TRIGGERS FOR HOUSING DEVELOPMENT

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What leads to the development of residential construction projects? If the economic literature is to be believed, developers analyse market opportunities. However, it is difficult to assess those opportunities, for several reasons, e.g. long time horizon for developers who intend to remain owners of the completed dwellings and no coordination between developers. The latter problem concerns particularly developers who intend to sell their project upon completion (market developers). Is housing development really predominantly the result of market analysis? Micro analyses reveal that particular circumstances also play an important role: the availability of a particular piece of land, financing conditions, land regulation, etc. This article is designed to assess the shares of projects that are initiated on the basis of market analysis as opposed to other trigger factors. If that share is small, it is unlikely that house building can be explained or predicted with standard economic models of supply and demand. It also means that macroeconomic housing policy (lowering interest rates, subsidies designed to increase profitability, even rent deregulation) will not be very effective. A unique database was created by surveying 2,257 developers who built multi-unit residential buildings in the 1990s in Switzerland.

Keywords: housing development, housing policy, property development, Switzerland.

INTRODUCTION

The importance of understanding the drivers of housing supply is amply documented, e.g. for the UK by Ball (1996a and 1996b). What leads to the development of residential construction projects? If mainstream economic literature is to be believed, developers analyse market opportunities and maximise their profit intertemporally. When they see sufficient demand for new developments and expect to earn an adequate return on their investment, they purchase land and the other resources needed to make dwellings, produce them and put them on the market. I.e., supply responds to demand. Only the unavoidable delays between the observation of adequate market conditions and delivery of new dwellings can cause disequilibria on the housing market, which vanish as soon as developers have a chance to adjust their supply (e.g. Kenny 2003). For surveys of the housing supply literature, see DiPasquale (1999).

The surge of behavioural economics is renewing the interest in economic decision making. Scanlon and Whitehead (2006: 25) recently did so for the private landlords in the UK and concluded that 'individual private landlords do generally respond to economic stimuli in rational ways'. However, they found ample evidence of short-sightedness, asymmetry in responses to changing opportunity costs, insufficient consideration of opportunity costs, and liquidity constraints. De Bruin and Flint-Hartle's (2003) tested whether a bounded-rationality model better describes the investment choices of individual landlords in New Zealand. They found that most had bought property for the capital gains is promised, but they had done so at a time when inflation was clearly under control, which suggests backward-looking behaviour. They also find evidence of bounded rationality in the fact that investors' portfolios are very little diversified.

Indeed, the simple profit-maximizing model of housing supply can be challenged on several grounds. It is difficult for developers to be aware of what their competitors are preparing, so they might answer to the same perceived demand with excess supply. On the other hand, not all developers need to make their profit from the immediate sale of their product. Many have the option and choose to remain owners of the new buildings and rent them, so that the return on the investment can be earned gradually over time. This complicates considerably the developer’s calculation of profit opportunities. It also makes it very difficult for outside observers to test whether developers are really performing thorough project analysis before launching a development. Expectations ought to play a much more important role than current market conditions, and expectations are notoriously hard to observe. Scanlon and Whitehead (2006) observed that fact when testing the rationality of private landlords in the UK. They noted that the same market signal may just as well justify an increase in housing investment as a decrease. Consider an increase in property prices. It implies smaller rental return and greater risk. It can even be taken as a signal of future price corrections (mean reversion). On the other hand, property price increases signal rising housing demand. It takes a thorough analysis of price changes to predict their consequences for future profitability and even experts disagree on them.

Experts even disagree on how the profitability of housing investment ought to be assessed. Some ignore its capital gains component (Skifter Andersen 1998). Some consider that landlords are irrational if they do not leverage their property to take advantage of low mortgage interest rate (Ball 2004) while others might consider that the risks and unattractive investment alternatives for the freed equity justify full ownership for many landlords. Even decreasing stock market prices need not command a portfolio reallocation in favour of rental property, as many financial advisors recommend targeting fixed portfolio shares, which implies buying more shares when stock markets slump.

