Institution: University of Reading

Unit of Assessment: 17, Business and Management Studies

Title of case study: Developing a Housing Market Model to Improve Housing Policy

Period when the underpinning research was undertaken: 2000 - 19

Details of staff conducting the underpinning research from the submitting unit:

Name(s):	**Role(s) (e.g. job title):**	**Period(s) employed by submitting HEI:**
Geoff Meen	Professor of Applied Economics	01/10/1997 - 31/07/2019 (retired)

Period when the claimed impact occurred: 2014–19

Is this case study continued from a case study submitted in 2014? Yes

1. Summary of the impact

The housing market in the UK has been described as "broken". It is seen as one of the greatest barriers to progress in building a stronger and fairer Britain. Becoming increasingly unaffordable, housing accounts for more than a third of the disposable income of 2,200,000 working households with below-average income (Housing White Paper, 2017). Research at Reading has informed a number of government policies aimed at improving the affordability of and access to housing; these include the government's annual house construction target (300,000), set with a view to increasing supply, and therefore improving affordability. The empirical model developed at Reading is fully embedded in policy cycles across numerous government departments, including the Ministry of Housing, Communities and Local Government (MHCLG). It also underpins the twice-yearly housing market forecasts conducted by the Office for Budget Responsibility and used in negotiations with HM Treasury over public expenditure planning.

2. Underpinning research

Long-term research at the University of Reading (backed by funding of approximately GBP1,000,000 from MHCLG since 2005) has led to the development of an econometric model of regional housing markets [ref 2]. Originally developed in the early 2000s to look at the effects on affordability of increases in housing supply, the model is still in widespread use and has expanded its scope to cover questions related to housing tenure, financial deregulation, the effects of Brexit and Right to Buy sales as recent examples. Simulations are conducted using the model, to determine the predicted impacts of changes in key policy variables on the outcomes of interest, in particular affordability [ref 5].

Regularly used to underpin government policy, the model has been refined over time and is an econometric model of housing affordability at the regional level, including specifications of the housing and labour markets, and demographic segments. For example, recent research has examined intergenerational aspects of housing affordability and the factors that affect opportunities for home ownership among different cohorts, in particular first-time buyers [ref 6]. Meen's research at the international level has also suggested that housing supply in the UK is less responsive to price rises than in other countries, implying that shortages and a lack of affordability can persist for prolonged periods [refs 1 and 4].

Modelling the effects of policy changes on housing is complex and had not been attempted on this scale in Britain before. Housing mobility, for example, implies that the effects of increases in housing supply on regional affordability are difficult to capture since households are likely to move into areas where new housing is being constructed, potentially offsetting any improvements in affordability in those areas. The interactions between these different factors affect not only house prices and affordability, but also household formation and the proportion who are owners, all of which are captured within the model [ref 3]. In contrast to official projections of household formation (which are trend-based), the model allows users to consider

how worsening affordability reduces the number of new households. In summary, the model demonstrates the strength of economic forces, and the impact of monetary and fiscal policy on housing.

The premise that housing affordability can be improved through increasing supply is underpinned by the model and reiterated in the 2017 Housing White Paper, 'Fixing our broken housing market'. However, the key issue was by how much housing supply would need to be increased in order to induce a major improvement in affordability; this was a difficult quantitative issue because of the interdependencies across local markets. Contrary to expectations at the time, the conclusions were that supply increases would have to be very large and sustained over long periods of time to have a significant effect on affordability. This fundamentally challenged the traditional view, according to which planning decisions for housing should be based on expected increases in the number of households, as opposed to the need to modify the housing supply. Meen's research showed that increases in provision would need to be much larger; and this indicated that there would need to be significant building on greenfield sites, where the cost of building is typically lower and supply responses to price changes are greater [ref 4]. While this analysis originally attracted considerable controversy, it is now generally accepted as correct, although political realities prevent the conclusions from being fully adopted. Nonetheless, since 2017, the government has had a house-building target of 300,000 dwellings per annum, underpinned by the research at Reading, which is much higher than recent outturns.

3. References to the research

1. Meen, G. (2002) 'The time-series behavior of house prices: A transatlantic divide', *Journal of Housing Economics,* 11 (1): 1–23.

