

# London's Housing Crisis

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## **ABSTRACT**

One does not need to be an expert in housing to be concerned about the severity of the current housing crisis in London. An overwhelming majority of the city's population face the predicament of deteriorating housing affordability. Median house prices are now more than ten times median incomes, additions to the stock are insufficient, and prices are volatile.

In the search for remedies, well-intended solutions emerging from fragmented analyses of the problem inevitably lead to unintended consequences. The incapacity of the human mind to correctly infer the behaviour of complex systems presents a case for System Dynamics.

This paper, the result of the first year of a PhD, describes the underlying socio-economic structure responsible for the Housing crisis in London. We have built a causal loop diagram of London's housing situation which demonstrates how the interlocking of numerous reinforcing feedback loops have contributed to the house price inflation, and how the potential for a future crash is essentially built into the system. We contend that this type of conceptualisation can help prevent the typical 'blame game' going on in various circles, and focus resources on overhauling the broken system via designing and implementing a concerted package of transformative policies.

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<sup>1</sup> This work is the result of the first year of a PhD. Kaveh Dianati is the PhD student. Nicole Zimmermann and Michael Davies are his supervisors.

## 1. BACKGROUND AND PROBLEM DEFINITION

Over the past 40 years, real house prices – but not real incomes – have grown faster in the UK than in any other OECD country (Figure 1). As a consequence, a genuine ‘housing affordability crisis’ (henceforth *Housing Crisis*) has been developing, which is particularly severe in the Greater London Area (Hilber, 2015; Hilber & Vermeulen, 2016). Median house prices are now ten to sixteen times medium incomes in London, the worst affordability level since data became available (

Figure 2) (Hilber, 2015).

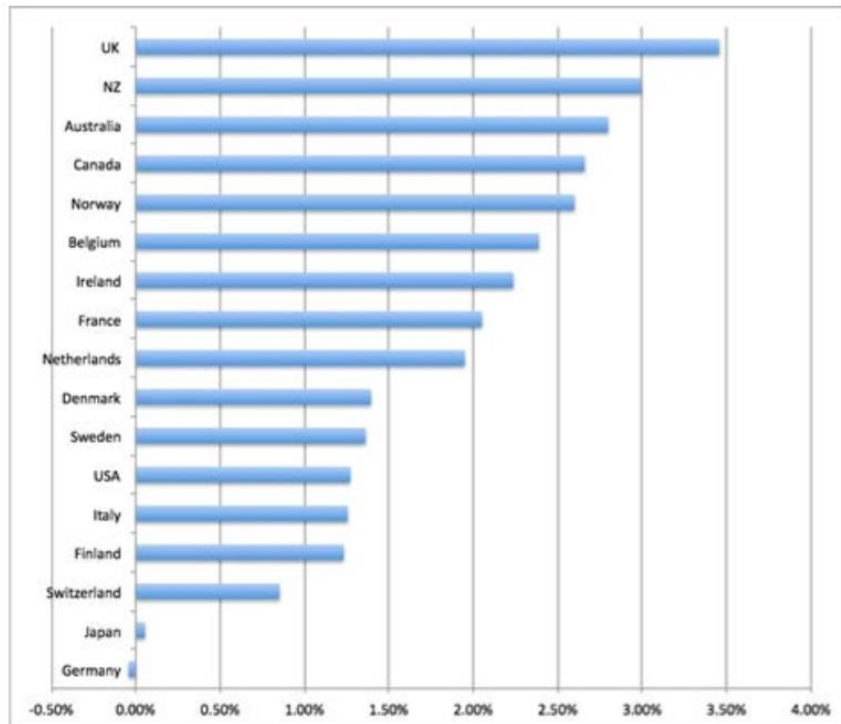


Figure 1 - Annual average change in real house prices in OECD Countries (1970 - 2013). Borrowed from Edwards (2015)

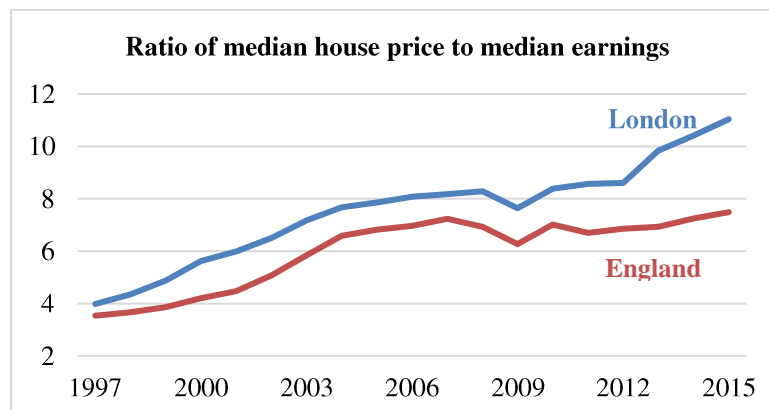


Figure 2 - Affordability in London and in England (1997-2015). Source DCLG LiveTable 577

There is some debate about the extent to which the government’s policies are driving the apparent development of a new housing bubble in London and the Southeast (Smyth, 2015).