In the face of difficult project analysis, many developers might use shortcuts and place their faith in the long life expectancy of their products, which can generate adequate returns when given sufficient time. They might launch developments when local circumstances are favourable (e.g., a neighbour develops her property) or some other fortuitous event occurs (e.g., the developer is proposed a plot of land). On the other hand, partial negative signals such as rising land or construction prices, a slack in economic growth or a spike in vacancies may discourage them from developments that thorough analysis might still show to be profitable.

This article is designed to assess the shares of projects that are initiated on the basis of market analysis as opposed to other trigger factors. If that share is small, it is unlikely that housebuilding can be explained or predicted with standard economic models of supply and demand. It also means that macroeconomic housing policy (lowering interest rates, subsidies designed to increase profitability, even rent deregulation) will not be very effective.

It seems that the only way to learn about the triggers of housing developments, in particular the importance of market conditions and housing needs, is to ask developers. This is what this paper does. It draws from a survey that is part of a wider research project designed for understanding why housing construction had declined so much in the second half of the 1990s in Switzerland in spite of apparently quite favourable conditions. The results of that project were published as Schüssler and Thalmann (2005).

CONTEXT OF THIS RESEARCH

In Switzerland, rental housing accounts for about one half of all new developments and it still houses about two thirds of all households.[1] Moreover, it houses the households that have least housing choices and tend to suffer most from housing shortage. The Swiss case study is also interesting for the country's long history of housing shortage. Observers consider that the market is balanced when the national vacancy rate reaches a mere 1.5%, a rate that was only exceeded in four of the last thirty years. The question of why there is not more housing development and what triggers development is clearly warranted on such a market.

The Swiss market is also characterised by its high fragmentation. 57% of all rental dwellings belong to private individuals (2000 Census).[2] The rest belongs to a myriad of small pension funds, small cooperatives, local authorities and very few large institutional investors. There are over 4,000 construction firms in main construction (not counting painters, asf), so that the average construction volume per firm is less than a million euros and the average personnel is around 20. Finally, over 40% of all dwellings are developed by individuals and a third by the myriad construction firms and real estate companies. Thus, developers are just as fragmented as the rest of the market.

We shall see that it is necessary to distinguish between market developers, who build with a view to selling the completed building to final investors (who include users in condominium ownership), and final investors who build themselves. The difference is that market developers need to anticipate investors' desire to invest. There is an intermediate solution, whereby the market developer develops a project at the request of an investor. This last solution is rather uncommon in Switzerland.

Developers are not registered as such. They are construction firms, real estate companies, architects, and many individuals (Table 1). To find them, we used the systematic record of construction permits compiled by the periodical *Baublatt/Batimag*. The purpose of that publication is to allow small contractors to learn about building projects and offer their services. We restricted our analysis to buildings containing two dwellings or more in order to eliminate all the single-family developers, who are generally the occupants themselves in Switzerland. In addition, we focused on building permits delivered in two specific periods: 1994-1996 and 1999-2001. The first was a period of relatively high housing construction and the second was a trough.

[1] More about the Swiss housing market and housing policy can be learned from Kemeny 1995, Lawrence 1996, Werczberger 1997, Thalmann 1997, Hauri, Steiner and Vinzens 2006, and the annual RICS European Housing Review.
[2] This little known fact is not that unusual: a majority of rental dwellings also belong to private individuals in the UK, Denmark, USA and Australia Scanlon and Whitehead 2006.

Table 1: Shares of different types of developers in population and sample

	All new dwellings	New dwellings in multi-family units	2004 survey
Public sector	1.9	2.7	1.2
Institutional investors	4.7	6.7	6.1
Construction firms and real estate companies	33.8	37.3	27.1
Cooperatives	3.3	4.4	7.3
Private persons	41.7	32.0	39.1
Other developers	14.5	16.8	19.1

Notes: Data from Federal statistical office in first two columns; averages over 1994-96 and 1999-01. The total of each column is 100%.

