

# Econometric modelling or institutionalism? A review of the main approaches in analyses of housing regulations

Hasniyati Hamzah

*Department of Estate Management, Faculty of Built Environment, University of Malaya, 50603 Kuala Lumpur, Malaysia*

*hasniyati@um.edu.my*

The powerful rhetoric of western housing literature examining the effects of regulations on housing provision has had a major influence on the housing policies of developing countries. The mainstream literature adopts neo-classical econometric modelling as the main approach in understanding how housing provision is affected by regulations. Oftentimes, such analyses would reach an unfavourable conclusion regarding the inflationary and restrictive effects of regulations and consequently call for deregulation. Nevertheless, the research approach in the mainstream literature has overlooked the roles and behaviours of housing agents involved in the actual creation of urban landscapes. In other words, these actors and their social interactions within the regulatory environment have been put in the proverbial 'black box'. Aiming to obtain deeper understanding on the effects of housing regulations, other researchers have proposed an alternative approach that opens this processual 'black box' to explain, rather than generalise the effects of regulations. Using institutionalism as the basis for analysis, this second group of literature provides a deeper explanatory analysis of housing regulations. This paper's contribution to existing literature lies not only in the systematic review of relevant housing regulation literature, but also in suggesting an alternative approach to understand the effects of housing regulation.

**Keywords:** *housing regulations, housing literature, research approach*

## 1. INTRODUCTION

The powerful rhetoric of western housing literature examining the effects of regulations on housing provision has been influential in determining the housing policy of developing economies. Since 1980s, a steady stream of research on housing regulations have emerged from countries such as the UK and the US and international organisation such as the World Bank. These studies have been influential in guiding policymakers in developing economies; the World Bank has been invited for research and consultancy for governments of Malaysia, India and Thailand (see for instance Bertaud & Malpezzi, 2001; Dowall & Clarke, 1996; Malpezzi & Mayo, 1997; Mayo & Sheppard, 1996).

According to Adams (2008), the studies that formed the mainstream literature typically employ econometric modelling with underlying neo-classical economic assumptions of market efficiency, unitary price and rational behaviour to predict impacts of regulations on the price and quantity of housing. Oftentimes, the analyses would produce unfavourable conclusions regarding the inflationary and restrictive effects of

regulations. Nevertheless, the main criticism of this approach has been its neglect of institutional behaviour and market operations (Keogh & D'Arcy, 1999). In other words, the mainstream literature has 'black-boxed' institutions (and organisations) and their social interactions in the regulatory environment. Thus, whilst providing a valuable approximation of the effects of regulations on housing provision, the basic mainstream approach is seen as producing partial results. Ball, Lizieri, & Macgregor (1998) discuss how the assumptions of perfect competition and profit maximisation can be defeated in practice due to different motivations, behaviours and information levels among firms. Other authors (for instance Adams, 2008) cited an argument of property market disaggregation to show the vulnerability of the modelling exercise.

To address these critiques, other researchers have employed alternative approaches to open the 'black box' of process to explain, rather than generalise the effects of regulations. Using institutionalism as the basis for analysis, this second group of literature has been instrumental in uncovering how regulations have shaped the provision of housing in practice.

The institutional approaches used by this strand of literature enable the exploration and explanation, rather than quantification of housing regulation effects. Thus, the alternative methodology complements the knowledge provided by the mainstream approach of econometric modelling.

This paper involves the rigorous exercise of compiling an extensive array of literature related to housing regulations and extracting and tabulating the approach and results of each study. Its main contribution to existing literature lies not only in the systematic and extensive review of relevant housing regulation literature, but also in presenting and reviewing two main complementary approaches in understanding the effects of housing regulation. As such, it compares the capacity and suitability of the two main approaches.

## 2. LITERATURE REVIEW

### **Housing regulation as a form of state intervention**

State intervention mechanisms may be deployed to pursue specific urban policy objectives. State interventions are *direct* and *indirect* inputs from the public sector, taking the form of subsidies, taxes, regulation and other interventions (Hannah, Bertaud, Malpezzi, & Mayo, 1989). Tiesdell and Allmendinger (2005) identify four broad policy interventions in the land and property market aimed at shaping, regulating, stimulating and building the capacity of the market. In terms of market regulation, the state interfered to regulate or control market actions and transactions, ensuring some consideration of externalities and the public interest.