Also, there are clear gaps in understanding relating to the under-supply of housing in response to rising house prices (Figure 3) (Harris, 2003).

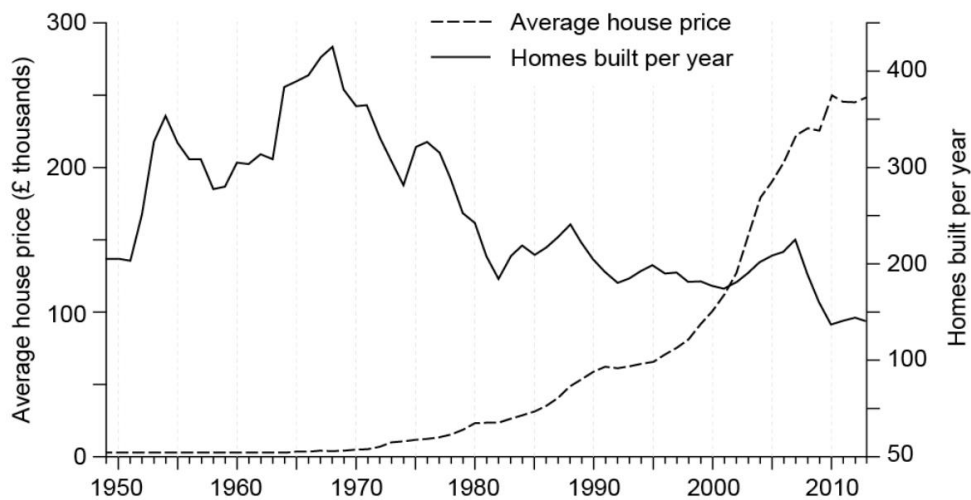
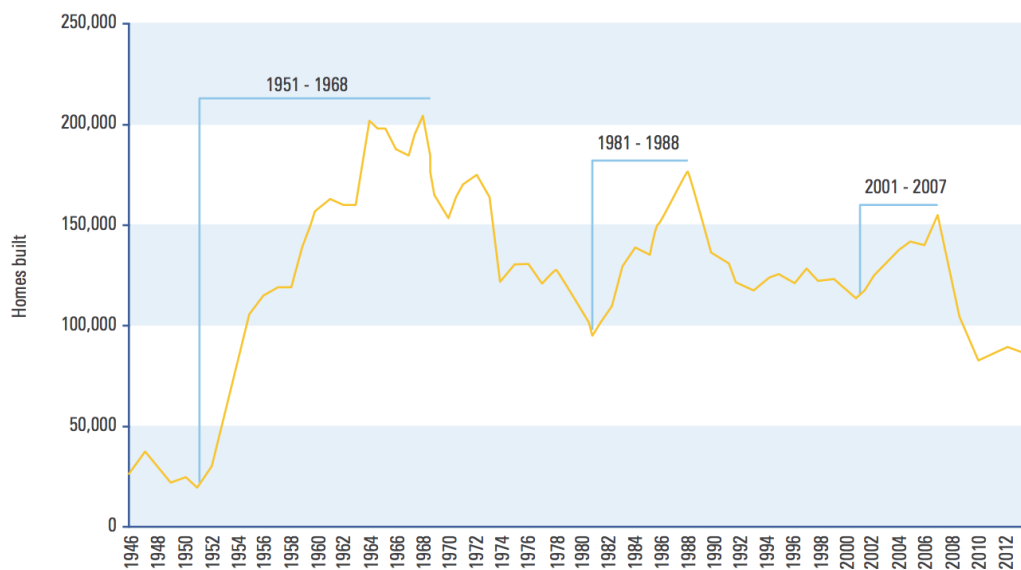


Figure 3 - UK housing supply and house prices. Borrowed from Gallent (2015)

The very high rents and housing costs being extracted from workers constitute a great burden on the productive economy and its competitiveness, particularly in London and the South East (Edwards, 2015; KPMG and Shelter, 2015, p. 47). The UK's housing system has grown into an engine of growing inequality, concentrating wealth in the hands of landowners, landlords and established owner-occupiers (and the lawyers, surveyors, developers and financial institutions integral to the process), at the expense of tenants, new buyers and the growing numbers rendered homeless (Edwards, 2016). The increasingly inequitable distribution of housing in Britain should be an important cause for concern (Dorling, 2015).