We administered in the summer of 2004 a survey to one sixth of all 8,695 developers who had obtained exactly one building permit for a building with at least two dwellings between 1994 and 1996 or between 1999 and 2001 ('one-shot developers') and to all 808 developers who had realized more than one project in that period ('repeat developers'). That makes 2,257 addressees in a population of 9,503. The survey had about 60 questions designed to identify the main determinants and triggers of housebuilding and the hurdles and barriers developers face. The results presented here are based on the returns from 316 one-shot builders and 200 repeat builders. They represent 23% of the initial sample or 5.4% of the population. Based on the number of dwellings the respondents declared they had built in the two periods, they also represent about 22% of all dwellings built in multi-family units.

The relatively low rate of return on our survey can be explained by several factors. Many developers no longer existed as an organisation or at the old address in 2004, particularly those who had built in the mid-1990s. In addition, addressees who had obtained a building permit for a transformation or renovation were asked not to respond, and that concerns about one third of all building permits. Nevertheless, our final sample is quite representative of the population of developers (Table 1). Only private persons are somewhat over-represented and construction firms and real estate companies under-represented in our survey.

THE MAIN CATEGORIES OF DEVELOPERS

For understanding development triggers, it is essential to distinguish between short- and long-term oriented developers:

A. Developers who seek to sell the completed dwellings or building with a profit; we shall call them 'market developers'.

B. Developers who build with a view to keeping ownership of the completed building; we shall call them 'investor developers'.

C. Developers who sometimes sell the completed dwellings or building and sometimes keep the completed building; we shall call them 'market/investor developers'.

Table 2 indicates the proportions of each category of developer in the two periods of analysis. The strong increase in strata ownership development accounts for the progression of the share of market developers: in 1999-01, almost 60% of the projects were built by market developers who sold the flats to individual buyers. Those developers are classified as 'market developers' or 'market/investor developers' depending on whether they also built dwellings that they did not sell.

Table 2: Importance of the categories of developers in 1994-6 and 1999-01, based on 2004 survey

	Mid 1990s	**End 1990s**
Market developers	22	43
Market/investor developers	30	33
Investor developers	48	24

Notes: Answers of 449 developers. The total of each column is 100%.

Finer distinctions can be made within each category to understand their mode of operation and the triggers that lead them to initiate a housing development. We shall consider in turn market developers and investor developers. The answers of the market/investor developers will be used in both sub-samples.

THE TRIGGERS OF DEVELOPMENT BY MARKET DEVELOPERS

A central distinguishing characteristic among market developers is the frequency with which they launch developments. Those who build repeatedly are assuredly more 'professional' than those who build only once in their lifetime.[3] Table 3 shows that there are almost as many market developers who build regularly as market developers who build rarely. In what follows, we shall call the former 'frequent market developers' and the latter 'occasional market developers'.

Table 3: Shares of market developers by frequency of developments, 2004 survey

They develop multi-family buildings…	
… frequently, always for the same investor or group of investors	15
… frequently, for different investors	38
… rarely	35
… never except that unique time	12

Notes: Answers of 323 market or market/investor developers. The total of the column is 100%.

The types of organisations that act as market developers are described in **Table 4**. It is interesting to note the high proportion of individuals, particularly among the occasional market developers. Nevertheless, construction firms and architects dominate the market, particularly among the frequent market developers. This suggests that market developers often launch a development for the work it provides them, an assumption that was confirmed when we asked them for the main triggers that made them launch a housing development project (**Table 5**). The somewhat fortuitous opportunity created when someone proposes a plot of land or a construction project comes a close second. Only about one fourth of the market developers indicated that they launched developments on the basis of their analysis of the market. This is not to say that the other market developers do not analyse the market prior to their developments. It means that very few market developers are actively monitoring the market for business opportunities and therefore likely to respond to housing demand.