2. Meen, G. (2009) 'Modelling local spatial poverty traps in England'. *Housing Studies*, 24 (1). pp. 127–147. doi: https://doi.org/10.1080/02673030802547413

3. Meen, G. and Andrew, M. (2008) 'Planning for housing in the post-Barker era: Affordibility, household formation and tenure choice'. *Oxford Review of Economic Policy*, 24 (1). pp. 79–98. doi: https://doi.org/10.1093/oxrep/grn010

4. Ball, M.J., Meen, G.P. and Nygaard, C.-A.B. (2010) 'Housing supply price elasticities revisited: Evidence from international, national, local and company data'. *Journal of Housing Economics*, 19 (4). pp. 255–268. doi: https://doi.org/10.1016/j.jhe.2010.09.004

5. Meen, G. (2011) 'A long-run model of housing affordability'. *Housing Studies*, 26 (7–8). pp. 1081–1103. doi: https://doi.org/10.1080/02673037.2011.609327

6. Meen, G. (2013) 'Homeownership for future generations in the UK'. *Urban Studies*, 50 (4). pp. 637–656. doi: https://doi.org/10.1177/0042098012458006

The underpinning research for this case study comprises six journal papers, all of which are published in refereed journals (one is rated 3* by the AJG/ABS list and three are rated 2*). The research meets or exceeds 2* quality definitions, providing important new knowledge centred around the development and various empirical uses of a novel econometric model of regional housing markets that has become influential in the housing economics literature.

4. Details of the impact

Research conducted at the University of Reading by Meen, demonstrating how increasing housing supply can improve affordability, has underpinned the key econometric model used for housing policy analysis and forecasting across government. Reflecting Meen's longstanding expertise in housing, and his close working relationship with MHCLG (for which he was awarded an OBE), the model has expanded beyond the focus of affordability and housing supply to embrace related issues of tenure, financial deregulation and Right to Buy Sales, as well as broader cross-government priorities, including Brexit. Indeed, when analysts "consider policy interventions, the model is used implicitly (if not explicitly)" and is "fully embedded in the policy cycle" [Section 5, source 1]. Results are shared with the Office for Budget Responsibility (OBR), the official independent forecasting agency, and are used in negotiations with HM Treasury over

public expenditure planning. In particular, the model has informed government "understanding of the housing market and how changes in the economy and demography will affect housing outcomes" [source 1].

"Our broken housing market is one of the greatest barriers to progress in Britain today. Whether buying or renting, the fact is that housing is increasingly unaffordable – particularly for ordinary working class people who are struggling to get by" (Theresa May, foreword to Housing White Paper, 2017). In this context, Meen's research has changed and informed the government's policies around housing supply [sources 1 and 2]. Outputs from the model were shared with ministers and showed that "at current levels of house building, affordability will get worse" and "provided a compelling case to be more ambitious about creating the conditions for supply to be permanently higher" [source 1]. The model's predictions that even housing supply significantly above current levels would only lead to a slowing of worsening affordability has "compelled (policy) ambition to be bolder and more radical" [source 1]. Thus, an annual government target of 300,000 additional homes was set out in the November 2017 government budget. If the government delivers 300,000 new homes per year (including change of use and/or office conversions), this will constitute a significant increase in the rate of house-building, since the number built in a year averaged only 177,000 in the period 2005/06 to 2017/18 (according to the Public Accounts Committee). The evidence-informed goal represents a change in local authority target-setting, as targets were previously set according to anticipated increases in households and are now being informed additionally by affordability indicators on a regional basis. The government trajectory towards the target of 300,000 is regularly updated on the basis of housing government forecasts informed by the model and shared across Whitehall by the Secretary of State, the Chancellor of the Exchequer and the Cabinet Office [source 1]; potential shortfalls are the trigger for further investigation and policy changes.

'Fixing our broken housing market' has caused much debate in the UK and is recognised by the government as key to building a stronger, fairer Britain (White Paper, 2017). Despite this, the most recent figures for affordability show that, on average, full-time workers could expect to pay an estimated 7.8 times their annual workplace-based earnings on purchasing a home in England and Wales in 2018 (Office for National Statistics, 2019). Current statistics show that housing in 77 local authorities became less affordable over the last five years (Office for National Statistics, 2018), with the gap between the most and least affordable areas continuing to widen. In recognition of the variance in affordability according to geography, the model has been used to inform government policy on the geographical targeting of housing investment in high-demand areas such as London and the South East [source 1].

Meen's long-term engagement with parliamentary select committees, the MHCLG and the OBR has continued as successive governments have utilised his expertise to tackle a variety of important economic and social policy issues. For example, the OBR produced the working paper *Forecasting House Prices* [source 3], which looked to develop a five-year forecast using models for house prices, whilst examining insights regarding the drivers of house price rises. This forecasting approach was based heavily on a series of Meen's papers, most notably his 2013 paper [ref 6] and forms part of OBR's core forecasting activities on house prices today [sources 1 and 3].

Meen also contributed to parliamentary debate through his appointment as a Specialist Adviser to the House of Lords Economic Affairs Select Committee Inquiry into the UK housing market in 2015/16 (House of Lords 2016, 'Building more homes', source 4). The Committee concentrated on ways of increasing housing supply (the theme of a number of government and independent reports) but was sceptical of the widespread view that increasing general market housing would benefit those on low incomes. This was consistent with Meen's work on the effects of increases in housing supply; the Committee then called for the relaxation of controls on local authority borrowing in order to increase the amount of affordable housing. Controls have now been relaxed. Furthermore, the results produced by the model showed that new affordable housing output does not significantly crowd out new private housing supply; this has been used by MHCLG to "convince HM Treasury of the efficacy of affordable housing investment" [source 1].