The government may intervene in the housing market to arrest or correct externalities resulting from market activities. Development activities in the housing market may require some tempering from the state as it involves finite economic resources. Healey (1998) suggests that development activity and public policy is linked via resources and regulation. The public sector in providing infrastructure, investment and regulatory stability helps facilitate the capacity of the housing industry (Healey, 1998).

The cumulative “housing regulations” may be sub-divided into development control, planning obligation and housing standards. Housing development control such as planning,

land and environmental laws can protect health, safety, or welfare (Adams, 2008; Cheshire & Sheppard, 1997, 2003; Dowall, 1992), preserve the environment (Adams, 2008; Dowall, 1992) and improve energy conservation (Adams, 2008; Downs, 1991). Planning obligations convert benefits accrued to landowners caused by the planning system into public goods. This ‘betterment tax’ (Monk, Short, & Whitehead, 2005) involves mandating a percentage of low-income housing in a new development, such as the low-cost housing quota in Malaysia. Finally, housing standards can ensure acceptable physical and social standards (Malpezzi & Mayo, 1997).

### **Consideration of housing market characteristics**

Policies alone do not create the regulatory environment that governs the activities of market actors. The implementation of housing regulations is mainly determined by the composition and characteristics of the housing market alongside the organisational arrangements of the policy implementers (Adams, 2008) and social interactions between actors (Ball, 1998, 2003, 2010; Ball et al., 1998). Evans’s (1999) analysis of the extensive literature on zoning, conservation areas, growth controls, planning gain and impact fees resulted in an observation that non-uniform effects, at both the micro and macro levels. This led to a conclusion that the nature of the housing market is the main shaper of regulatory outcomes.

#### *Different dimensions of housing provision*

According to Ball (1986, 2003, 2006), housing provision involves aspects of production, consumption and exchange. Developing upon Ball’s ideas, Burke & Hulse (2010) view production as “concerned with the nature and techniques of land ownership, land assembly and housing production”; consumption as “concerned with the forms and methods by which households consume housing”; exchange as “concerned with the practices and institutions which facilitate the sale, renting and use of housing” and further add a fourth housing provision dimension (i.e. management) which is categorised as “the practices by which the housing system is managed, including policy and planning at all levels of government”. Housing regulations may affect one or a combination of these aspects of provision.

### *Myriad of actors*

Housing provision involves a network of actors that play their own roles whilst displaying distinct economic behaviours in line with their organisational objectives (Ball, 1986, 2003, 2006, 2010). Their roles and degree of involvement are determined by the specific housing type and tenure (Ball, 1986). Generally, these actors include planners, developers, various government departments, financial institutions, land owners, building contractors and house buyers or renters (Ball, 1986). Significantly, local variations of the housebuilding industry may occur between and within countries due to potential economies of scale, market factors, information asymmetries, regulation and risk which in turn will affect types of housing outcomes locally (Ball, 2003).

### *The production sphere and the land market*

Production is the most visible aspect of housing provision sphere. In his various work, Ball (1986, 2003, 2006, 2010) showed how housing development is shaped by institutional forces at the national, regional and local levels. Among others, the supply of developable residential land is will determine the construction rate of new housing units (Adams, 2008). The supply of residential land may be directly traced to the permissiveness and efficiency of the planning system (Bramley, 1993, 1999; Bramley & Leishman, 2005a, 2005b; Leishman & Bramley, 2005). More specifically, Evans (1999) divided government intervention in the land market into development control and growth control, taking different forms from country to country, and even within countries.

### *Housing sub-markets*

In the past, policymakers tended to assume a unitary housing market at the national level. A unitary market means land supply restriction in one area can be substituted elsewhere, whilst a segmented market means that housing demand has to be completely met locally (Monk & Whitehead, 1999). Recent developments in property studies have confirmed disaggregation within the housing market due to institutional forms between and within countries (Ball, 2003; Keogh & D'Arcy, 1999; McMaster & Watkins, 2006). Housing sub-markets may be caused by technological changes, factors of production, price and information costs, together with changes in idea, norms and values

(Adams, Watkins, & White, 2005), with each regional submarket having distinctive procedures (Adams, 2008).