[3] Scanlon and Whitehead (2006) made a similar distinction between 'professional' and 'non-professional' landlords. The former own at least three properties; their letting income is at least half of their total income; and they declare financial, business or pension motives for being a landlord. Thus defined, Professionals make up 15% of their sample of buy-to-let customers with outstanding mortgage debt in the UK.

Table 4: Types of organisations that act as market developers, 2004 survey

	Occasional market developers	Frequent market developers
Individuals	30.4	14.0
Unshared inheritances	6.3	–
General contractors	14.3	36.7
Other construction firms	10.7	7.3
Architects	20.5	25.3
Real estate firms	7.1	10.7
Cooperatives	4.5	3.3
Others	6.2	2.7

Notes: Answers of 262 market or market/investor developers. The total of each column is 100%.

Table 5: Triggers and conditions for launching a housing development project, 2004 survey

Motives that usually lead market developers to launch a housing development project	Occasional market developers	Frequent market developers
The need to occupy their business capacities	44	70
A piece of land or construction project is proposed	46	62
Their own market analysis	14	30
The demand of a final investor	5	23
Other reasons	25	9

Notes: Answers of 275 market or market/investor developers. Several answers allowed. Column percentages.

We asked market developers how they estimated the profitability of a development project. Their answers are represented in **Table 6**. Three fourth indicated that they systematically analyse the project and the local market. That leaves one fourth who do not, particularly among occasional market developers. Half of the market developers also indicated that they refer to the recent evolution of property prices, which hints at static expectations. Very few refer to the evolution of interest rates and rents, which are important determinants of property prices in theory. Even fewer refer to outside experts.

Table 6: Market developers' references for estimating the profitability of a project, based on 2004 survey

	Occasional market developers	Frequent market developers
A systematic project and local market analysis	65	81
The recent evolution of property prices	44	51
The recent evolutions of interest rates	16	19
Consulting experts	16	6
The recent evolution of rents	5	18
Other references	8	10

Notes: Answers of 272 market or market/investor developers. Several answers allowed. Column percentages.

This analysis has shown that market development is dominated by construction and construction-related firms. As a consequence, the main motive for launching developments is the need to keep business resources occupied. Very few projects are launched by market developers on the basis of a market analysis. This does not mean that market conditions play no role. Indeed, even developers who seek the revenue more than the profit perform a systematic project and market analysis and generally require that a minimum share of the project be pre-sold and the financing almost fully assured before they launch a development project. Still, the pressure to generate work, particularly when investors may not hand out too much of it at a time of low construction, might induce construction firms to shortcut some of the market analysis. At the end of the 1990s, there was clearly too little construction by investors in the face of housing demand in Switzerland, as evidenced by a very low vacancy rate. Market developers increasingly became the main suppliers of new housing, in the form of strata ownership. They thus helped strata ownership's share in housing tenure boom from a very low level (from 4.4% in 1990 to 7.9% in 2000).

Our survey also showed that many market developers are individuals who may develop just one project in their lifetime, typically in response to a fortuitous opportunity, such as the inheritance of a piece of land. It is difficult to assess the importance of that form of housing supply, but since occasional market developers represent almost one half of all market developers and since the opportunity of a piece of land or construction project proposed was cited as a trigger by about one half of all market developers, it is not implausible that about one half of all market developments have that fortuitous character. That creates a large stochastic component in housing supply.

In a nutshell, about half of the market development projects appear fortuitous and only half are based on market analysis. In addition, that market analysis is often tainted by the market developers' wish or need to occupy production capacities. Nevertheless, market developers slowed down the decline in housing construction in the second half of the 1990s, when investors appeared to quit that activity. Let us now turn to the developers who build a property to hold it themselves and try to understand what drives their development decisions.