The UK housing market is also highly volatile, especially compared to its European counterparts (Montgomerie & Büdenbender, 2015). House price volatility may lead to volatility of consumption and reduced macro-economic stability (Hilber & Vermeulen, 2016). Besides prices, private house building is also cyclical, having shown three major 'boom-and-bust' cycles since WWII, and with each cycle total output has ratcheted steadily down, as seen in the three distinct cycles highlighted in Figure 4 (KPMG and Shelter, 2015, p. 5).

Edwards (2015, p. 24) justifies calling the situation a 'crisis' "because it is so threatening to the health, stability and cohesion of the society – to 'sustainability' if you like that term", as well as the economy (Edwards, 2015). Echoing Danny Dorling's (2014) recent book, housing is the defining issue of our times.



Source: DCLG

Figure 4 - Private sector house building England 1946 -2013. Borrowed from KPMG and Shelter (2015)

Movements in London house prices have tended to exceed and anticipate those across the rest of the UK (Harris, 2003). There has been much discussion of a specific ripple effect on house prices through the country with London as the epicentre (Harris, 2003). Furthermore, McKee et al. (2016) assert that there is no such thing as a ‘UK experience’ in the housing field, spatial variations being increasingly important (Edwards, 2015). However, little research has focused on London’s housing in particular, and on why housing prices in London have grown so much faster than the rest of the UK in recent years (

Figure 2). For these reasons, as well as the salience of London in England’s economy, we chose to focus on London in this research, rather than England or the UK as a whole.

Our current understanding of London’s Housing crisis remains fragmented and qualitative. Most studies look at the issue through a narrow lens, and those which attempt to take a more integrated approach draw conclusions based on ‘mental simulation’, whilst it has been established that the human mind cannot be trusted with inferring the behaviours of complex systems with multiple feedback loops. This gap in the research motivates our choice of topic and methodology.

The next section presents a summary of the literature deemed most relevant to the causes and structure surrounding London’s housing. Section 3 builds a dynamic hypothesis formulated based on the literature, to be used in the remainder of this PhD research as the basis of a formal quantitative System Dynamics model. Finally, Section 4 discusses some initial implications of taking a systems thinking viewpoint towards the Crisis.

## 2. SUMMARY OF LITERATURE

Most commentators, including economist Kate Barker (2006), in her authoritative studies commissioned by the Bank of England, see the housing crisis as a crisis of shortage in supply. Belief in a shortage of supply is generally grounded in comparing current and projected yearly

numbers for household formations which exceeds the annual supply of new housing. The idea of a supply shortage being at the root of the housing crisis is further cemented by the fact that the supply of new housing has been declining since the 1970s (Figure 5).

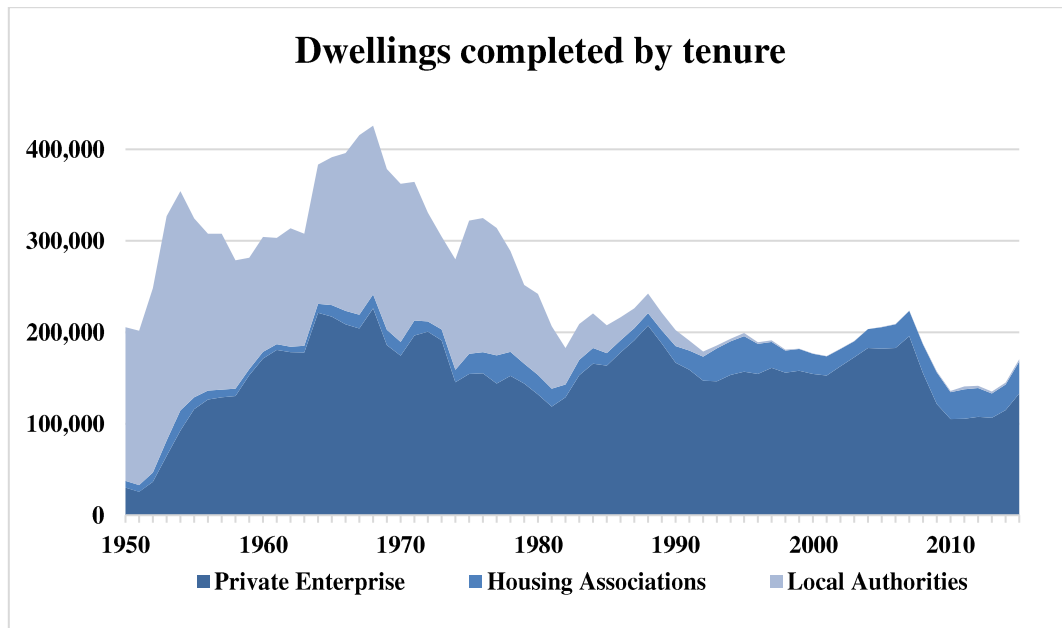


Figure 5 - Dwellings completed by tenure 1950-2015, UK. Source: DCLG LiveTable 241