### **Epistemological considerations in housing regulation studies**

The housing market involves tangible and intangible institutions that interact and shape each others' operations. The mainstream approach of neo-classical econometric modelling of land and housing market phenomena has a tendency for "institutional neglect" (Ball, 1998, p. 1515), whereas its positivist-deductive approach employs assumptions in achieving its conclusions. As observed by Whitehead and Yates (2009, p. 2), the mainstream modelling approach generally strives to simplify and summarise whilst working under "well-defined assumptions", in order to "identify significant relationships, to clarify the interdependences between determinants and to measure their importance in particular contexts" at the cost of fully exploring processes in detail.

In examining the effects of housing regulations, the mainstream modelling approach tends to neglect of the social relations in housing provision, whereas policy studies seek for "an understanding of the networked array of economic, political and social-cultural forces that govern them" (Satsangi, 2011, p. 400). The housing provision framework is characterised by "pre-existing institutional practices, market conditions and government policies" (Murphy, 2011) which may influence the way housing regulations are negotiated and enforced. The housing market is more complicated than what models represent; property development is a "messy" business within which lies "the mysterious force of power" that constantly influence development processes, whilst the built environment is actually "steeped in history and local difference" that defeats assumptions of a unitary effect of policy at the regional level (Ball, 1998, p. 1501).

From an epistemological point of view, an institutional approach in housing studies recognises that the habits or behaviours of market actors shape housing market outcomes (Ball, 1998). These habits or behaviours are complex forces that may frustrate assumptions of a unitary market or price, and other assumptions including perfect competition and rational behaviour of the mainstream neo-classical economics paradigm (Keogh & D'Arcy, 1999).

Some of these forces may take place within the macroeconomic framework (Ball, 2003), whilst some forces are produced by individuals or firms responding to opportunities and constraints at the micro-level (Ball, 2010). These forces are generated by codifiable habits which institutional frameworks permit to capture for examination (Hodgson, 2006).

### 3. METHODOLOGY

The main aim of this paper is to evaluate the efficacy of the main approaches used in examinations of housing regulations. To achieve this objective, literature on housing regulations were gathered from various journals, books and government publications. This paper only includes analyses of housing regulations that directly affect housing provision because of the difficulty in establishing the causal link of regulations that indirectly affect housing (e.g. labour regulations, historic preservation regulations, wildlife preservation regulations and rent controls). After the meticulous selection process, next the approach and findings were extracted from each literature.

The results were tabulated into Table 1 (: Selected mainstream analyses in studies of housing regulations) and Table 2 (: Selected institutional analysis of housing issues). As can be seen, a wider net was cast for literature under the alternative institutional approach due to its nature as a secondary methodology of choice. On the other hand, the selection process was tighter for literature under the neo-classical econometric modelling as this methodology has appreciated in both usage and support by mainstream housing studies since the 1970s.

### 4. RESULTS

The analysis revealed two main groups of housing regulations literature; the majority (represented by Table 1) adopting the neo-classical econometric modelling as its main approach whereas the second group (represented by Table 2) employing institutionalism as its main methodology. Both groups of literature emerged at a similar point in time, yet in the beginning neo-classical econometric modelling enjoyed a “higher mileage” compared to institutionalism. It is not until recently that housing researchers revisited institutionalism to explain some phenomena which were unsatisfactorily explored in modelling exercises.

The mainstream literature was produced by researchers from the UK, US and the World Bank. As summarised by Table 1, the research topic revolved around the price and supply effects of planning and development control procedures. The results column indicates that most of the studies generally reported a positive correlation between those regulations and increased price and reduced demand. 75% of the literature analysed in Table 1 represent this type of study, whereas the remainder show the effects of regulations on non-price and non-quantity outcomes such as urban sprawl and amenities.

