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Resilient housing markets in Europe
What happened in North-Western European countries?

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Introduction

In the context of generalized world-wide exuberance of housing markets, house prices trajectories and market dynamics before and after the great financial crisis have been highly different among European countries. To a certain extent, each country was involved in a specific "story", one could consider as a unique result of former developments and structural characteristics of national housing and finance systems. Common tendencies are nonetheless observable. So that, if a unique model of housing market developments is clearly out of reach, some kind of rationale can and should be identified.

Starting from the view that there are at least 3 distinctive "stories" to be told for in European housing markets, and that France and Sweden belong to the same "story", we shall investigate in more details what are the components of the "Nordic model" which, beyond those two countries, incorporate the whole of North-Western Europe.

Finally, section 3 addresses the analytical stake offered by the Northern resilient price regime. The continuous decline of interest rates, jointly with the increased maturity of loans and the liberalization of residential loans markets, with the consequent rise of mortgage debt, are certainly key factors to explain the upsurge of house prices. But those financial factors hardly give account of the acceleration of house price rises after 2003. The shortage argument is still less convincing.

What is suggested is that the "northern" price regime comes from structural specifics of housing markets, typical of mature urban housing systems, which do not fit with usual stories about housing markets dynamics, and clearly not with standard supply and demand interactions as stated in traditional equilibrium theories. An alternative way is suggested, consisting in exploring a "cumulative disequilibrium" hypothesis, within the framework of stock-flow-consistent (SFC) modelling.

In such a perspective, the path of prices moves is given by self-fulfilling estimates of future valuations of residential spaces, governed by locational behaviors of households. Any displacement in spatial preferences and/or socio-demographic structures can initiate sectorial mismatches between supply and demand, eventually degenerating in a general inflating disequilibrium, and break the link between income and savings flows and wealth accumulation in real estate.

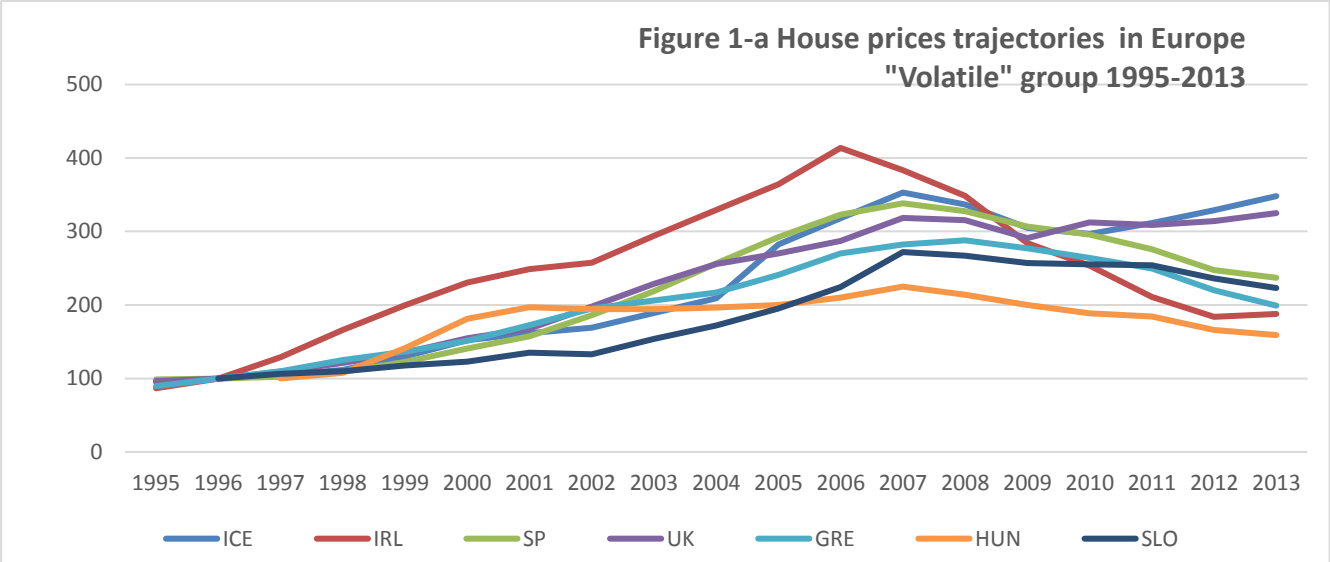
1. Housing market regimes in Europe

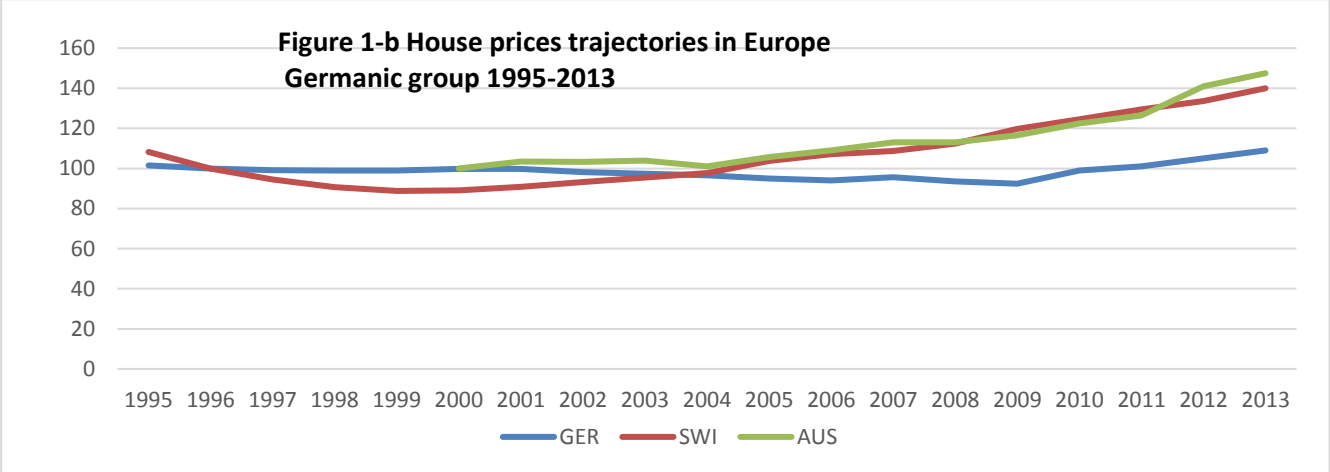
Starting from the observation that the most stable housing markets have been those where the proportion of homeowners is less (namely in Germany, Switzerland and urban Austria, especially Vienna), while the highest volatility was observed where the rental market is strongly residualized (like in Spain, Iceland and some East European countries), some kind of relationship could be assumed between tenures and market volatility or exuberance. But such a relationship doesn't stand for a large range of countries, especially France and all Nordic countries, where housing markets have been highly exuberant despite the relative weight of the rental sector, including a large social rental stock, and no more for some Mediterranean countries (Italy, Malta, Portugal), where the proportion of homeowners is not significantly smaller than in Ireland or Spain, and housing markets much more stable.

