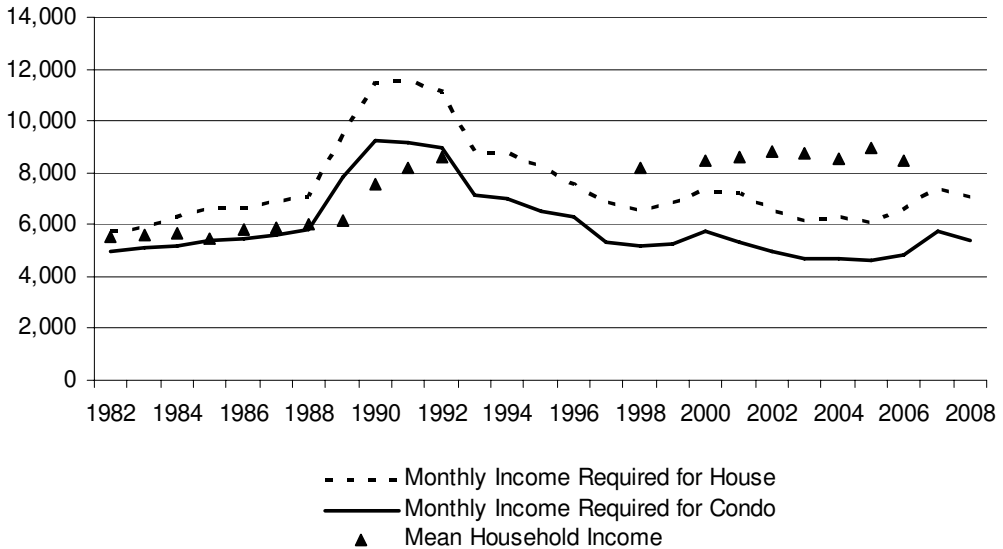
Source: IAZI.

To gauge house price affordability in Switzerland, Exhibit 8 depicts, for the period 1982 to 2008, the monthly household income required to purchase a single-family house or a condominium, as well as for some years the mean household income. The value of the median house (CHF 735,000) and condominium (CHF 560,000), respectively, in the IAZI database of transactions for 2008 is used to calculate the required income. The median house is 29 years old, in good condition and in a good location, and has 150 square meters of living area and a lot of 563 square meters, while the median condominium is five years old, in good condition and in a good location, and has 109 square meters of living area and a balcony of 18 square meters.

The value of the two dwellings is backtracked using the IAZI indexes for houses and condominiums, respectively. Banks typically lend 80% of a property's value. The annual debt service for each year is calculated based on 80% of the property's value and adding 2 percentage points (one for maintenance and one for amortization) to the mortgage interest rate for that year. The required household income is equal to three times the debt service amount as banks require that no more than one-third of income should be devoted to housing costs. These amounts are converted to monthly figures.

Although one has to be somewhat cautious with the household income figures as these are means rather than medians and also because the Swiss Federal Statistical Office has modified its survey procedure during the period, Exhibit 8 shows that housing

**Exhibit 8**  
**Affordability of Owner-Occupied Housing, 1982–2008**



Sources: IAZI (house prices), Swiss National Bank (interest rates), and Swiss Federal Statistical Office (household income).

was not very affordable during much of the 1980s and 1990s. This is especially true during the bubble of the early 1990s. The more recent period appears to be more favorable given the lower interest rates. When analyzing this exhibit, however, it is important to bear in mind that the 20% down payment also applies, in addition to the income constraint that is discussed here.

House price levels vary quite substantially across the country (Exhibit 9). Not surprisingly, urban areas emerge as having much higher price levels than the national average. Some of the fancy ski resorts (such as Zermatt, Saint Moritz, or Davos) also experience high house price levels. To highlight price differences across areas, but also the high level of prices in Switzerland, we note that the value of the standard house (as described above) is CHF 2,265,000 in Cologny (the fancy area of Geneva), while it is only CHF 505,000 in Vernayaz (in Valais).

### ***Housing Rents***

Median monthly rent in Switzerland in 2003 was CHF 1,008, ranging from CHF 1,155 in Zurich to CHF 912 in the Mittelland (Berne) area. In 2006, rents averaged about 19% of renters' household incomes. This compares with about 28% for the U.S. in 2003 (U.S. Census Bureau, 2004). Rents thus appear lower compared to income in Switzerland than in the U.S., while the opposite holds with respect to the relation between house prices and incomes.