In particular, the World Bank housing researchers have been modelling the price and quantity effects of housing regulations since the 1980s. The World Bank has had a dominant influence over housing policy in developing economies since the 1970s (Arku & Harris, 2005). The organisation put forth a powerful argument for the state’s increased investment in housing; housing construction was shown to possess a significant propensity to boost the national economy. In Table 1, it can be seen how the World Bank has portrayed housing regulations as having restrictive and inflationary tendencies on housing supply. A number of World Bank researchers have expressed this conclusion (see Bertaud & Brueckner, 2004; Bertaud & Malpezzi, 2001; Dowall & Clarke, 1996; Hannah et al., 1989; Malpezzi & Mayo, 1997; Mayo & Sheppard, 1996).

Inevitably, deregulation was the recommendation of the mainstream studies, aligning with the *laissez faire* doctrine prevalent in the 1980s. Unfortunately, as shown in the case of Chile and the Phillipines, the deregulation of the housing market led to disastrous results (Keivani & Werna, 2001). These real life cases indicated some vulnerability in the conclusion of the mainstream modelling approach. Although it was assumed that less regulation would affect in reduced housing costs and increased housing volume (thus lessening pressure on housing prices), developers adopt various strategies in real life, negating the assumption of rational behaviour and leading to the opposite of the intended effects.

On the other hand, the institutional approaches used in studies summarised by Table 2 set out to *explore* and *explain* the operations and resultant phenomena arising from housing regulations.

**Table 1: Selected mainstream analyses in studies of housing regulations**

Author	Journal/Book/Report	Country/Organisation	Studied phenomenon	Approach	Results
Pollakowski & Wachter (1990)	Land Economics	US	Impact of land use control	Econometric modelling	Land use control contributes to increased housing prices.
Downs (1991)	Housing Policy Debate	US	Impact of building codes and zoning controls	Nation-wide survey	Increased housing prices.
Bramley (1993)	Urban Studies	UK	Impact of planning on housing supply	Econometric modelling	Low supply elasticity found, relaxed planning only marginally reduce housing prices.
Mayer & Somerville (2000)	Regional Science and Urban Economics	US	Impact of land use regulations on housing development	Econometric modelling	Restricts housing supply and lower house price elasticities.
Mills (2005)	Real Estate Economics	US	Impact of density control on welfare	Econometric modelling (Exponential density function)	Density restriction is urban areas increase commuting costs, urban sprawl and housing prices.
Quigley & Rosenthal (2005)	Cityscape: A Journal of Policy Development and Research	US	Impact of land use regulations	Review of relevant literature that used econometric modeling approach from 1968 to 2003	In general land use regulations increase housing prices but to varying degrees.
Schill (2005)	Cityscape: A Journal of Policy Development and Research	US	Impact of regulations on housing development	Review of literature on impact of housing regulations	Incomprehensive examinations of regulations and weak causal link between regulations and prices.
Ball, Allmendinger & Hughes (2009)	Journal of European Real Estate Research	UK	Impact of planning on housing supply	Measuring planning process time	Planning delays cause lower supply elasticity.
Bramley (1998)	Environment and Planning	UK	Measuring local planning	Econometric modelling	Affluent areas have a more restrictive planning.
Bramley (1999)	Environment and Planning	UK	Effects of planning policy on land supply	Econometric modeling	Relaxed planning would achieve less price reduction than strict planning would increase prices.