More recently, however, a different discourse has been emerging, majorly led by Dorling (2014), which frames the housing crisis as a crisis of unequal distribution of housing, putting forth the idea that if housing space were equally distributed, Londoners would all be sufficiently housed. Gallent (2015) relates this unequal distribution to the over-reliance on allocation by an inflated market fuelled by over-investment. Edwards (2016) acknowledges the idea of unequal distribution as valuable insight, but believes that it is “scarcely the basis for a plan of immediate action or a quick fix since the inequalities involved are so deeply embedded. The use of royal palaces for homeless families is not in early prospect”(Edwards, 2016, p. 29).

Among the still dominant discourse that sees the shortage in supply at the epicentre of the problem, a prevailing stream of literature, championed by Hilber (2015) among others, blames the failure of planning in releasing sufficient parcels of land quickly enough as the root cause for the shortage in supply. This view is also taken by many in the housebuilding industry (White, 1986). Planners, however, firmly reject this assertion by claiming that in fact far more land is released than is actually being developed, pointing towards the notion of speculative land banking (White, 1986).

It is considered a wise business strategy to hold a stock of permissioned land as buffer against spikes in demand. Often, however, developers also engage in ‘strategic land banking’, i.e. speculation in the land market. It has been suggested that, often, this practice can amount to hoarding. It is difficult, however, to prove or disprove this claim, as the land market in the UK is known to be highly opaque, absent a comprehensive ‘cadastre’ that registers land holding, transaction, etc. (Edwards, 2015). Nevertheless, it should be alarming that some estimates suggest that up to 45% of ‘stalled’ sites’ in London are held by non-development firms (KPMG and Shelter, 2015, p. 58), who never intend to build new housing, but aim to reap windfall gains by engaging in speculative trading of land.

In investigating the causes for the housing shortage, KPMG & Shelter (2015) has drawn attention towards increasing consolidation in the housebuilding industry, signalling an increasingly less competitive environment. Competitive pressures are strong upstream for securing access to land, which is a major determinant of a firm's market share, but they are significantly reduced further downstream in the building market. Besides ramifications for standards and quality of new build accommodations, reduced competitive pressure on each building site also leaves the rate of building and releasing housing units at the discretion of developers, who tend to seek to maximise profit margins, as opposed to output volume (Adams, Leishman, & Moore, 2009). This is thought to put upward pressure on house prices.

In studies of the underlying causes of the Housing Crisis, less attention has been directed to the demand side of the picture. Moreover, where demand is mentioned, discussion tends to revolve around the growing number of households, both as a result of population growth and due to the households' shrinking size (KPMG and Shelter, 2015, p. 19). Gallent (2015), on the other hand, draws attention to the unappreciated role of inflationary growth in investment demand, both domestic and international, in pushing prices farther and farther beyond the means of would-be first-time buyers. May (2015) noted that in the ten year period between 2001 and 2011, 1.9 million new homes were built in England, while the number of new owner occupiers increased by only 22,000. In the same ten year period, 2.1 million new buy-to-let owners entered this profitable investment market.

Ironically, almost all government policies targeted towards mitigating the crisis are adding fuel to the fire by feeding demand. For instance, the recent Help to Buy scheme aimed to 'boost housing supply' via stimulating demand through an equity loan scheme for first-time buyers, and a mortgage guarantee scheme which applies to existing housing (Archer & Cole, 2014; Hilber, 2015). Help to Buy has been almost unanimously criticised for contributing to the rise in prices (Edwards, 2016; Hilber, 2015), and denounced by the harshest critiques as 'homes for votes' or 'help to bubble' (Dorling, 2015). Another important policy which essentially promotes housing as an investment vehicle is Housing Benefits for those unable to afford their rents, which has been said to be effectively subsidising windfall gains for landlords (Edwards, 2015).

Rising rents are threatening the viability of economic firms in London, by raising the bar on wages that employers must offer in order to attract necessary labour (KPMG and Shelter, 2015, p. 47). In addition, rents eat into household savings (Shelter, 2013), reducing available funds for investment in productive sectors of the economy. On top of that, whatever funds available tend to be poured mostly into the inflated housing market, further depriving non-housing firms of investment (Gallent, 2015). This trend makes the economy reliant to a large extent on rising house prices, and makes it vulnerable to the inherent volatility of housing markets. This concern is in line with Forrester's thesis in *Urban Dynamics*, which states that a city's economic vitality depends on a healthy ratio of housing to businesses (Forrester, 1969, p. 118).