### Exhibit 9 Distribution of House Prices in Switzerland, 2008

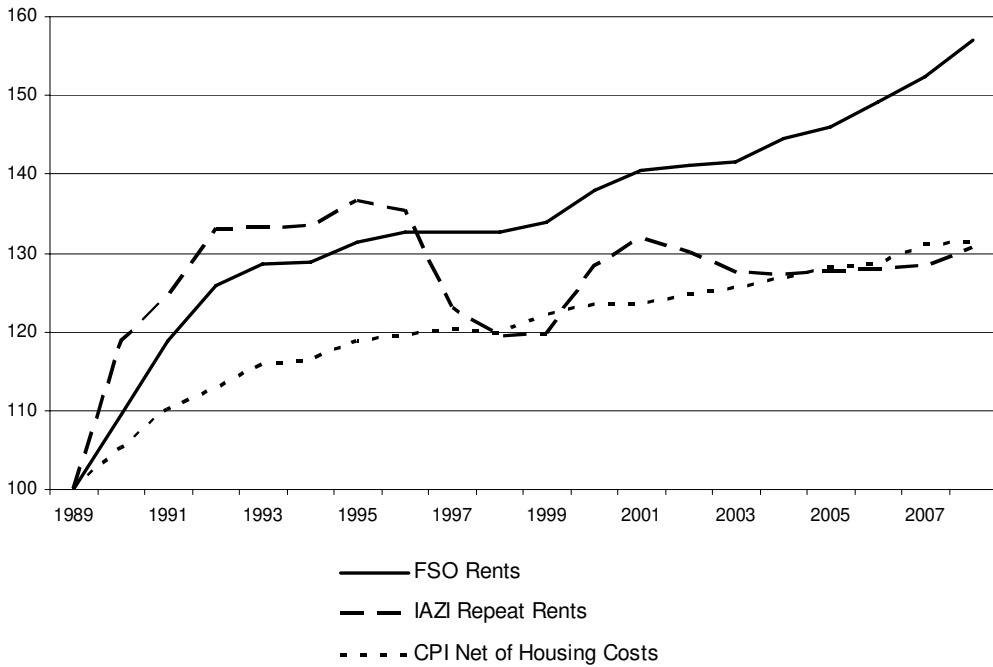


Source: IAZI.

Exhibit 10 shows the Swiss Federal Statistical Office rent index, the IAZI repeat rent index, and the CPI net of housing costs for 1989 to 2008. The FSO index is based on a survey of 5,000 households, with one-eighth of the sample renewed every quarter. The IAZI rent index uses the repeat measures method to construct a constant-quality rent index. The two rent indexes exhibit a similar pattern from 1989 to 1996, but the IAZI index reverts to levels that are quite close to those of the CPI from 1997. At least two reasons can be given for the different paths exhibited by the two indexes. First, the FSO index may not be truly constant-quality as part of the sample changes each quarter. This is not an issue per se as the index is used mainly as a component of the CPI and housing costs should reflect changes in the quality of the housing stock. Second, the ownership structure of apartments appearing in the FSO index is much more diverse than that of units included in the IAZI index. The latter index pertains only to units in buildings owned by institutional investors. Rents in Switzerland can be adjusted upwards following increases in mortgage interest rates, but landlords who do this may be required by their tenants to lower rents if interest rates fall. For this reason, institutional investors who were more prone to raise rents as interest rates rose in the early 1990s were also more likely to lower rents in response to declining interest rates in the mid-1990s. In the future, however, rents may be linked to the CPI rather than to interest rates.



**Exhibit 10**  
**Rent and Consumer Indexes, 1989–2008**



Source: Swiss Federal Statistical Office and IAZI.

### *User Costs and the Relative Cost of Owning and Renting*

User costs are the per period (usually annual) costs of investing in an asset. These can be expressed either as a cost per unit (in this case, Swiss franc) of investment or multiplied by the value of the asset to produce a rental equivalent value. The latter can be compared directly with the cost of renting an equivalent asset. In the case of housing, the user cost is a useful tool in helping to explain tenure choice, because it allows for calculation of the relative cost of owning and renting.