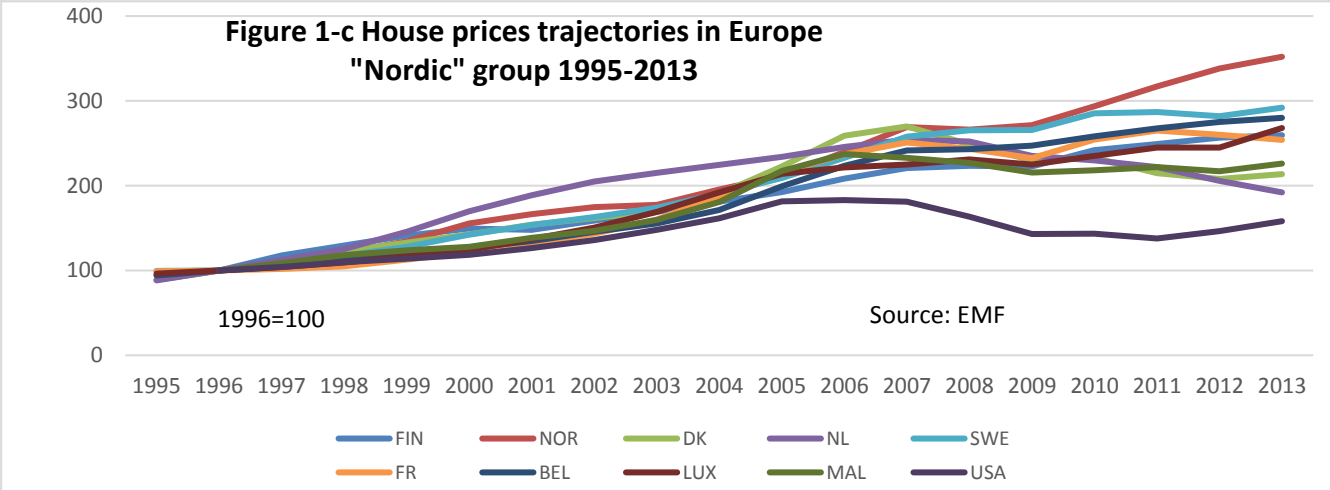
1-1 Stable, volatile or just exuberant? Three typical house price dynamics

A short view to the price dynamics strongly suggest to distinguish 3 groups of countries: stable, exuberant, and volatile, according to their respective degrees of housing markets buoyancy:

- the most *volatile markets* are located in the "peripheries" of the EU: East and Central Europe (Baltic countries, Bulgaria, Hungary, Slovenia), extreme West (Ireland, Iceland) and some (but not all) Mediterranean countries (namely Cyprus, Greece and Spain) ; in those countries, the downturn of the market after 2007 was rapid and violent, most probably signalling a housing bubble ;
- the extreme opposite is represented by the 3 "Germanic" countries, where house prices have recorded contained rises (less than 20% in Austria and Switzerland) or even smooth and continuous decline (Germany) from 1997 to 2007 ; those markets are experiencing substantial price increases since 2010 ;
- a "Nordic" group of countries, including France and Malta, with Finland plus Scandinavian countries and Benelux, stands in an intermediate position with a mixture of exuberance and relative stability, with no evidence of any critical financial fragility. In those countries, housing markets were very resilient after 2007. The trend of house prices has been very similar (see figure 1-c) in all countries belonging to this group, and very different from what happened in peripheral countries (figure 1-a) and the small group of "Germanic" stable countries (figure 1-b), either before and after the world financial crisis. The overall increase in house prices ranged between 150% and 200%, twice more than I n the US during the same period. As was the case for the "volatile" group, an acceleration process is clearly at work after 2003.







Only 3 European countries do not easily enter in this classification: Italy and Portugal on one side, and the UK on the other side. Portugal (and Italy to a lesser extent) experienced limited rises (50% and 100% respectively) of house prices in the 1996-2007 decade, followed by a non calamitous downturn after 2008. And the UK appears as a “special case” (between volatility and exuberance): the same exuberance as the “volatile”, but the same “resilience” as observed in the Nordic group. After a brief and severe credit crunch, housing markets rapidly recovered in 2010, especially in London and South-East England.

Figure 2 below clearly shows how the 3 groups differ from each other as regards the temporal dynamics of prices. Denmark and the Netherlands are the only countries within the Nordic group having experienced a drop in prices between 2008 and 2013. While Italy and Portugal stand apart from volatile countries, Norway and the UK are special cases in the North-Western group.

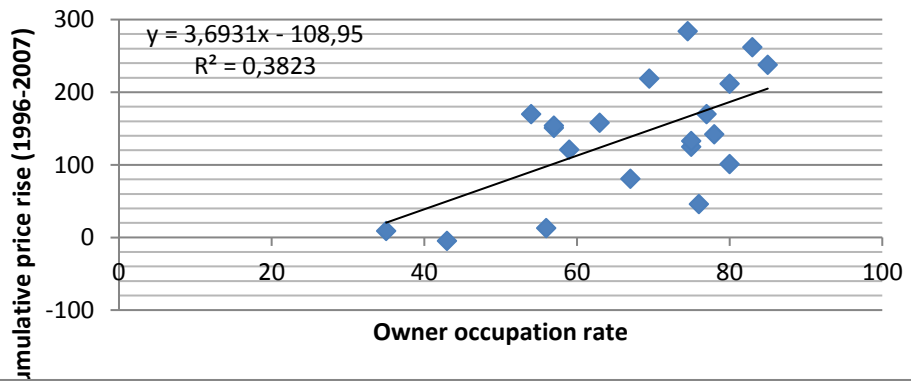
1.2 Tenures and housing market instability: no simple relationship

In the volatile group, strong fluctuations of house prices (increases over 200% in the 1996-2007 decade, and up to 350-400% in the cases if Iceland and Ireland, followed by sharp - and still going on - drops (more than 30%) after 2007) are associated with an overwhelming weigh of home ownership (80% and more). In the Baltic countries, and other Eastern countries (Bulgaria, Romania, …) the volatility of housing markets is still more impressive, with short periods of hyper buoyancy (1 to 3 years) followed by equally frenetic drops in house prices.

At the other extreme, in the Germanic countries, a majority of households are tenants[1], and the rental market is highly regulated.

But on the whole the statistical link between homeownership prevalence and house price volatility is rather weak (R^2=0.38)

Figure 2 House price rise (1996-2007) and owner occupation rate



In the "central" block of countries belonging to the "Nordic" group, there is no clear relationship between tenures and market buyoancy. Belgium and Luxembourg, where the rental sector is weak, and social housing very limited, have not been more buoyant than Denmark, the Netherlands and France whose rental sector is much more significant. Focus will be put in section 2 on the "Nordic" group and the UK.

Along with tenures and house prices trends, our market-based typology is consistent with a number of characteristics of housing finance and public policies. A strong tradition of public support to housing and a sustainable level of residential debt are common features in the Nordic group.

[1] At least in Vienna and other big cities in the case of Austria.

