

## EMERGENT PHENOMENA IN HOUSING MARKETS

**Lidia Diappi**

Politecnico di Milano

Dpt. Architecture and urban Studies

### *Abstract*

Housing market has been widely explored by many studies in economics, appraisal, planning and sociology. Nevertheless some recent approaches focusing on the micro behaviour of the agents involved (landlords, tenants, developers, investors) may yield unexpected insights on the evolution of the market. Many phenomena such as gentrification, social polarization or market cycles may be considered as outcome of bottom up processes arising from the interaction among and collective learning of people searching for a home or an investment opportunity (Diappi, 2012). They may be approached as emergent systems exhibiting unexpected properties generated by new organizations.

What is emergence? Emergence (Rosen, 2000) can be considered synonymous with qualitative novelty which is unpredictable and not deducible on the basis of the previous properties. Emergence is a “pattern formation” characterized by a self organizing process driven by non linear dynamics. Imitative, cooperative or intolerant attitudes of people with respect to the others may bring to different pattern in urban space, influencing the local housing market.

Assuming this perspective the housing market is a far from equilibrium system where a new spatial order and hence a large scale structure, emerges from socio spatial micro-relationships at individual level.

The gentrification process gives a significant example of emergence. It concerns the transformation of shabby decaying neighbourhoods in affluent, alive and renovated neighbourhoods. The gentrifiers are middle class invaders, which gradually displace the poor original inhabitants. Is this a process driven by supply or by demand? The large body of research on this topic is polarized around two positions. For the demand side, gentrification is triggered by the housing demand of new professionals, a new affluent class emerging in the transition from industrial to post industrial urban economy. (Atkinson, 2000; Hamnett, 2003) For other demand side supporters gentrification is generated by the return of the middle class to the city.

The supply side explanation, mainly represented by Smith (1979), claims that is the capital, given appropriate conditions, which finds it worthwhile to invest in decayed neighbourhoods, owing to the potential gains in land and real estate rent.

Actually the demand side explanation seems to ignore that gentrification is a very selective process, taking place only if the local conditions allow. The supply side explanation holds only for big investors able to carry out large renewal urban projects in decayed neighbourhoods..

Both don't explain the collective nature of the process, where a multitude of improvements of properties belonging to myriads of homeowners is matching more and more the demand for housing for affluent people in search of an urban quality of life and good investment opportunities .

A vision of the phenomenon based on emergence allows to overcome the two schematic positions and to conceptualize gentrification as a collective process driven both by supply and demand representative agents which interact each other:

For property owners the choice whether to invest or not in refurbishment and eventually to sell or rent is influenced by the neighbouring maintenance conditions and the expected rent after rehabilitation. Several restructured buildings are able to trigger the take off of the area increasing its average rent . The perceived better quality of the neighbourhood and the

expected good returns of investments drive people in search of housing to buy there. A filtering up process of the tenants is taking place and the social character of the neighbourhood gradually changes. A survey based on 300 interviews to gentrifiers in the Isola neighbourhood in Milan supporting the assumptions above will be presented in the presentation.

A model of emergence of gentrification and some simulations will then be shown. Here the behaviour of different agents such as real estate investors, property owners, landlords and tenants are modelled with the aim to evaluate the effects of some large scale renewal projects of former industrial sites on the real estate market in Milan.

The simulations, based on a Agent Based Modelling and Cellular Automata show different spatial configurations and temporal fluctuations in function of different parameters.

Analogous bottom up approaches can be applied in order to understand the nature of phenomena such as the cyclical behaviour of the real estate market (Mueller, 1995) and the social polarization or segregation (Schelling, 1971).

## **References**

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