Author	Journal/Book/Report	Country/Organisation	Studied phenomenon	Approach	Results
Bramley & Leishman (2005a)	Planning, public policy & property markets	UK	Impact of planning on local housing prices, supply and net migrations	Econometric model (Simultaneous local demand-supply system)	Positive correlation between new construction, housing land supply and in-migration. Increased output also found to increase housing prices.
Bramley & Leishman (2005b)	Urban Studies	UK	Impact of planning in 'two-speed Britain'	Econometric model (Simultaneous supply-demand system for owner-occupier housing in a local market area)	Policy changes affect economically opposite areas differently.
Cheshire & Sheppard (1989)	Urban Studies	UK	Impact of development control on welfare	Econometric modelling (Hedonic pricing)	Higher housing price and hamper upward mobility.
Cheshire & Sheppard (1997)	Research Papers in Environmental and Spatial Analysis No. 42.	UK	Impact of development control on welfare	Econometric modelling (Hedonic pricing)	Positive net benefits in terms of contained urban sprawl but favouring higher income groups.
Cheshire & Sheppard (2002)	Journal of Urban Economics,	UK	Impact of development control on welfare	Econometric modelling (Modified demand structure)	Negative net benefits of strictly planned urban setting.
Cheshire & Sheppard (2003)	The property tax, land use and land use regulation	UK	Comparing development taxes with regulations	Econometric modelling (Hedonic pricing)	Both taxes and regulations display same results in containing urban sprawl.
Bertaud & Malpezzi (2001)	Journal of Housing Economics	World Bank	Impact of land use regulation on costs and benefits of housing in Malaysia and Korea	Bertaud Model (cost-benefit model)	Higher formal housing costs.
Hannah, Bertaud, Malpezzi, & Mayo (1989)	Malaysia: The housing sector; getting the incentives right: World Bank Sector Report	World Bank	Impact of government intervention, including regulations, on Malaysian housing	Bertaud Model (cost-benefit model)	Higher formal housing costs.
Malpezzi & Mayo (1997)	Land Economics	World Bank	Impact of land development standards	Cost-benefit model	Reduce housing density and increase housing costs.
Mayo & Sheppard (1996)	Journal of Housing Economics	World Bank	Impact of regulatory environment on elasticities of housing supply and price	Econometric modeling	Strict environment results in low supply elasticity and vice versa.

Source: Author's analysis

**Table 2: Selected institutional analysis of housing issues**

Approach	Authors	Journal/Book/Report	Country/Organisation	Issues in property research
Structure and agency	Healey (1990)	Regional Studies	UK	Land development process
	Healey (1991)	Journal of Property Research	UK	Land development process
	Healey (1992)	Journal of Property Research	UK	Land development process
	Healey & Barrett (1990)	Urban Studies	UK	Land development process
Behavioural analysis	Monk et al. (2005)	Planning, public policy & property markets	UK	The effectiveness of S106 planning obligation in producing affordable housing in south England.
Structure of provision	Ball (1986)	Housing Studies	UK	Housing provision
	Ball & Harloe (1992)	Housing Studies	UK	Housing provision
	Ball (2003)	Urban Studies	International	Housebuilding industry
	Crook & Kemp (2002)	Town Planning Review	UK	Housing Investment Trusts
	Satsangi (2005)	Journal of Rural Studies	UK	Structure of rental housing provision
	Burke & Hulse (2010)	Housing Studies,	Australia	Understanding how the Australian housing system shapes housing affordability problems
Network approach	Doak & Karadimitiou (2007)	Urban Studies	UK	Economic and social aspects of property redevelopment (case study of Paddington, London)
Institutional organisation	van der Krabben & Lambooy (1993)	Urban Studies	The Netherlands	Spatial and economic structures in property development process.
Cultural approach	Guy & Henneberry (Guy & Henneberry, 2000, 2002)	Urban Studies	UK	Integrating social and economic considerations into property investment decisions
Institutional relations: Partnership theories or 'growth coalition'	Han & Wang (2003)	Urban Studies	China	Institutional structure of a property market in Chongqing, China

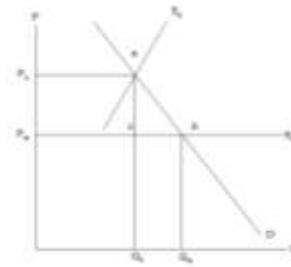
Source: Author's analysis

By understanding the actual roles, perceptions and behaviour of market actors and also interactions of pre-existing institutions with housing policy, it is argued that a more accurate account of the operation of the property market can be presented. This enables policymakers to tailor housing policies accordingly so that resources may be more efficiently allocated. Notwithstanding this advantage, institutional approaches often neglect to quantify the effects of regulations, e.g. how much has the interaction between two institutions influence the effect of certain regulations? In this sense, institutional approaches may not satisfy the objectives of some specific research.