The model has also been used "multiple times" to test "the impact of changes to stamp duty" and was "influential in the eventual HM Treasury decision" to make changes to Stamp Duty in 2017 [source 1].

Although work on the model was suspended during the period of the Coalition government, the need was such that it resumed in 2015 with a rebuilding of the model to reflect new policy priorities. Further updating, including the most recent research on tenure, took place in 2018/19. For example, the model's Right to Buy sales equations are used to forecast the numbers of local authority housing sales to tenants across the UK regions. The MHCLG "uses this to project the total amount of income that it expects local authorities to receive from sales. This provides the basis for estimates of the amount that authorities must spend on replacement housing stock to comply with the requirement to spend receipts within three years. The modelling results are shared with the OBR at Fiscal Events, and feed into the Local Authority Self-Financed Expenditure forecasts" [source 1]. The model has also been used to inform potential policy interventions in the event of a "no-deal" Brexit [source 1]: "The model was used to test multiple Brexit scenarios and how they would affect the housing market. The potential impacts on housing construction, housing transactions, house prices and affordability were looked at. The analysis provided a baseline to design potential policy interventions in case of a no-deal, including where to focus our attention and what the trigger signs might be in a housing downturn" [source 1].

Meen has also provided guidance on housing economics and the use of models since the model's inception, training successive generations of economists in the Ministry since 2005; in terms of skills capacity, Meen facilitated the setting-up of a system within MHCLG which will enable the ongoing training of economists in-house. In addition, he was invited to give a seminar on housing affordability to MHCLG staff, including researchers and policy analysts, in January 2017. Subsequent to this, he provided oral evidence to the House of Commons Communities and Local Government Committee on housing for older persons in January 2018, and this is cited in the final report [source 7]. There is a view that there is no housing shortage in Britain. Rather, older households are "under-occupying" housing, particularly once their children have left home. Therefore, if they could be encouraged to downsize, the housing problem would be reduced. One view is that the failure to downsize is due to the lack of suitable alternative accommodation. However, Meen's evidence concentrated on the absence of incentives to do so. Most older-person households have paid off their mortgages and so their housing costs are low; the tax system, and expected capital gains in housing assets over time, encourage them to stay.

Meen also gave advice on both modelling and policy to the independent Redfern Review into the decline in home ownership (2016); this was commissioned by the Shadow Secretary of State for Housing. The technical report accompanying the Review, on forecasting house prices and home ownership and produced by Oxford Economics [source 5], cites 11 papers by Meen out of a total of 25 references, alongside providing the basis for house price modelling. More recent work with the UK Collaborative Centre for Housing has been used to inform the Affordable Housing Commission Report *Defining and Measuring Housing Affordability – An Alternative Approach* [source 8].

Beyond England, a commissioned review of tax revenue forecasting models for the Scottish housing market concluded: "The models that were most popular for forecasting house prices included error-correction models. Particularly, the most influential literature for practitioners in the UK was the work of Geoff Meen" [Scottish Government, source 6].

In summary, this body of research has underpinned cross-government policy reform aimed at addressing the challenges in the UK's "broken" housing markert. Of particular concern has been the rise in housing costs, making housing increasingly unaffordable. In terms of reach, Meen's long-term research has been adopted on a national scale and has informed a variety of important economic and societal policies associated with housing. Significantly, in addressing the barriers to a "fairer and stronger Britain", it has informed "radical" policy decisions (for

example, housing targets) which have urgent and compelling ramifications for planning policy and housing affordability as a whole.

5. Sources to corroborate the impact

[S1] Testimonial from MHCLG.

[S2] Ministry of Housing, Communities and Local Government (2018) '*Analysis of the determinants of house price changes'.* Ad hoc publication, April.

[S3] Auterson, T. (2014) *Forecasting House Prices.* Working Paper No.6, Office for Budget Responsibility (See pp. 2, 6, 16, 21, 35.)

[S4] Select Committee on Economic Affairs, House of Lords (15 July 2016) '*Building more homes'.,* 1st Report of Session 2016/17. HL Paper 20. *www.parliament.uk* (Appendix 1, which lists Professor Meen as a special adviser.)

[S5] Oxford Economics (2016) *Forecasting UK House Prices and Home Ownership: A Report for the Redfern Review into the Decline of Home Ownership.* (See Section 4.2, p. 22.)

[S6] Scottish Government (2017) *A Review of Tax Revenue Forecasting Models for the Scottish Housing Market.* (See p. 46 in particular.)

[S7] Communities and Local Government Committee, House of Commons (2018) *'Oral evidence: Housing for older people',* HC 370. Second Report of Session 2017–19. (See pp. 25, 26, 33 and 68.)

[S8] Affordable Housing Commission (2019) *Defining and Measuring Housing Affordability – An Alternative Approach.*