Montgomerie and Büdenbender (2015), in an incisive critique of the UK's housing-based welfare strategies, argue that the financialisation of housing in the UK is a unique set of political and economic circumstances that cannot be repeated, and therefore, current gains from residential housing are a one-off wealth windfall to particular (lucky) groups within society. The temporal and spatial limits of gains from residential housing mean that the same conditions cannot be repeated (often enough) in the way required for residential housing to provide a generalizable welfare function. Moreover, housing-based welfare has created new intergenerational inequalities and an enormous debt overhang that continues to plague the British economy (Montgomerie & Büdenbender, 2015).



So far the investigated dynamics were supply-side loops. Figure 7 adds to this more mechanisms occurring on the demand side. The higher *investment demand* and the purchase of more and more houses as investment vehicles, builds up a larger and larger *stock of investment housing* that can be an ideal collateral for applying for more *housing loans* (Gallent, 2015, p. 9). Higher *return on housing investment* also instigates an even higher availability of *housing loans*. This expanding possibility helps *investment demand* grow further.

On the bottom-left corner of the diagram, higher *house prices* push up *rents* and higher *rents* push up *house prices*, coupling the two together in a tight and crippling union. The outrageous growth in *house prices* has *priced out* an increasingly larger proportion of the population out of the buying market and into the rent market, pushing up *rents*. Higher *rents* further improve *return on housing investment* and further stimulate *investment demand*.

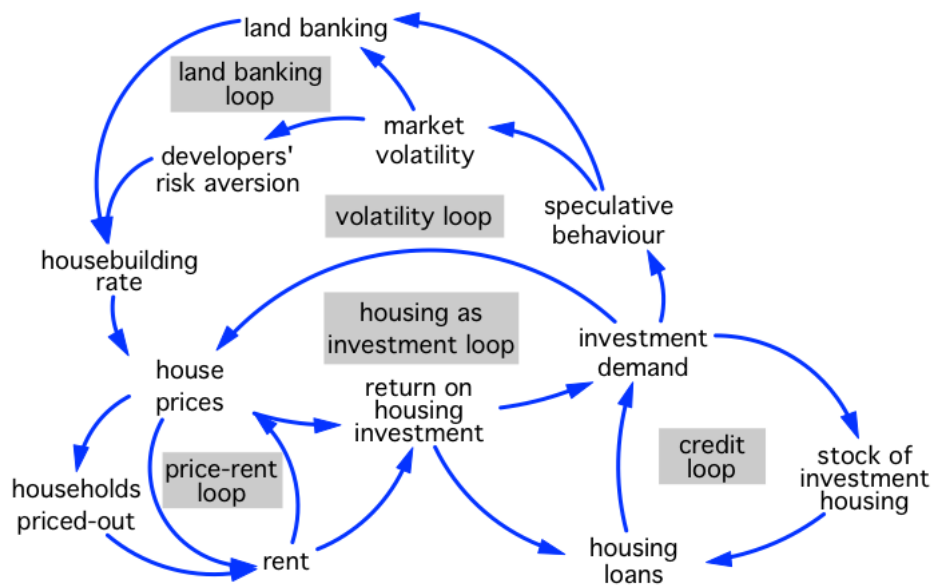


Figure 7 - London's housing crisis CLD, credit and price-rent loops added

Back to the supply side, *land prices* are also very tightly linked to *house prices* (Figure 8). From the estimated selling prices of houses to be built on a particular site, the costs of production and the profit margin are deducted, giving the ceiling price that the builder would pay for land (KPMG and Shelter, 2015, p. 34; White, 1986), making land prices dependent on house prices. This process is known as 'residual land pricing'. As the single most costly input to housebuilding, house prices are also majorly influenced by land prices.

Planning authorities in the UK tend to release land in large parcels. This, together with rising prices of land, increasingly drives smaller developers out of business, leading to *industry consolidation*. *Market volatility* is also known to be a driver of consolidation in the housebuilding industry. Larger developers are better-resourced and more prone to engage in



strategic *land banking* (White, 1986, p. 108), aggravating supply constraints and house price inflation.