## 5. DISCUSSION: COMPARING THE TWO MAIN APPROACHES

In analysing housing regulations, the main approach within the mainstream literature is econometric modelling, found in earlier literature from the US, UK and World Bank researchers (Keivani & Werna, 2001). The core of mainstream studies of housing regulations is situated within the neo-classical economy paradigm. A key concept of this paradigm is that demand and supply are assumed to automatically adjust to any exogenous changes and reach a new equilibrium in the long run. The 'automatic self-functioning system' within the property market involves assumptions of property market efficiency, characterised by agents' rational behaviour, perfect competition, perfect knowledge and no transaction cost (Keogh & D'Arcy, 1999).

Whitehead, et al.(2010) set out a typical model used by this tradition in explaining the effects of regulations on the housing market. Housing supply under pure market conditions is presumed to be perfectly elastic ( $S_M$ ). Regulation causes inefficiencies, increases price and constrains land supply, resulting in an inelastic housing supply ( $S_R$ ). According to this theory, the price under a regulated market ( $P_R$ ) is higher than that in an unregulated market ( $P_M$ ) whilst producing a lower quantity ( $Q_R$ ) compared to an unregulated market ( $Q_M$ ). The 'deadweight loss' caused by regulations is represented by the triangle *abc*. Consequently, this strand of literature calls for deregulation of the housing market to reduce housing costs (ergo housing prices) and increase housing supply.



Source: Fig. 3.1, (Whitehead et al., 2010)

**Figure 1: The impact of regulation - Market supply elastic**

In practice, the two assumptions made under modelling exercises can be difficult to sustain (Ball et al., 1998). The assumption of perfect competition among organisations in the property market is problematic as these actors tend to adopt strategic or opportunistic behaviour in their decision-making (Ball et al., 1998). For instance firms can decide not build to maximum allowed density on a site to reap a premium whilst planners who want to encourage more affordable housing can choose to expedite its progress. The assumption of profit-maximising amongst firms may be frustrated by limited information, whereby decision-making is being based on bounded information (Ball et al., 1998). An example of non-maximising behaviour is when firms opt to maximise sale instead of profits.

Analyses on the effects of actual deregulations of land and housing markets have highlighted the necessity of care and diligence when making adjustments to housing policy as the effects may be both substantial and irreversible. The cases of Chile and the Phillipines serve as a warning of how the aims of housing market deregulation can backfire due to strategic, instead of rational, behaviour displayed by developers. Evidence from these two countries attributed the soaring house prices mostly to unchecked speculative behaviour of private developers in search of increased profits. In both cases, relaxed regulations over land and housing markets and low-income housing, together with lenient building standards, not only led to the underprovision of housing for the urban poor, but also increased general house prices. Furthermore, regulations may be a less important cause of house price inflation compared to other factors such as scarcity and administrative failure factors (Whitehead et al., 2010).



Bearing in mind the characteristics of the housing market (i.e. institution-driven), the limitations of economic models in explaining institutions in housing policy examinations and the reports on the effects of housing deregulation, the second group of literature on housing regulations offers an alternative to the mainstream approach. This second group of literature employs institutionalism as the main framework to analyse housing regulations. In the context of housing markets, the implementation process of housing policy involves the conveyance, interpretation and negotiation of policy between a number of actors within pre-existing legal, political and social environments. Thus, the institutional approach argues that institutional dynamics in the policy environment are the force that shapes supply elasticity rather than the policy itself.

Where the mainstream economic modelling approach has the tendency to keep these institutional dynamics unexamined in the 'black box' of processes, institutional approaches open this 'black box' (Figure 2), revealing the institutional dynamics that shape the provision of housing in the regulatory environment tempered by the pre-existing social, economic, political and government institutions. The housing development process involves a number of actors including planners, developers, land owners, building contractors, various government agencies and financial institutions. These actors internalise extraneous factors, such as economic conditions (represented by the GDP and household incomes) and policy (including state regulation), in their operations and interactions. The resultant arbitration of policy by these actors and pre-existing institutions shapes housing outcomes.