THE TRIGGERS OF DEVELOPMENT BY INVESTOR DEVELOPERS

All investor developers develop projects to let the apartments, but they can do so with quite different objectives:

A. Developers who seek a profitable investment; we shall call them 'profit driven'.

B. Developers who pursue social goals with their rental dwellings and seek to address housing needs; we shall call them 'social'.

C. Developers who are foremost interested in the work provided by development to occupy their idle capacities; we shall refer to them as 'revenue driven'.

It is quite likely that many in the latter category would have preferred to sell the building like market developers but could not find a buyer at acceptable conditions. The survey shows that all of them are also market developers (they are all 'market/investor developers' in our terminology, see **Table 7**). Very few social developers act occasionally as market developers. On the other hand, ¾ of all pure investor developers are profit driven as well as ¼ of all market/investor developers. Counted over all investor developers, profit-driven developers are the largest category, about one half, followed by a third who are mainly revenue driven and 16% social developers. The small share of the latter is no surprise considering that only some 14% of all rental dwellings belong to non-profit landlords (Kemeny, Kersloot and Thalmann, 2005).

Table 7: Categories of investor developers, based on 2004 survey

	Pure investor developers	Market/investor developers
Profit driven	73	29
Social	27	6
Revenue driven	0	65

Notes: Answers of 149 pure investor developers and 141 market/investor developers. The total of each column is 100%.

The types of organisations that develop housing to keep it themselves are closely related to their main motivation (**Table 8**). Thus, insurance companies and pension funds are always profit driven. Foundations and associations, public bodies and cooperatives almost always declared themselves social. Construction firms and architects nearly always build for the revenue. They constitute the lion's share of revenue-driven developers, just as they do among the market developers. It is interesting to note again the importance of individuals, who are the largest category of profit-driven developers and who are also well represented among the other categories of investor developers. Indeed, 57.4% of all rental dwellings in Switzerland belong to individuals (2000 Census).

Table 8: Types of organisations that act as investor developers, 2004 survey

	Profit driven	Social	Revenue driven
Individuals	55.7	20.8	35.1
Real estate firms	6.7	–	7.4
Cooperatives	2.7	50.0	1.1
Insurance companies	4.7	–	–
Pension funds	12.1	–	–
Foundations	–	4.2	–
Public bodies	–	12.5	–
Construction firms	8.1	2.1	26.6
Architects	8.7	2.1	26.6
Others	1.3	8.3	3.2

Notes: Answers of 149 profit-driven, 48 social and 94 revenue-driven developers. The total of each column is 100%.

What triggers housing developments by investor developers? To answer this question, we shall distinguish the categories of investor developers, even though there are many commonalities (**Table 9**). An important trigger for all is the arrival of interesting projects: more than ¼ of all investor developers cited this as a trigger. Almost as important is the occurrence of favourable circumstances for developing a piece of land the developer already owned. Thus, we find the same fortuitous character of many housing developments as among the market developers. It is naturally particularly important for investor developers who develop projects only occasionally.

Nevertheless, about one half of the profit-driven developers actively seek investment projects in multi-family rental housing, comparing them with other investment options or not. Almost 30% of the social developers also seek new projects actively. Almost as many of them indicated that it was their job to build, which can be interpreted as dedication to address recurrent housing needs.

Table 9: Triggers of housing developments by investor developers, 2004 survey

	Profit driven	Social	Revenue driven
Build on a piece of land they own when circumstances are favourable	31	29	19
Invest in multifamily buildings when interesting projects present themselves	29	27	27
Continuously seek multifamily projects but also consider other investments	21	0	4
Invest most of their capital in multifamily buildings and actively seek projects	20	29	11
It is their job to build multifamily buildings	12	20	67
Other triggers	1	7	0

Notes: Answers of 138 profit-driven, 41 social and 73 revenue-driven developers. Several answers were allowed but very few gave more than one. Column percentages.