In the case of Switzerland, the annual user cost per Swiss franc of investment in owner-occupied housing,  $UC_{SW}$ , is (Bourassa and Hoesli, 2010):

$$\begin{aligned}
 UC_{SW} = & (1 - \tau_Y)(1 - v_{UA})i_E + (1 - \tau_Y)(v_{UA} + v_{IA})i_F \\
 & + (1 - \tau_Y)\mu + \tau_Y\eta + (1 - \phi)\tau_W - (1 - \tau_K)\pi
 \end{aligned} \quad (1)$$

where  $\tau_Y$  is the household's income tax rate, taking into account federal, cantonal, and communal rates;<sup>12</sup>  $i_E$  is the rate of return that could be earned on alternative investments of the equity;  $v_{UA}$  is the unamortized LTV ratio;<sup>13</sup>  $v_{IA}$  is the indirectly amortized LTV ratio;<sup>14</sup>  $i_F$  is the mortgage interest rate (which is assumed to be the same for first and second mortgages);  $\mu$  is housing costs other than mortgage interest,

which would include maintenance, property taxes, and insurance premiums;  $\eta$  is imputed rent as a fraction of house price;  $\phi$  is the proportion by which house value is underestimated for purposes of wealth or property taxation;  $\tau_W$  is the household's wealth tax rate;<sup>15</sup>  $\tau_K$  is the annualized capital gains tax rate; and  $\pi$  is the expected rate of capital gains in housing (net of depreciation).

The first term on the right-hand side of Equation 1 is the opportunity cost of the equity invested in the house, which is after-tax because the returns to alternative investments would generally be taxed. The second term is the after-tax (because it is deductible) cost of mortgage interest. Note that in the case of indirect amortization ( $v_{IA} > 0$ ), the household continues to pay interest on both the unamortized part of the mortgage and the indirectly amortized part. The third term refers to housing expenses, which are all assumed to be deductible. The fourth, fifth, and sixth terms in Equation 1 refer to the imputed rent tax, the wealth tax adjusted for the undervaluation of housing wealth, and the after-tax expected capital gains rate, respectively.

User costs in other countries tend to be somewhat simpler in form due to the fact that fewer taxes are imposed on owner-occupied housing. In the U.S., for example, imputed rent and housing wealth are not taxed, and capital gains are not taxed in most cases. Consequently, the user cost per U.S. dollar of investment is (Bourassa and Yin, 2008):

$$UC_{US} = (1 - \tau_Y)(1 - v)i_E + (1 - \tau_Y)(vi_F + \rho) + (\mu - \rho) - \pi, \quad (2)$$

where all of the terms are as defined for the Swiss user cost, except that there is no option for indirectly amortizing mortgage debt and hence only one LTV ratio,  $v$ , and  $\rho$  is the property tax rate. Note that mortgage interest and property taxes are the only housing expenses deductible in the U.S.<sup>16</sup>

Bourassa and Hoesli (2010) calculate average user costs for Swiss households of 0.046 across the five most populous cantons for 1998. Given an average price-to-rent ratio of 25.6 for a standardized house, this results in a relative cost of owning and renting of 1.18, suggesting that on average owning was more expensive than renting at that time, consistent with the low ownership rate. It is likely that this ratio has increased in the decade since 1998, as house and condominium prices have increased by an average of about 33%, while rents have increased by 18%. Although interest rates have dropped by over one percentage point, capital gains expectations have likely dropped as well (moving from about zero in 1998 to negative in late 2008).

## Housing Tenure

At less than 34% as of the 2000 census, Switzerland has a very low home ownership rate. Few countries have rates below 50% and most have rates above two-thirds. Switzerland consistently had a rate below 40% during the latter half of the twentieth century. The rate dropped somewhat between 1950 and 1970, and has been increasing very slowly since then. The rate in 2000 remained below the 1950 and 1960 rates. However, as of 2007, the rate had risen to 37.5%.

What accounts for the fact that a relatively wealthy country like Switzerland has such a low home ownership rate? A survey conducted in Switzerland in 1996 found that 83% of respondents would prefer to be home owners if there were no financial or other constraints (Thalmann and Favarger, 2002). Some 90% of respondents aged 30 to 49 preferred owning to renting. So the explanation for Switzerland's low ownership rate cannot be due to peculiar tastes that differentiate that country's population from the rest of the world.