TABLE 1 CHARACTERISTICS OF THE HOUSING SYSTEMS AND RESIDENTIAL LOAN MARKETS

Country	Home ownership	Private rental	Social rental	Private rents	Public support to ownership	Mortgage markets	Level of residential debt	Rise of indebtness 1996-2007	House price dynamics
Germany	Minority	Important	Residual	Strong regulation	Weak	Strongly regulated	Low	No	Counterflow
Austria	Minority	Important	Important	Strong regulation	Weak	Regulated	Very low	Slow	Very low
Switzerland	Minority	Majority	Small	Regulated	Weak		High	Strong	Low
Belgium	Majority		Small				Moderate	Very strong	Exuberant, Strong resilience
Denmark	Majority	Important	Important	Strong regulation	Moderate	Deregulated	Very high	Very strong	Exuberant, Weak resilience
Finland	Majority	Important	Important	De regulated	Moderate	Re-regulated	Low	No	Exuberant, Strong resilience
Norway	Invasive	Significant	Important		Strong		High	Limited	Exuberant Strong resilience
Netherlands	Majority	Weak	Very important	Regulated	Moderate	Deregulated	Very high	Very strong	Exuberant, Weak resilience
Sweden	Majority	Important	Important	Strong regulation	Growing	Re-regulated	High	Very slow	Exuberant, Strong resilience
France	Majority	Important	Important	Low regulation (rises only)	Strong	Strongly regulated	Low	Very strong	Exuberant, Strong resilience
UK	Dominant	Weak	Important	Free	Strong	Deregulated	Very high	Strong	Exuberant
Italy	Dominant	Weak	Residual				Very low	Limited	Moderate
Portugal	Dominant	Significant	Residual			Regulated	High	Very strong	Low volatility
Spain	Invasive	Weak	Residual		Strong	Deregulated	High	Very strong	High volatility
Greece	Dominant	Significant	Inexistant				Low	Strong	High volatility
Ireland	Dominant	Weak	Residual	Free		Deregulated	Very high	Disproportionate	High volatility
Iceland	Invasive	Weak	Residual			Deregulated	Very high	Disproportionate	High volatility
Hungary	Dominant	Weak	Residual	Free			Very low	Limited	High volatility

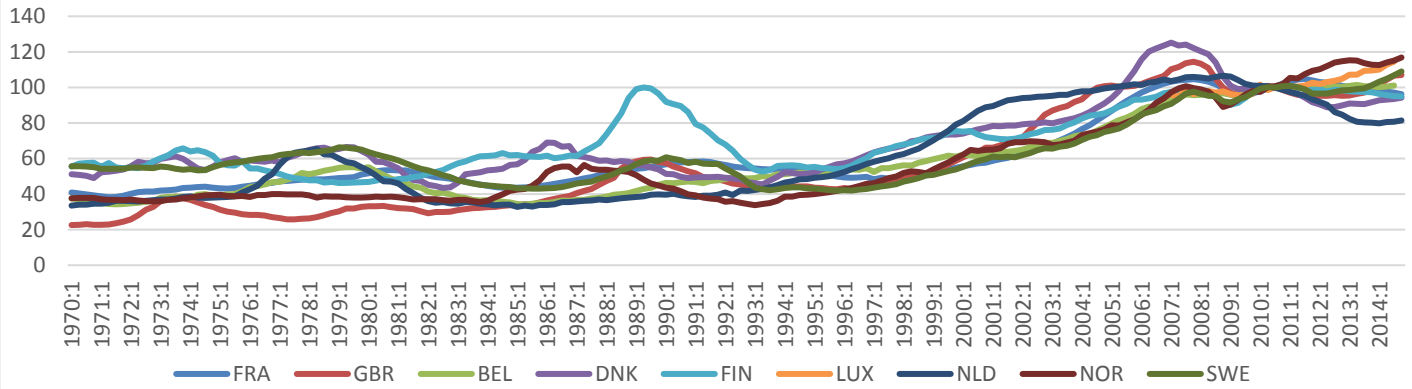
Our classification of European countries between peripheral / volatile, Germanic / stable and Nordic / exuberant, unless not totally contradictory to former proposals) in this volume may appear as a kind of oddity. The fact is that it is very difficult to concile policy-based differenciations (such as the liberal / social-democrat / corporatist trilogy developed by Esping-Andersen (….)) with the reality of complex stratified housing systems (marketized / socialized) and/or housing markets (dual/unitary (Kemeny 1995)) or static/dynamic ((….)). And some countries are definitely difficult to categorize, especially Italy, Portugal and the UK. The fact is that every national situation presents so many distinctive peculiar characteristics, that it is hardly possible to find a classification which fits for all analytical purposes. Our categorization is clearly market-oriented, but nonetheless different from those made by Van der Heijden, Dol and Oxley (2011) or by Dewilde and de Decker (2015). Maybe the most surprising is to

1.3 Nordic mysteries

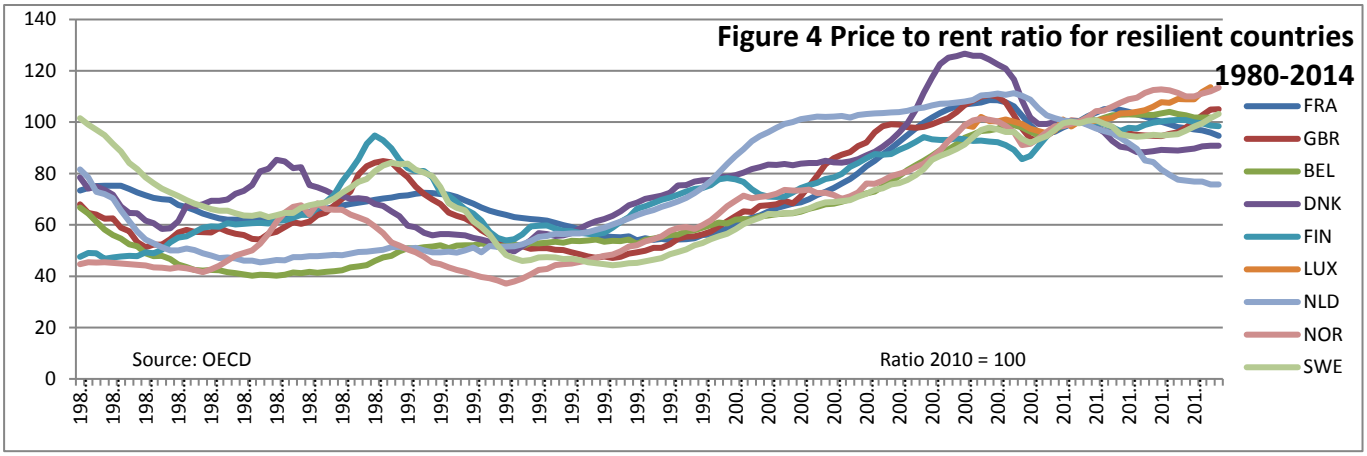
1) Resilience and persisting disconnection:

After 2007, only 2 countries from the "Nordic" group have experienced serious drops in real house prices: Denmark and the Netherlands. But in the other countries (see figure 3), real prices have recovered their pre-crisis levels, and were still near their peak level of 2007 (or even above in the cases of Luxembourg, Norway and Sweden) at the end of 2014. Even in the Netherlands, where the decrease in prices has been most intense, the real price of houses did not fall beyond its 2000 level, a historical high.