The survey allows for looking more closely at the motivations of each category of investor developers. Profit-driven developers need to assess the profitability of a project, which is made more difficult by the typically very long holding period. Two thirds of the profit-driven developers in the survey indicated that they assess a project themselves (**Table 10**). One fourth relies on their experience and about as many get outside advice. Almost 90% assess a project themselves when we consider only profit-driven developers who built more than 100 dwellings over the last ten years. Indeed, it is particularly the occasional profit-driven developers who call upon the advice of third parties, typically their banker, or are content with basic evaluation.

Table 10: How profit-driven developers assess a development project, based on 2004 survey

Overall assessment mode	All profit-driven developers	Large profit-driven developers
Performs a financial analysis	66	89
Relies on his/her experience	27	11
Gets outside advice	23	4
Proceeds otherwise	6	4
Specific objective		
The safety of a long-term asset	55	43
The profitability of the investment	33	54
A steady flow of rental income	12	4

Notes: Answers of 144 profit-driven developers, of whom 28 had built 100 or more dwellings over the last 10 years. Several answers allowed. Column percentages.

When they assess a housing development project, most profit-driven developers seek the safety of a long-term real asset (**Table 10**). This corresponds to De Bruin and Flint-Hartle's (2003: 275) finding that 'wealth accumulation and long-term capital gain was the most important consideration in the property investment decision' for the New Zealand real-estate investors they surveyed 1999. It is only among the large profit-driven developers in our sample that a majority seek the investment's performance. A steady flow of rental income is particularly interesting for pension funds and pensioners. Landlords may also need it to cover the interest and amortization of their mortgage, which is often very high in Switzerland in international comparison.[4]

In summary, a picture emerges that is quite similar to that of the market developers. Two thirds of the profit-driven developers are sophisticated in the sense that they

[4] Mortgage debt owed by private households residing in Switzerland is 75% of GDP in 1999. Typical financing of housing property is 80% mortgage debt and 20% equity. The mortgage debt is amortized to 60 or 65% of the property's purchase price over 10 to 20 years and generally no further.

analyse more or less thoroughly the potentials of a development project while one third are happy with plain calculations or experience values, or, in the case of market developers, with the preliminary sale on blueprints of at least one half of the dwellings.

De Bruin and Flint-Hartle's (2003) saw evidence of investors' bounded rationality in the fact that their portfolios were very little diversified. Indeed, 77% of the landlords they had surveyed indicated that residential rental property was the most important investment in their portfolio; 22% held only property. In our survey, only profit-driven developers who were in the database with several building permits, i.e. relatively large developers, were asked about the composition of their portfolio. For half of them, rental housing property accounted for 60% and more of their portfolios. This is clearly much more than portfolio diversification would warrant. Hoesli (1993) shows that the optimal risk-return performance is obtained in Switzerland with a portfolio that includes between 20 and 30% of real estate. There is not even a statistical argument for increasing that share for inflation hedging purposes (Hamelink and Hoesli 1996).

A project's financial performance is, naturally, less important for social or revenue-driven developers. Still, two thirds of the latter require a minimum return, typically 5% or 6%, while the other third demand at least that their costs be covered (**Table 11**). Social developers are split between cost coverage and applying the authorities' regulation (e.g. for subsidized housing), which generally allows for a small return on equity.

Table 11: Profitability requirements for social or revenue-driven developers, based on 2004 survey

	Social	**Revenue driven**
Does not need profitability, just cost coverage	44	36
Applies the criteria of the authorities	44	2
The return must not lie below some rate	18	63
No consideration whatsoever of profitability	4	0
Other profitability targets	4	6

Notes: Answers of 45 social and 84 revenue-driven developers. Several answers allowed. Column percentages.