Several possible explanations were raised in the preceding sections of this paper. First, house prices are relatively high compared to incomes. Second, owner-occupied homes appear to be heavily taxed in Switzerland relative to at least some other countries. Third, Swiss mortgage lenders have fairly rigorous down payment requirements.

At the same time as owning is fairly expensive, renting seems relatively attractive in Switzerland, at least from the point of view of tenants. Landlord-tenant laws provide substantial protections for renters and, in some cantons, rent is at least partially deductible from income for the purposes of the cantonal and communal (municipal) income taxes. A small percentage of renters also benefit from government subsidies. Generally, the system is designed to support long-term rental tenure. Of course, the greater protections for tenants than in some other countries mean that rental housing is less attractive for investors than it otherwise would be. This is reflected in quite low rental vacancy rates in Switzerland. The low risk on rental properties leads to a low cost of capital for such investments and partly explains the often high ratios of house prices to rents that are observed in Switzerland.

Bourassa and Hoesli (2010) estimate a tenure choice equation that allows them to analyze the impacts of a number of key variables on the ownership rate. They pay particular attention to the relative cost of owning and renting, which is a function of house prices, rents, and the user cost of owning. They also measure mortgage underwriting constraints and consider rent control and other policies affecting rental housing. By simulating a number of hypothetical changes to taxation and other policies, underwriting criteria, and price levels, they assess the importance of these variables in explaining the ownership rate. They conclude that high house prices—relative to household incomes and wealth and to rents—and the tax on imputed rent are the most important causes of Switzerland's low ownership rate.

## **Conclusion**

The purpose of this paper is to focus on the unusual aspects of the Swiss housing market, as well as the characteristics of the market that might be of interest to policy makers in other countries. Hence an attempt is made to explain why house prices have not exhibited the same boom and bust cycle in recent years as in some other countries and also why the homeownership rate remains low. Among other things, the study has focused on the lending practices of Swiss banks, which require a 20% down payment when purchasing a property. Also, hedonic models are widely used in Switzerland in assessing the value of the collateral, thus banks have much information

relative to the fair value of a property when granting a loan. The study also suggests that the low homeownership rate in Switzerland can largely be attributed to high house prices relative to rents and incomes, but also to the taxation of imputed rent.

## Endnotes

1. The U.S. homeownership data are from the U.S. Census Bureau's Current Population Survey/Housing Vacancy Survey (see <http://www.census.gov>).
2. The Informations- und Ausbildungszentrum für Immobilien AG (IAZI) is a property valuation firm located in Zurich. Among other things, IAZI produces hedonic house price indexes based on a majority of property transactions in Switzerland.
3. Much of the information in this section is from the Federal Statistical Office (2008).
4. CHF 1.00 was worth about USD 0.97 in early October 2009.
5. Much of the data in this section is from the 2000 Swiss Census and is available from the Swiss Federal Statistical Office (<http://www.bfs.admin.ch/>).
6. The U.S. data are from the U.S. Census Bureau's 1995 Property Owners and Managers Survey (<http://www.census.gov>).
7. Both the Swiss and the U.S. vacancy rate calculations exclude units intended for seasonal or occasional use.
8. For an overview of taxation in Switzerland, see Bureau d'Information Fiscale (2006a).
9. More details about the wealth tax are available in Bureau d'Information Fiscale (2006b).
10. A much larger percentage in Zurich benefits from an implied subsidy in the form of reduced land rents for cooperatives.
11. IAZI also constructs price and performance indexes for apartment buildings (Hoesli, 2008).
12. Ideally, this is a tenure choice income tax rate rather than a marginal rate. The tenure choice tax rate measures the average rate of tax savings achieved by owning relative to renting (Hendershott and Slemrod, 1983).
13. The LTV ratios should be calculated as the present-value equivalent of the expected declining LTV ratios over a holding period.
14. Households' *Troisième pilier* contributions are assumed to be independent of tenure choice, therefore indirect amortization does not affect the user cost of ownership except with respect to mortgage interest payments. In other words, the interest earned on those contributions does not reduce the user cost.
15. Analogous to the income tax rates, this is also an average rate rather than a marginal rate.
16. Equation 2 abstracts from the fact that some households cannot take advantage of the mortgage interest and property tax deductions because the sum of their itemized deductions does not exceed the standard deduction that is available to all taxpayers.

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