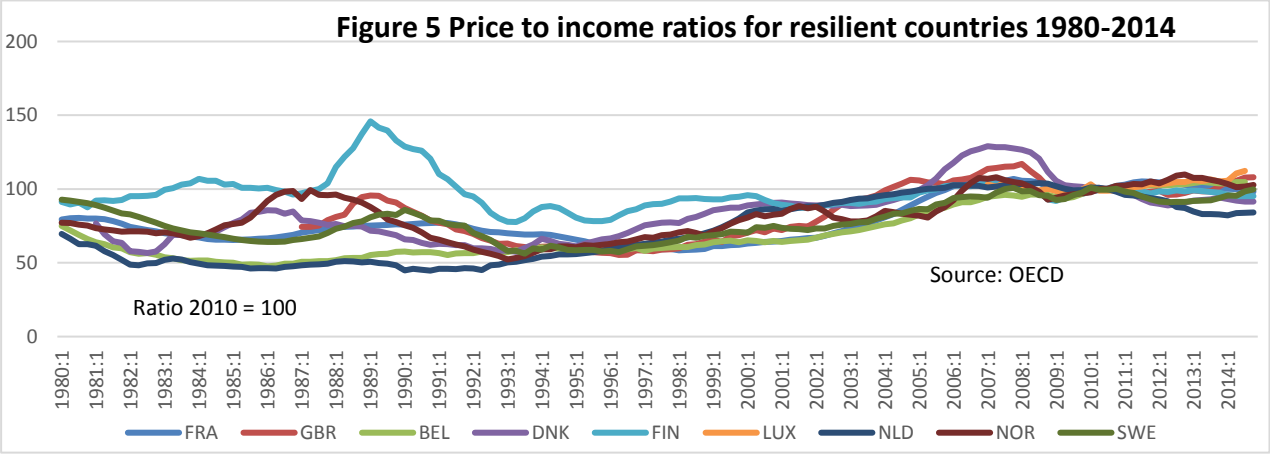
Figure 3 Real house prices - 1970-2014 - European resilient markets



Accordingly, in 2014 house prices were still disconnected from incomes and rents. Price to rent and price to income ratios remained at exceptionally high levels, without any sign of a return to normality. Price to rent ratios stay at their peak level of 2007-2008, about 40% above their long run mean value, and even a little higher in Norway and Luxembourg. In all countries, they are widely above their summits of the late 80s.



In the same way, and except for Denmark and Finland, price to income ratios (see figure 5) were still in 2014 at their peak levels of 2007-2008, and in most cases above the preceding records of the late 80s.

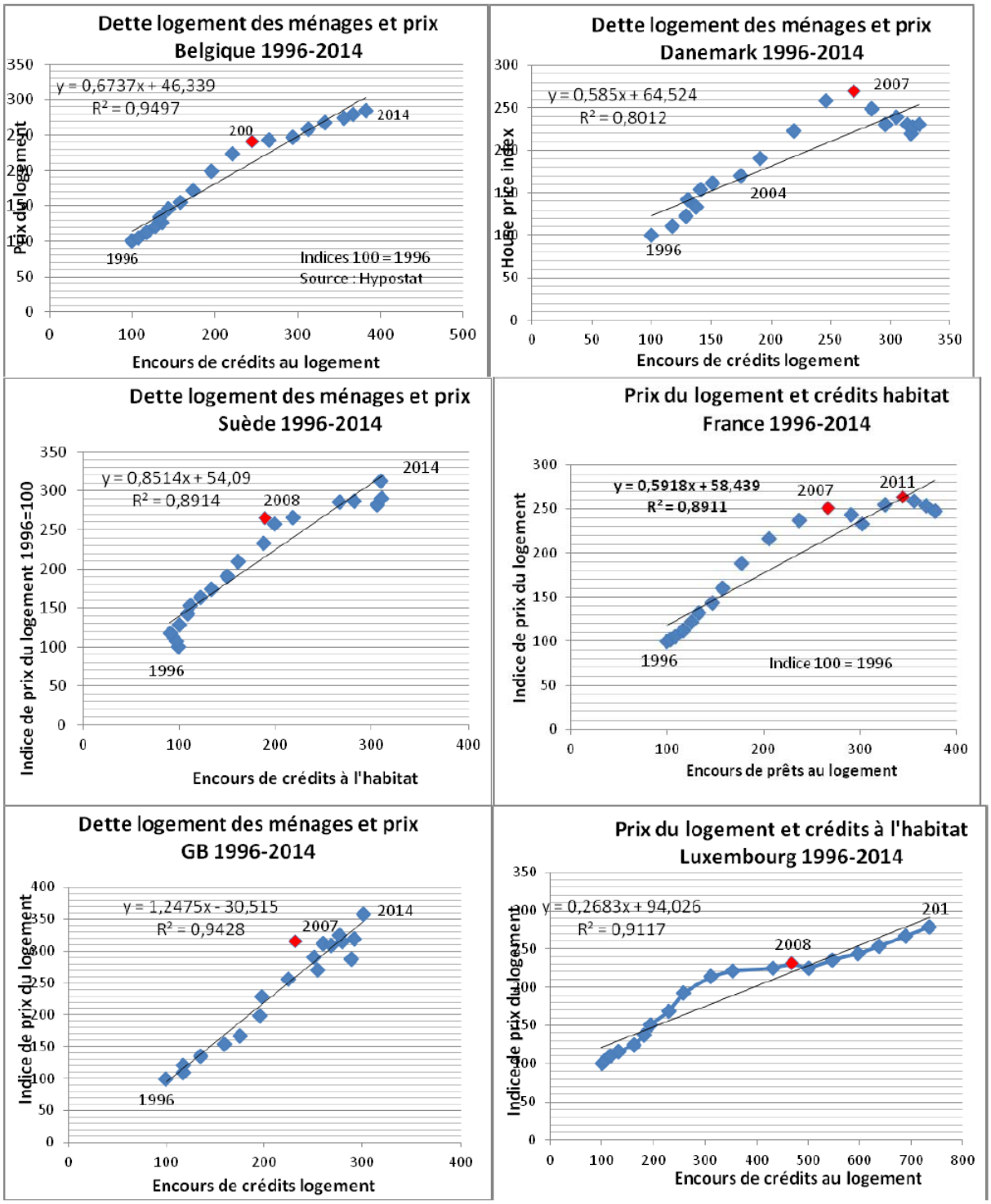


Such a persisting disconnection between prices and their "fundamentals" dismisses conventional economic wisdom which tells us that market (demand) prices are nothing more than the actual amount of future rents, to which the (cost) supply-price should equalize in the long run, so that if rents are not (unduely) controlled, the housing market would be self-regulated and efficient, through continuous adjustments of prices (in the short run) and the housing stock (in the long run).

2) The credit channel, and what else?

Of course, the first and massive explanation of the disconnection between prices and rent as between prices and incomes is the continuous decline in mortgage interest rates since the mid 90's, leading to unprecedented lows. Along with longer maturities of loans, and good macroeconomic conditions, it explains the recovery after the real estate crises of the 90's, but not the acceleration of the late 2000's. As can be seen on figures 6-a to 6-f, house prices and the volume of residential loans evolved in line with another with a correlation of 0.80 to 0.95, but during the years 2003 to 2008 the rise in prices is accelerating relatively to the rise of debt.

FIGURES 6-a to 6-f HOUSE PRICES AND RESIDENTIAL DEBT – RESILIENT COUNTRIES

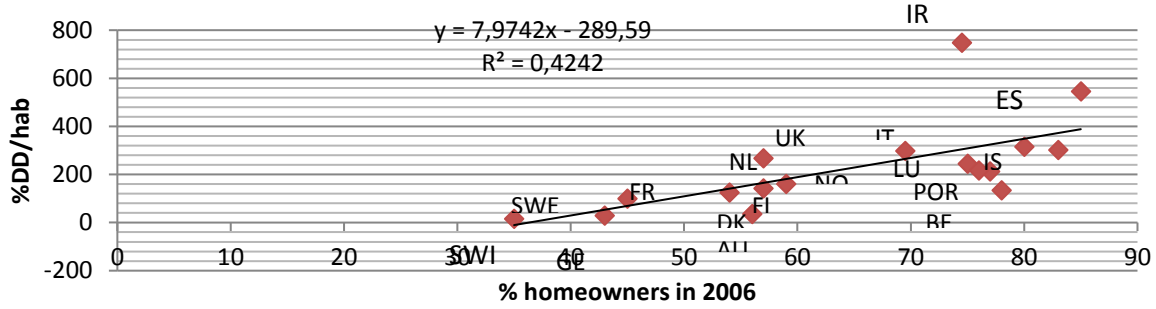


The relationship between tenures and house price dynamics is indirect. It goes from home ownership to residential debt (R2=0.42), and from debt to prices (R2=0.63): the declining interest rates (and other favorable credit conditions) allow higher borrowing, which in turn increases biding capacity, thus effective demand, and finally drives prices up.