In summary, about one half of the investor developers are profit driven, mainly individuals and pension funds, one third are revenue driven, mainly construction related firms but also individuals, and one sixth are social, mainly cooperatives and other non-profit developers. One half of the investor developers initiate a housing development when an interesting project is proposed or the circumstances are favourable for a piece of land they own; the other half seek projects for the investment opportunity, for the revenue or to address housing needs. Profit-driven developers generally perform a more or less sophisticated financial analysis of a project but less than one half seek profitability first. The safety of a long-lived real asset is more important for small profit-driven developers. Thus, of 100 profit-driven developers, only 13 grade a project relative to their portfolio; 74 require a minimum rate of return but for only 20 is profitability compared to other investments their prime interest. Two thirds of revenue-driven developers also require some minimum rate of return, whereas social developers are generally happy with cost coverage.

CONCLUSIONS

We probed developers' sophistication in computing the performance of residential investments: Are they forward-looking? Do they weigh risks against returns? Do they assess risks within their portfolios? We probed social developers about the attention they pay to profitability. We also surveyed developers about the intensity with which they seek new projects and the frequency with which they develop projects.

The picture that emerges is that of a heterogeneous population of housing developers. This resembles Beer's (1999: 260) finding from his study of private-sector landlords in Australia, that 'individuals invest in rental housing for disparate reasons […] there is therefore a degree of unpredictability within the private rental market, not all investors are likely to respond quickly to changes in investment regimes or market conditions and this is particularly true for those on lower incomes'.

In our survey, the population of housing developers ranges from individuals who develop a project once in their lifetime to exploit the potential of a piece of land they may have inherited to quite sophisticated investors who are continuously looking for opportunities to complete their portfolio. The occasional developers are about as important on the market as the repeat developers and private persons supply almost as many dwellings in multi-family units as construction firms and real estate companies together. In that configuration, it is not surprising that every second housing development was initiated for fortuitous reasons. Of course, it is never quite fortuitous that a project is proposed to a developer or that the circumstances become favourable for a piece of land, but the model of the professional developer who continuously scans the market and attempts to catch every business opportunity describes only a small part of the market.

At the end of their survey of UK landlords, Scanlon and Whitehead (2006: 23) found: 'Given landlords' general insensitivity to developments in other markets, and the transactions costs problems, it is perhaps more useful to think of landlords as small businesspeople rather than straightforward investors.' This is even more true of housing developers as so many of them indicated as their main motive for housing developments the need to occupy their idle resources. This was less important in the mid 1990s, when housing construction peaked, than in the late 1990s, when it was in a trough. Overall, about one half of the dwellings built for sale were built by construction-related firms that primarily sought the revenue. So were many rental dwellings that remained the ownership of their developers. In earlier periods and other sectors (typically the office market), that development motive has led to overproduction and a protracted excess of vacant surfaces. The Swiss housing market of the late 1990s would have dried up even more if it were not for the resilience of the construction firms.

Non-profit developers, who are commonly expected to buffer the withdrawal of traditional developers despite housing shortage, account for only one sixth of the market. The near full elimination of public housing aid at the turn of the century (Kemeny, Kersloot and Thalmann, 2005) certainly did not help that category of developers.

With much fewer than half of the housing development projects initiated on the basis of an analysis of housing demand and predicted profitability, it seems preposterous to expect that housing supply reacts to market signals and incentives. It still does because the cues many developers use in place of a thorough feasibility study are not insensitive to market conditions. Thus, when half of the market developers require the sale of a minimum share of the dwellings before they launch a project, that condition is of course more easily satisfied when housing demand is strong. Equally, when half of the investor developers primarily seek the safety of a long-lived asset, they are certainly not blind to the vacancy rate, which is a strong signal of that safety. On the other hand, they may be quite sensitive to reforms that threaten that safety, such as a revision of rent regulation or land planning.

With such a heterogeneous population of housing developers, it is difficult to craft a policy that could help Switzerland retrieve more 'natural' housing vacancy rates than the current 1 percent. Avoiding unnecessary uncertainty, e.g. over rent regulation, is clearly a part of it. Acknowledging the large contribution of individuals is another one.

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