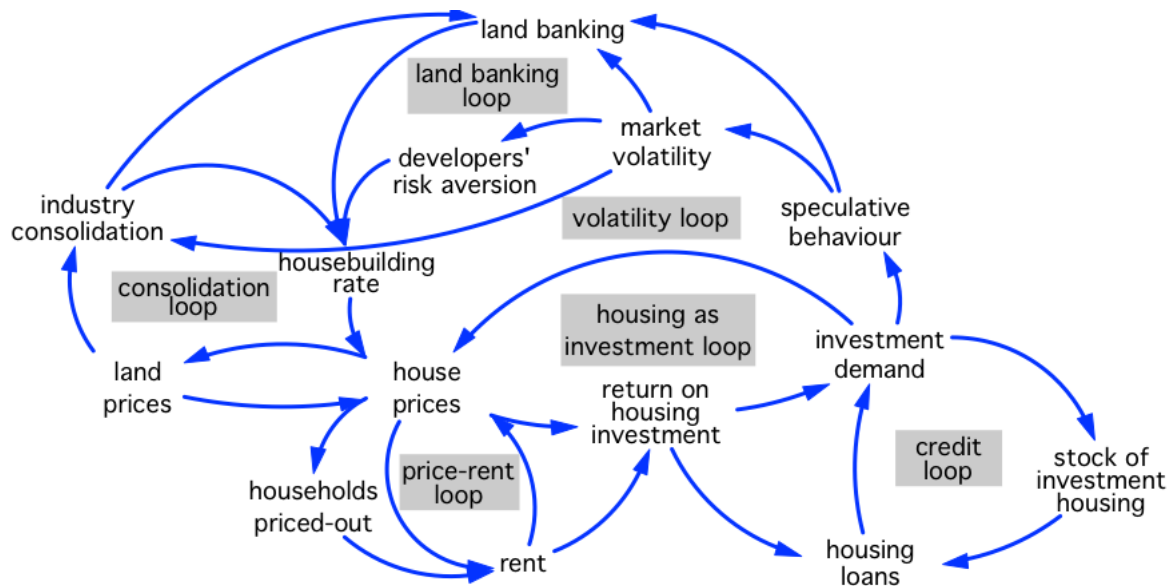


Figure 8 – London’s housing crisis CLD, consolidation loop added

The feedback loops that emerge from the description above are all reinforcing loops. The hypothesis is that all these reinforcing mechanisms have formed a self-accelerating engine of growth, with soaring *house prices* and *investment demand* at its centre; a formidable machine that seems to have a ‘will’ of its own. In the absence of stabilising forces, such mechanisms tend to generate exponential growth (as seen in *house prices*, e.g. Figure 3). Of course, in the real-world, there are always counteracting forces and balancing loops that hold growth processes in check, and eventually bring growth to a halt. A couple of such balancing forces are added to the CLD in Figure 9. An increase in rents increases the cost of doing business for London businesses both directly, and indirectly, through putting an upward pressure on wages. Moreover, in an example of the ‘success-to-the-successful’ archetype, the success of the housing sector has increasingly deprived productive sectors of the economy of much needed loans. A scenario can be envisioned where, as a result of increasing rents as well as decreasing availability of bank loans, firm competitiveness in London would have declined to such an extent that the city’s economy would start to stagnate and perhaps decline. Employment would slow down, negatively impacting on households’ disposable income. The inflating burden of interest to be paid on housing loans brings disposable incomes further down. Demand for housing would stagnate and rents would stop growing. It is at that point where more and more landlords would face difficulty paying back their mortgages, both because of the economic slowdown and due to the subsequent slowdown in rents. Consequently, arrears and defaults on housing loans would pose a threat to the financial sector, making housing loans riskier and scarcer, which further brings down demand for housing. Any potential subsequent fall in prices could cause panic and over-reaction in the market, setting in motion every single one of the reinforcing loops described in the above diagram, this time in the opposite direction. In short, the ‘ball’ that had been so far rolling uphill would reach the peak and start rolling down while gaining potentially devastating speed, generating an ‘overshoot and collapse’ pattern of behaviour, also known as a ‘boom and bust’ in the context of housing markets. Similar dynamics have happened in the past, such as the one causing the global financial crisis towards the end of the past decade. In Sterman’s words (1986, p. 116), “in the extreme, the

debt/deflation spiral can cause the collapse of the banking system and the economy. The greater the degree of speculation during the expansion, the more likely is a panic during the downturn”.

The concern is that London’s housing context comprises all necessary ingredients for repeated boom and bust cycles, i.e. reinforcing mechanisms coupled with balancing loops involving delays, and that as seen historically, such dramatic boom and bust patterns are not only likely, they are in essence structurally embedded and almost inevitable.