But this "financial accelerator" of prices is not specific of the "northern" countries, the cost of credit has been lowered in the same proportions in Germany, Austria and Switzerland.

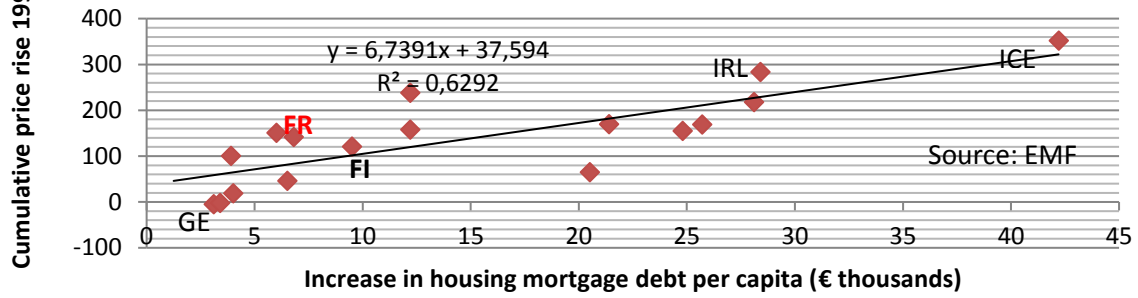
The degree of housing finance deregulation is not either a key to explain high volatilities of house prices. According to IMF and ECB, the development of mortgage markets was rather limited in Ireland and Spain (see MCD indicator in table 2 below), in comparison with Denmark, Sweden and The Netherlands. Typical maturities and typical LTVs are not either discriminant. Finally, securitization was also very limited in Southern Europe.

Figure 7-a Home ownership and housing debt per capita (% growth 1996-2007)



Sources: EMF & Cecodhas

Figure 7-b House price rises and increase in housing debt per capita (% growth 1996-2007)



Thus, the frontier between "sensible" exuberance (in North-Western Europe) and "irrational" volatility in Eastern and Southern countries cannot be drawn through housing finance criterias. The only cases where there is a clear relationship between mortgage loans deregulation and post crisis developments on housing markets are Denmark and the Netherlands. Both exhibit high levels of housing debt and a strong development of mortgage credit.

Generally speaking, the debt level and its relative growth (see table 2) are the best criterias for identifying virtual financial fragility. Belgium, Finland and France appear as the most robust from this viewpoint. And of course Austria and Germany, but also Italy.

Table 2 Mortgage debt and mortgage market characteristics

	MD/Y 2007[a]	% growth[b] 96-2007	NMD/inh 2007[c]	% growth[d] 96-2007	MD/Y 2013	% growth[b] 2007-13	NMD/inh 2013[c]	% growth[d] 2007-13	Typ. LTV[e]	Typ. Mat[f]	TIR[g]	EQU[h]	MCD[i]	Bank reg[j]
Austria	24	+12	9,850	+175	28	+4	12,600	+28	60	25	25%	No	0.31	2.49
Germany	48	+1	16,980	+28	44	-4	17,555	+3.4	70	25	0%	No	0.28	1.97
Italy	17,5	+10	5,500	+270	23	+5.5	7,277	+32.3	50	-	36%*	No	0.26	2.74
Finland	34	+5	14,884	+95	45,7	+11.7	20,311	+36.5	75	17	97%	Yes	0.49	1.95
France	35	+15	13,200	+143	43,8	+8.8	17,700	+34	75	15	14%	No	0.23	1.52
Belgium	38	+12	15,050	+139	49,5	+11.5	21,320	+42	83	20	6%	No	0.34	2.18
Sweden	65,5	+14,5	30,348	+96	81	+15.5	44,624	+47	80	25	38%	Yes	0.66	2.31
Denmark	93	+31	46,130	+125	94	+1	52,920	+14.5	80	30	25%	Yes	0.82	2.06
Netherlands	98	+56	43,013	+258	105	+7	47,478	+10.4	90	30	30%	Yes	0.71	1.66
UK	85	+27	33,856	+204	81	-4	30,421	-10	75	25	72%	Ext	0.58	1.45
Spain	62	+44	17,519	+561	60	-2	15,977	-9	70	20	76%	Lim.	0.40	1.78
Ireland	74	+50	42,763	+758	58	-16	27,787	-35	70	20	70%	Lim.	0.39	0.74
Iceland	119	+54	24,600	+314			11,660	-52						
EU27	48		14,609		51	+1,5	16,220	+11						

a. Residential mortgage debt to GDP ratio. Source: EMF b. Points of GDP. c. Nominal residential mortgage debt per adult. Source: EMF
d. Variation of nominal debt per capita. e. Typical Loan to Value ratio. f. Typical maturity of mortgage loans.
g. Type of interest rate (% of variable). h. Equity withdrawal. i. Index of mortgage credit development (IMF).
j. Bank regulation (increasing in strictness (OECD)). *72% mixed
Sources: ECB (2003), EMF (2012), IMF (2012), OECD (2011).

On the whole, as the “financial accelerator” was at work in all European countries, it cannot explain why and how the buoyancy of housing markets was not followed by stagnation or depression after the Great Contraction following the world financial crisis. What are the factors explaining such a stabilization at so high levels of house prices?

The relaxation of monetary policies, giving the way to unprecedented low interest rates, is only part of the story. And the role of low interest rates is somewhat paradoxical; on one side, they raise the purchasing power of households; on the other side, as they contribute to drive up prices, they reduce the bidding capacity of future buyers. If interest rates were to decline – and they will do it one day or another ! – the effect on house prices would be immediate, but as regards households, the decline in prices would compensate for the rising cost of credit, so that the net effect on effective demand might remain uncertain.

As regards “volatile” countries, it is not so hard to find a story, which has a lot of antecedents in economic history; it is a story of “overtrading”, a term used by Adam Smith to qualify the Ayr Bank collapse of 1772, and the crisis which followed; and it is a text-book classical real estate crisis: developers and the building industry overreact to a market recovery, subsequent to some “fundamental” shocks on demand ; this story is in line with what happened in Spain, Iceland, the Baltic countries and in a general way in the peripheries of Europe. But it doesn’t fit with what succeeded in our “Nordic” group. Even in the US, the story was somewhat different: the so-called subprime crisis was the produce of specific financial developments, and uncontrolled growth of risky bank loans, not so much a downfall of overproduction.