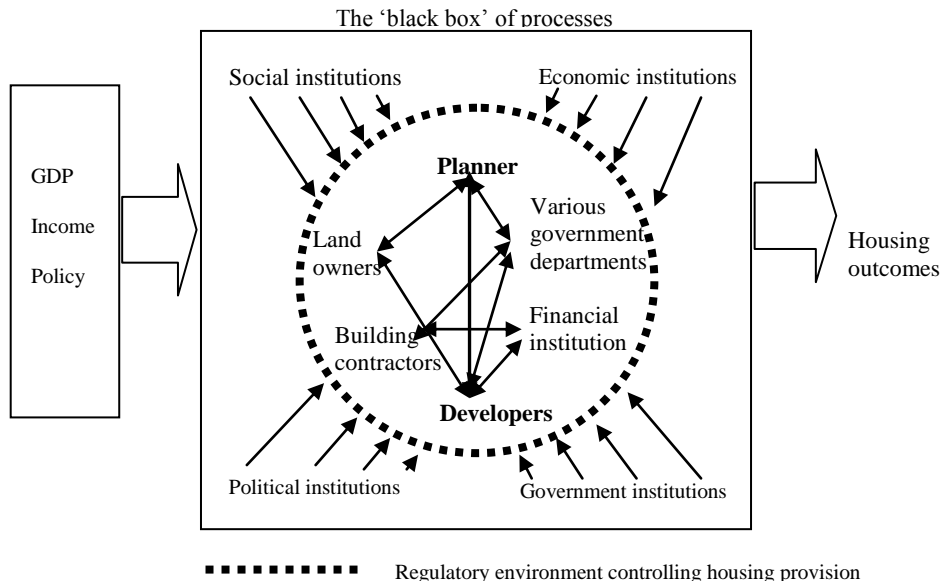
Institutionalists have shown that there may be different foci within the contemporary institutional economics literature. For instance, Hodgson (1998, 2000, 2006) focused on examinations of 'habits', in particular 'human habits', by arguing that the thoughts and actions of the individual are moulded by social and institutional circumstances and consequently will result in institutionalised habits and practices. On the other hand, Samuels (1995) supported the tradition of studying market 'processes', argued as being influenced by the social interactions of market agents, normally are slow to change and thus can be more accurately recorded and analysed.

In sum, institutional approaches offer an alternative role to econometric modelling approaches in studies of policy effects. Some researchers have adopted both approaches in their work. For instance, Ball has attempted both modelling and institutional analysis in examining UK planning. This shows that both approaches have their own merits, depending on the research question sought to be addressed. Whereas the mainstream economic modelling is useful in estimating outcomes of policy, an institutional analysis enables an insight into how policy can shape processes in the property market (Samuels, 1995; White & Allmendinger, 2003). Similarly, whilst econometric modelling may provide causality explanations and predict the future, the analysis of institutions may offer in-depth explanations that enrich the understanding of property market processes (Ball et al., 1998).

## 6. CONCLUSION

Housing provision comprises activities of a range of actors throughout the stages of development, consumption, exchange and finally, management. In turn, these activities take place in a regulatory environment specific to a country. At the regional level, the effects of regulations may be conditioned by the disaggregation of housing markets and other pre-existing institutions (e.g. the political, social, economic and legal institutions) together with policies designed to influence the land market.

Clearly there are positive economic and welfare benefits arising from regulations that merit further examination by housing researchers. This paper has outlined the two main approaches in the housing literature from developed countries for future examinations of housing regulations. It must be stressed that both approaches are complementary, rather than adversarial in nature. Both approaches cater for specific aims of the research; the mainstream econometric models offer generalisability and estimation of policy impact whereas the institutional approach can provide in-depth, context-specific explanations of the arbitration and implementation of policy in practice.



Source: Author's own analysis

**Figure 2: Opening the black box to reveal institutional dynamics in housing provision**

The above analysis of research from predominantly developed countries shows that institutionalism will continuously permeate housing literature in the future. The general usage and acceptance of institutional approaches among housing researchers, reviewers and editors bodes well for housing studies in developing countries that have lulled due to the lack of reliable and systematic housing data. Epistemologically, institutional approaches may address gaps in knowledge left by the simplification and abstraction processes in mainstream modelling. Thus, institutional approaches complement mainstream modelling in understanding the housing market in developing economies.

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