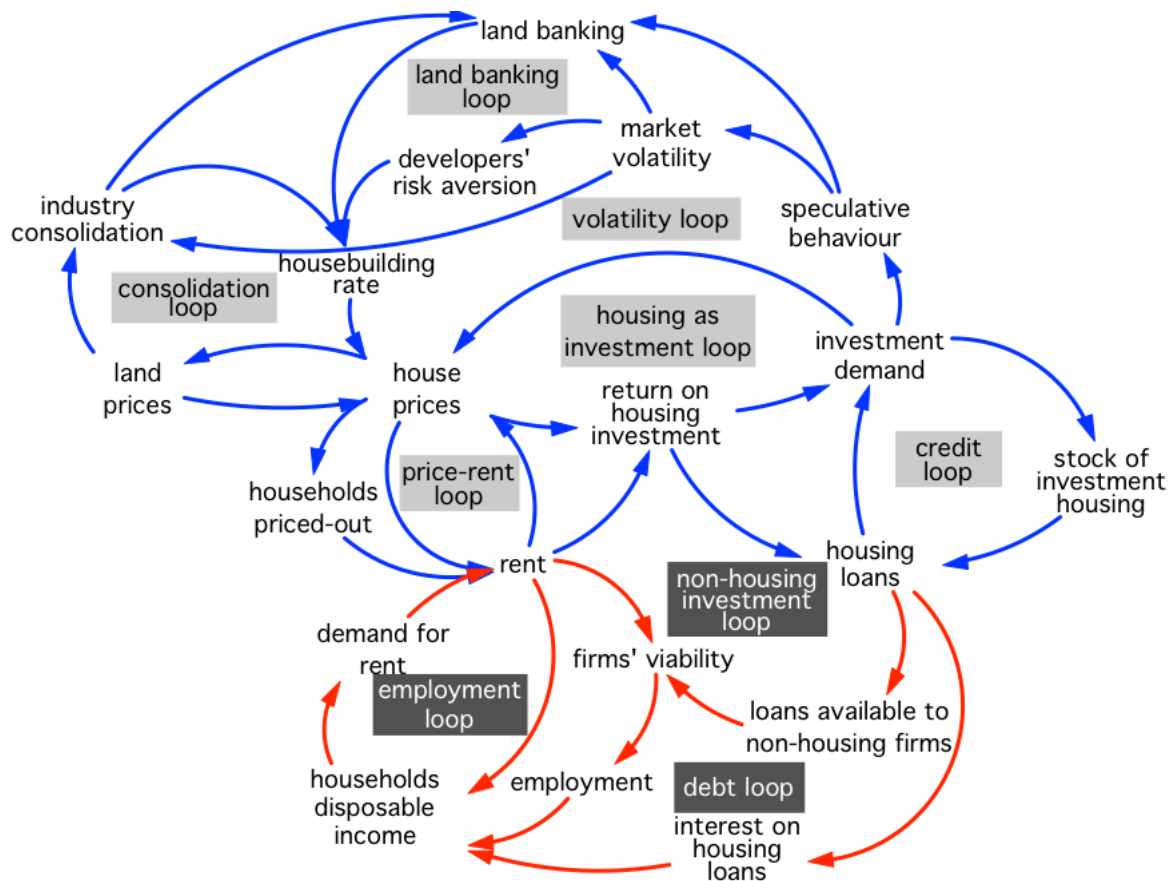


Figure 9 - London's Housing Crisis, full CLD including balancing loops

#### 4. DISCUSSION

Looking at the housing crisis from the structural perspective described above seems to have a number of immediate implications. Firstly, in line with what several authors have pointed out (Edwards, 2015, 2016; Gallent, 2015; KPMG and Shelter, 2015), the Crisis does not have an ‘easy’ solution and cannot be approached from one single angle. Any battle for improving the affordability of housing in London must inevitably be fought on a number of well-coordinated fronts. Secondly, despite researchers as well as actors within the system frequently engaging in a ‘blame game’, the Crisis does not appear to be the ‘fault’ of any single actor/entity, be it the planners, the builder, the landowners or the investors. All things considered, every single actor seems to be acting quite rationally within their own scope, at least from a short-term perspective. Rather, it is the ‘system’ that is broken (Gallent, 2015), and if the Crisis is to be tackled, it is the ‘system’ that needs to be re-designed. Lastly, as empirically demonstrated (Sterman, 1989), no human mind can correctly simulate the behaviour resulting from changes made to such a complex system, consisting of many feedback loops. That is the reason why the System Dynamics approach advocates formal quantitative modelling of qualitative hypotheses for rigorous analysis.

Within the systems literature, one of the widely known systems archetypes is *shifting the burden* (Figure 10) (Senge, 1990, Appendix 2). This archetype describes a situation where a problem symptom appears, presenting the decision-maker with two possible courses of action: A ‘*symptomatic*’ solution which relieves the symptom temporarily, but does not address the underlying problem, and a *fundamental* solution that does address the underlying problem, but takes significantly more time and resources to implement. In this situation, it often happens that the decision-maker keeps applying the ‘*symptomatic*’ solution, which not only leaves the underlying problem unaddressed, but it also might exacerbate the problem due to potential long-term *side-effects*.