2. The Nordic housing market regime: in search of a theory

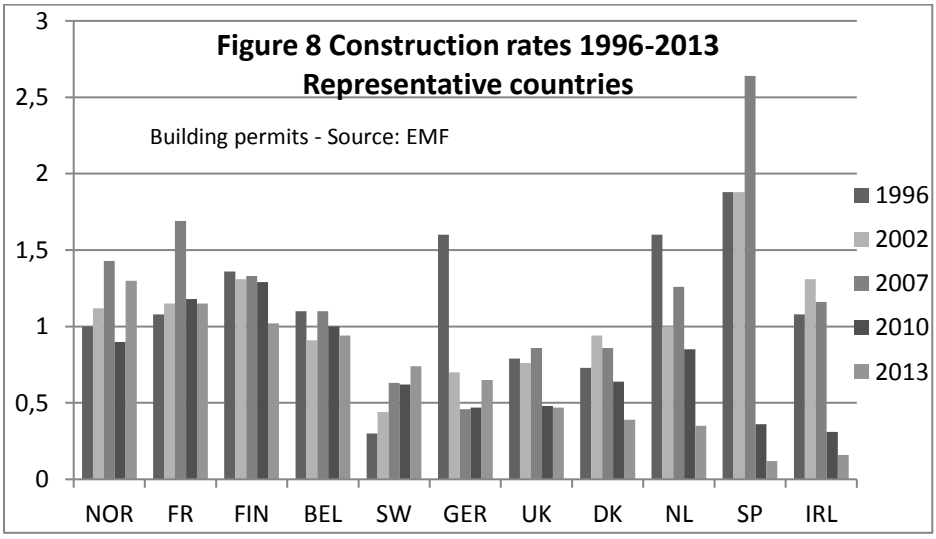
There is little doubt that the initial impulse to house prices was given by the general economic recovery of the late 90s, during the net.economy boom. Economic growth, cheaper credit and greater incomes give a reasonably convincing account of what happened on housing markets until 2002. But why was the housing boom so long and so strong? As explained in section 1, housing finance conditions are a good part of the story, but not the whole. Usual explanations broadly consist in 2 lines of argument: one is the "supply shortage argument", the other is the "bubble hypothesis".

Our purpose in this section is first to insist on some characteristics of mature housing system, as those of old European countries, which can enlighten the recent working of their housing markets, and second to suggest an unexplored way for theorizing such "mature housing markets".

2.1 The quantity puzzle

1) <u>The shortage argument dubious</u>

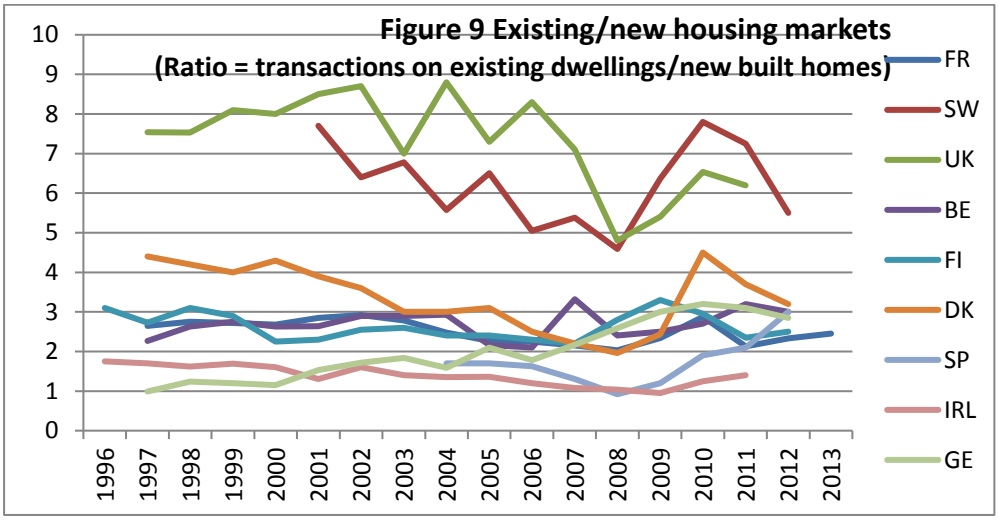
Nor exuberance nor resilience can be explained in "Nordic" countries as the product of a persistant shortage of new constructions. As shown in figure X below, the shortage argument must deserve attention in Denmark, Sweden and the UK, where construction rates effectively remained very low, but doesn't stand for Norway, France, Finland and Belgium, where they were much higher. And there is clearly no definite relationship between price movements and the levels of new construction. In Germany, the rate of construction felt dramatically after 1996, and prices were stable, while construction activity was very dynamic in Ireland and Spain, but prices exploded. Demographic trends in European countries do not justify construction rates over 1%.



2) <u>Transactions and constructions</u>

In mature housing systems, housing markets are first of all markets for existing homes. In UK and the "Nordic" group, the market for new houses represents no more than 15% to 30% of total exchanges. The number of transactions on existing homes for one completion of new built home is over 5 in Sweden and UK. Transactions represent between 2 and 3 times

completions in Belgium, Finland, France, Germany (after 2010). Ireland, Spain and Germany (before 2010) are the only cases where transactions are less than twice completions. The proportion fell to 1 for 1 in Ireland and Spain in 2008 only.



Considering that a very small part of new built dwellings are offered to buy-to-let investors, this offers a rationale for the disconnection between prices and rents. The traditional line of reasoning doesn't stand in a world where, as is the case in all European countries, except the Germanic, the rental sector represents such a small part of new supply that it is no more price-maker, and is eventually totally residualized.

3) Prices and quantities

As was already the case in the 80s, it has been observed during the pre-crisis decade that increasing prices did not dry the market. As shown on figures 10-a to 10-f, the volume of transactions remained stable or even increased during the boom. There is either no significant relationship (France, Finland, UK), or a positive correlation (Belgium, Sweden) between prices and volumes. This co-cyclicity of prices and quantities is another puzzling characteristic of markets for existing homes.

The reason why is that on property markets which are dominated by existing homes, a majority of transactions are made between home owners. Outsiders are a dominated minority of transactors. The majority of transactors are sellers-buyers, so that increasing prices do not substantially affect their purchasing power. They only have to bridge the gap between the two values. Their increased housing wealth allows them both to offer higher bid prices and to get greater loans from the bank.

The market is then driven by assets values, not by incomes trends. Growing financial wealth can eventually reinforce this dependency of effective money demand to existing stocks. Supply and demand are not independent forces, as in the usual representation of markets. Such an autonomy of demand could explain how and why price to rent and price to income ratios have reached such unusual levels, without any clear tendency to return to "normal" long run values after 2007.

And it doesn't imply that markets are involved in a speculative bubble, at least in the usual meaning of the word. The reality of contemporary housing markets is that there is no "fundamental value" which could act as an attractor for the market price.

The general shift of housing policies towards more favorable to home property and more demand-oriented, thus less committed to supply stimulus, especially for social housing has reinforced preferences for home ownership.

Beyond those common features, national housing systems have a number of distinctive characteristics. For instance, France (like Germany) has a more robust financial system than many other countries, but probably (this is a matter for further inquiry) a greater degree of spatial segregation, and a more rigid separation between rental and property segments than Scandinavian countries. As we have seen price-elasticities are very different from one country to another: very low in Sweden and the UK, notably higher in Belgium and France. Thus the same exuberance of housing markets may be the result of different national cocktails.

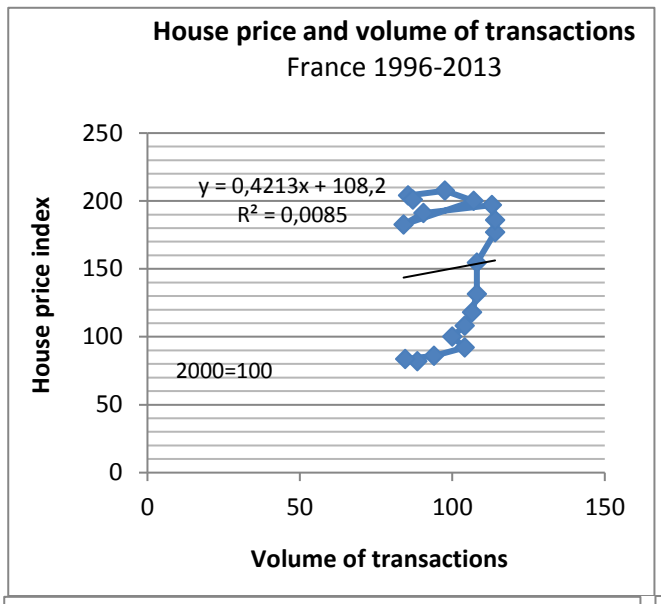
2.2 A new price regime

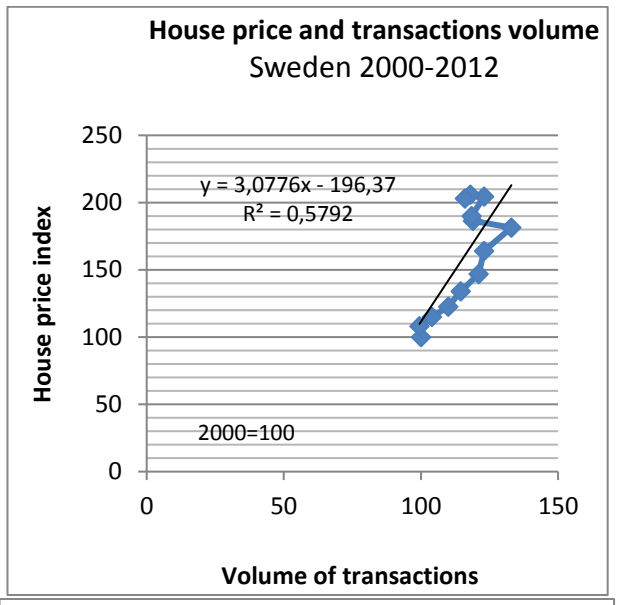
On markets dominated by the property department (and not the rental department) and transactions on existing homes, in a context of permanently low levels of construction, rents are no more price drivers and production costs are no more long run « attractors ».

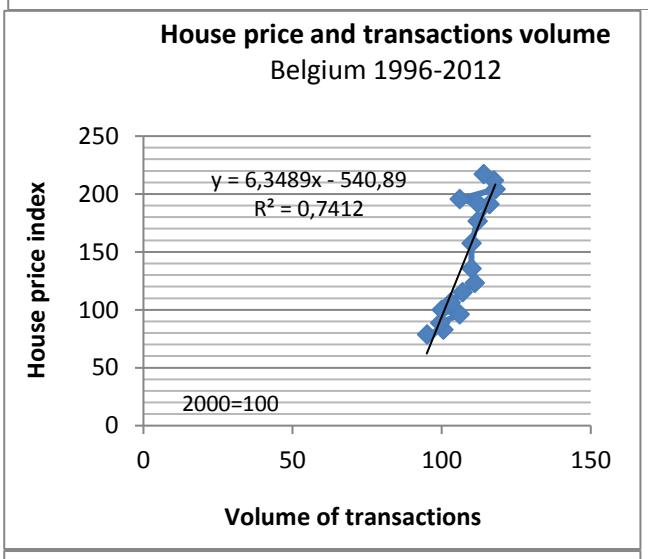
The structure of contemporary housing markets has strong impact on the market process of prices formation: the price of new housing now depends upon the price of existing housing, through the price of land, and expectations tend to dominate the process of price formation.

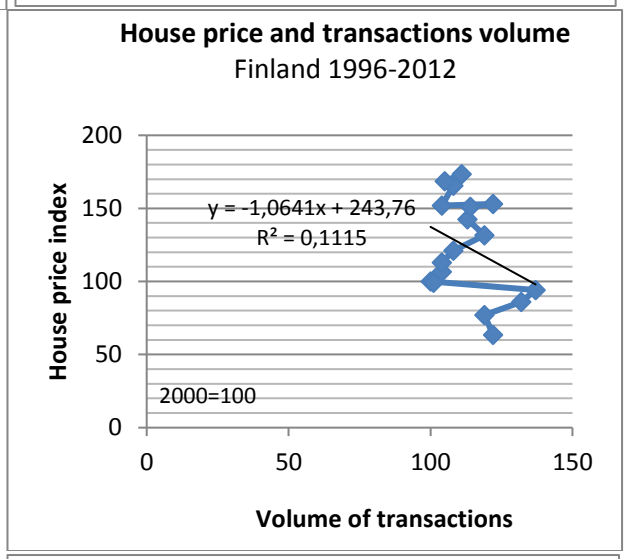
The main determinant of prices for existing homes is the amount of accumulated saving which can be devoted to transactions. But for the majority of buyers, this amount depends … upon the current price of existing homes. Which is highly dependent of the subjective future value attributed by transactors to a given place. Here the localized character of housing plays a decisive role. Owning a home is not only owning a living place, but also obtaining rights on a definite piece of space. The present valuation of a place depends upon the dominant (conventional) opinion of what will be its future value. There is no objective criteria which can guide and discipline the “urban animal spirits” governing such expectations, which are speculative in the proper meaning, but not in the sense that they are “independent” of fundamentals which do not exist. Estimating future rents is of no help, because they will be determined by … future values of something which is not a commodity with a cost of production, but the price of land, in which the value of the place is objectivized, but dependant upon subjective valuations and expectations.