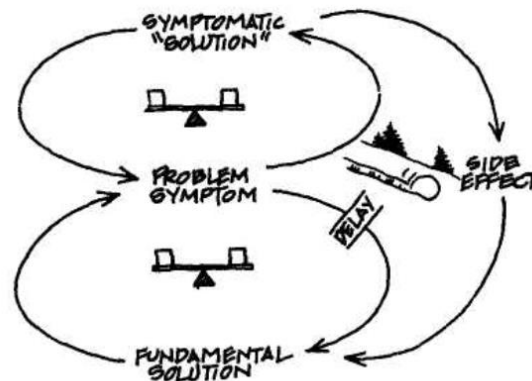


Figure 10 - The 'Shifting the Burden' systems archetype. Borrowed from Senge (1990)

A similar dynamic seems to be happening within London’s (and more generally the UK’s) housing context. House prices are rising outside the reach of more and more households, leaving them at the mercy of the private rented sector, with rising demand and rising rents. Part of the government’s solution to this is demand-side subsidies (Help to Buy in the sales market and Housing Benefit in the rent market) in order to keep house prices and rental costs affordable by insulating them from market forces (Archer & Cole, 2014). For some observers, “there is obvious irony in reacting to a demand-side housing crisis by feeding demand” (Gallent, 2015, p. 11).

A continuation of the current government policies might lead either to an extreme inadequacy of rent subsidies, or a soaring benefit bill that would soon become an unbearable burden to the public purse. This ‘side effect’ (Figure 11) depletes resources that could have gone towards a more fundamental solution to the Crisis, such as for instance weaning the economy off its reliance on house price growth and towards investments in productive sectors.

In addition, current public discourse seems to be dominated by a call for ‘making more affordable housing’ as a remedy to the dysfunctional market (Gallent, 2015). This can be seen as another ‘symptomatic’ solution being ardently implemented, while the more fundamental problem of ‘making housing more affordable’ seems to be painstakingly swept under the rug. As Gallent (2015) concludes, “there is no real will - at large or political - to change anything. Whenever responses to the ‘Housing Crisis’ are outlined, they are always piecemeal and restricted to what can be ‘realistically’ achieved in ‘this parliament’”. In the words of Christian Hilber (2015, p. 2), “substantive reforms could solve the Housing Crisis, but politicians of all stripes back away from such reforms out of fear of being demonised by the vested interests. Instead, proposed policies tend to tackle the symptoms – rather than the causes – of the UK’s Housing Crisis”.

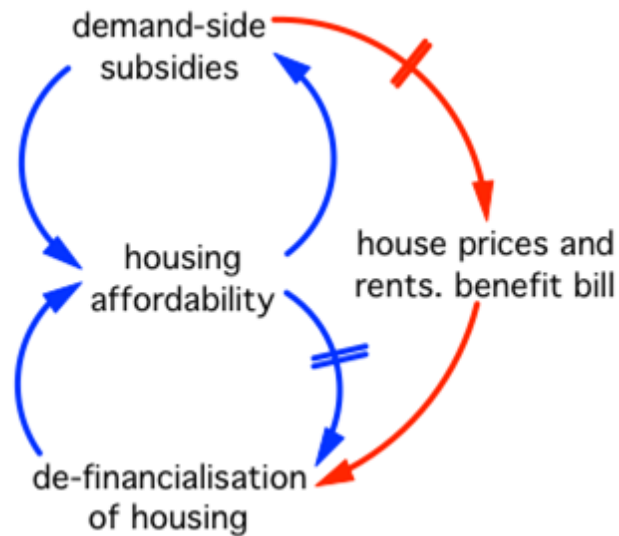


Figure 11 - *Shifting the Burden* in the context of UK housing policy

## 5. LIMITATIONS AND FUTURE RESEARCH

As mentioned earlier, this paper results from the first year's work on a PhD, spent on reviewing the literature and capturing it in the form of a causal loop diagram. The natural next step, according to the System Dynamics 'standard method' (Hines, 2004), is to formally model the described qualitative theory in a quantitative SD model, which is at the moment in development.

The model being constructed in this PhD will take an aggregated point of view, looking at averages and sums across London, without spatial disaggregation among various regions, property classes, income classes of owners, or under-occupied versus overcrowded dwellings. Such disaggregations lie outside the scope of this project, as it will not be possible to have the breadth that we seek in a systemic holistic study *as well as* the depth implied by including such heterogeneities.

The domain of the problem of housing is so vast that an abundance of potential paths for building on this research will present itself once it is completed. Two examples of potentially interesting topics for future research are (a) further exploring the interlinkages between housing and the economy at a macro level; such linkages are likely to be under-represented in our model. And (b) adapting the model resulting from this research to comparable metropolises, e.g. New York or Tokyo, to investigating to what extent the same underlying structure can replicate housing trends in those contexts

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