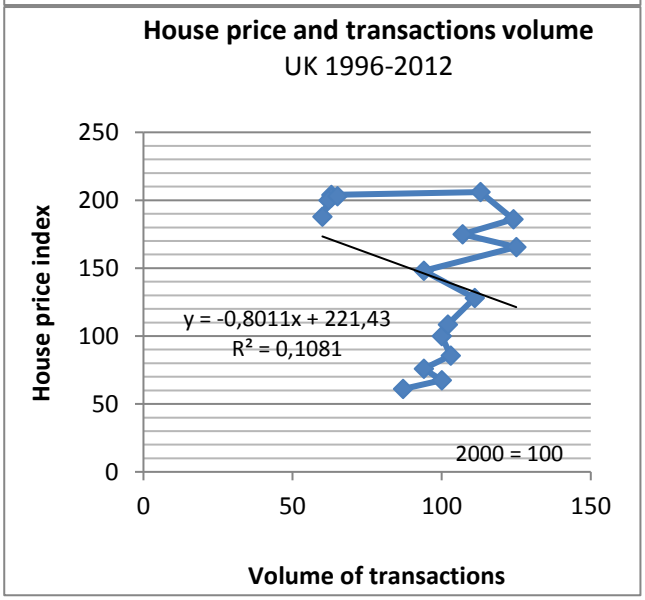
FIGURES 10-A TO 10-F HOUSE PRICE AND TRANSACTIONS VOLUME

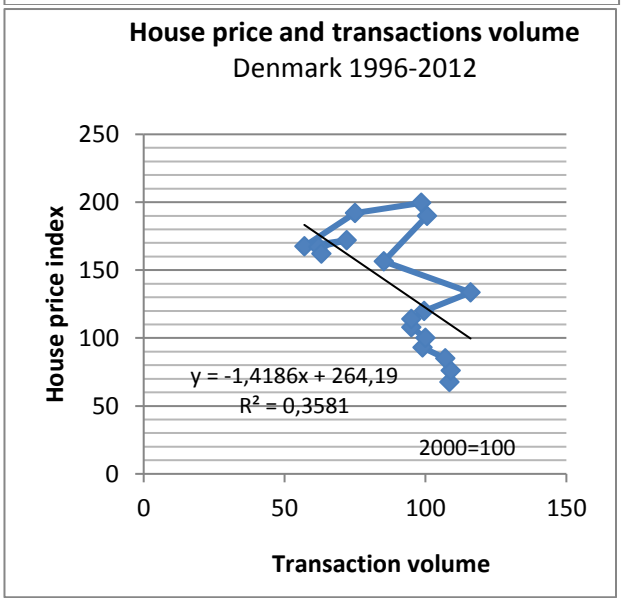












2.3 Segmented housing markets and the disequilibrium hypothesis

What generally puts in motion a housing boom, subject to favorable macroeconomic conditions, is a displacement in demand which causes a mismatch with the existing stock. For any reason (demographic, like a migration shock or economic, like a change in the distribution of incomes, or in residential behaviors) the structure of the housing stock is no more (or less than before) adapted to the new structure of demands. Which creates sectorial (and located) disequilibriums which will in turn originate crowding out and lock-in effects and may destabilize the whole market system.

We are thus driven to a vision of housing markets as a set of sub-markets in permanent interaction with one another. In such an unending process, markets never reach a stable equilibrium.

1) Rationale for the disequilibrium hypothesis

As advocated by Rothenberg, Galster, Butler and Pitkin (*The Maze of Urban Housing Markets*, 1991) the heterogeneity and durability of housing result in a high degree of market segmentation. The housing system is composed of different sub-markets, between which substituability is narrowly limited. Especially if we consider a third dimension of housing: its spatial immobility, which adds a lot to its complexity. Adjusting the market doesn't mean equalizing demand and supply, but entering in an unending matching process between houses and households of different types.
Two sets of reasons make the case for disequilibrium:

- In the short run (market period), the heterogeinity of the housing stock and the rigidity of supply imply information and transaction costs which makes the transaction process very complex, and generates mismatches;
- In the medium run (investment/production period), time lags in production and the viscosity of the urban structure (not only the housing stock. Because all individuals are not reallocated at each moment of time, urban space is not marginalist.

2) What should be adressed?

The first stake for economic theorists is to offer a realistic vision of market processes in a world where a full equilibrium is not instantaneously obtained. If individuals are not pure machines, demand and supply functions cannot be « walrasian » ones. Effective demands (as opposed to notional demand) cannot be deduced from simple utility maximization under budget constraint. Additional constraints must be introduced on liquidity and on disposable supply. On housing markets, "supply" doesn't mean only quantities offered, but also spatial disposability. Housing units of definite types must be affordable *at the right place* in the good proportion.

Then, if transactions are going on in disequilibrium, the final result is uncertain. The long run doesn't exist as an independent analytical level. Because the target will move during the adjustment process, there is no "natural" level of housing values. Path dependency effects are thus unavoidable. Rather than reaching a pre-definite equilibrium point, stability consists in keeping on a sustainable trajectory.

The next stake is to identify what have been the initial "displacements" which have put in motion the disequilibrium process. They may have two origins: in the structure of

employment and/or households, or in spatial preferences and behaviors. Probably the two types of "displacements" have played a role in the 2000s. The most probable is the scarcity of free spaces for upper-middle class households (a "spatial-quantity" constraint) (deciles 6 to 8?).

European cities are almost universally involved in two processes: gentrification and urban sprawl. The former corresponds to what we called (see Tutin & Vorms (2014)) a « peripheric » market regime ruling cheap home ownership development for low income households on the urban fringe; this regime is credit led and sustained by public policies. The latter, which is at work in inner cities and first belts, is led by middle and upper-middle class households. It is an asset-led market regime self-sustained by capital gains. Gentrification comes from a lack of intermediate residential spaces, in societies where those middle class households represent a growing proportion of the employed population. It consists in refurbishing the existing housing stock in former popular neighborhoods, and thus in a restructuration of the whole hierarchy of residential spaces. This is probably the main initial displacement explaining the strength and duration of the housing boom.

The dominant regime is the "central" regime, run by gentrifiers, which is also the less fragile, being widely self-sustained by the very inflation of housing wealth. The upsurge of house prices comes from the top of the market, not from the bottom. In such an "asset-led" market regime, as opposed to an "income-led" regime, the dynamics of wealth accumulation is "driven by capital gains/losses on real and financial assets rather than the accumulation of active saving by households. Consequently, the relationship between the historical (aggregate) saving rates of net wealth across countries is often quite noisy" (HFCN 2013, p. 15), and house prices are governed by arbitrages on stocks, not by income and savings flows. Which urges for an analysis of market processes based upon stock-flows interactions, rather than instantaneous supply and demand confrontation.

3) The case for SFC modelling

SFC (stock flow coherent) models have been developed in the last 2 decades as a post-keynesian alternative to DGSE (Dynamic Stochastic General Equilibrium) models; initially derived from Tobin (1969, 1982) and Minsky (1990), they have been implemented by Godley (1999), Lavoie ( ) and Taylor (2004). The main differences with neoclassical general equilibrium relate to the representation of individuals, and the role of stocks: individual agents are represented by their balance sheets, and current flows of income and savings governed by valuations of stocks. The potential supply of assets consists in the whole accumulated stock. Of course, this is a pure virtuality, but the possibility that sellers are numerous and buyers very few, so that real estate becomes illiquid, is not a fantasy. Thus current flows are governed by stocks.

This approach holds a nominalist view of the economy: liabilities and contacts (including labor contracts) are expressed in money terms (standard theory is outrageously realistic), and demand is nothing else than a monetary purchasing power present on the market. Economic theory is too much accustomed to think about demand as a "quantity" (in the case of housing, a number of dwelling units) when it should be considered, in a monetary economy, as a certain amount of money offered to the market. This old view of money demand was held by pre-classical economics: its best expression can be found in Cantillon's *Essay*

SFC models are of special interest for contemporary housing markets, in « mature urban housing systems », where *valuation of the housing stock* and the *outstanding stock of housing debt* are the main triggers of house price dynamics.

Under the condition that it is sustained by the credit system, a wealth to price circle can be initialized by any displacement in the composition of population, housing preferences, income distribution or any factor affecting the matching between continuously evolving demands and a rigid stock of dwellings and city structure. Once engaged in a boom, home property markets operate as a self sustained circular row.

Conclusion

In this paper, we first identified three different housing market regimes (labelled as Germanic, Nordic and Peripheral), based on tenures, house prices dynamics, and different levels of debt burden and financial fragility. The so-called "Nordic" group of countries is typical of a new "price regime", characterized by a strong pre-crisis exuberance, in contrast with Germanic countries, and a remarkable post-crisis resilience, which contrasts with the violent burst of prices in the volatile group.

Once admitted that the "supply shortage argument", and the "bubble hypothesis" are both non convincing, it is necessary to identify what are the common characteristics between those "northern" countries to which this specific house price regime could be related. The clear dominance of transactions on existing homes, the positive correlation between prices and quantities, and the role of credit have been

Finally, what is suggested is to consider north-european house prices as a case-study for disequilibrium analysis.

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