

# Housing supply in Ireland since 1990: the role of costs and regulation

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## Abstract

Housing has been central to both global and Irish economic fortunes in the past generation and was a major contributory factor in the Great Recession. Recently, greater attention has been paid around the world to the economics of housing supply, including the costs imposed by regulations relating to land use and building. In Ireland, the last few years have seen a growing shortage of accommodation, particularly in the Greater Dublin area, as population growth is unmet by new additions to the housing stock. This paper examines both costs and regulatory conditions relating to Irish housing supply since 1990. It brings together a range of studies on the cost of building in Ireland currently and relates these to both house prices and household incomes. It then derives a number of summary statistics of regulatory conditions, based on the full dataset of over one million planning permissions across Ireland's 35 local authorities over the period 1990-2013. These include: the median time-to-planning-decision; the proportion of projects approved; and the median number of conditions imposed. The connection between these and Ireland's extreme housing market cycle since 1990 is then explored, before the paper concludes by noting avenues for future research.

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## 1. Introduction

The Global Financial Crisis has highlighted the importance of understanding macroeconomic fluctuations. The housing market is now understood to be central to those fluctuations, with housing the most important consumption good in developed economies. Its unique role in the economy stems from its dual role as a good (shelter) and an asset (real estate). As macroeconomics looks to develop models that incorporate a realistic financial sector, therefore, understanding what determines house prices remains an important challenge.

House prices are determined by demand, which reflects factors such as income, demographics and user cost, and two forms of supply: credit and housing. A growing literature – led by John Muellbauer at Oxford – has examined the impact of an outward shift in credit supply on house prices (see, for example, Fernandez-Corugedo & Muellbauer 2006 and Duca, Muellbauer & Murphy 2011). Such shifts are now believed to be responsible for much of house price growth in economies such as the US, the UK and Ireland in the decade to 2007. Since 2012, dramatic house price growth in selected markets in the same economies has focused the attention of policymakers on the importance of housing supply and obstacles to new construction. This is particularly pertinent in Ireland, where roughly 50,000 new households were formed in Dublin 2010-2015, while fewer than 10,000 new dwellings were built in the same period.

There has been a growing interest internationally in the determinants of housing supply. Some studies have used geographic characteristics of different parts of the US to examine how prices respond to supply (for example, Saiz 2010). There is reason to think, however, that even controlling for costs and revenues, supply of new homes might shift with the market cycle, reflecting among other things changes in planning and regulatory conditions.

This paper examines how conditions in the planning system in Ireland varied with the extreme housing market cycle in Ireland since the mid-1990s. Section 2 outlines evidence from other economies on the relationship between land use regulation and housing market outcomes, as well as briefly reviewing literature on the Irish housing market. Section 3 describes the data used in the analysis, which come from planning applications made to Ireland's 35 local authorities over the period 1990-2013. Section 4 presents stylised facts from the data and illustrates its use by exploring two potential determinants of whether an application was approved: the political make-up of the local authority; and whether the application was made in a "Section 23" zone.

The apparent countercyclicality of regulatory conditions – in other words, the evidence that it became tougher to have an application approved as the bubble reached its height – is reconciled with economic theory in Section 5. This is done primarily through the distinction between process regulation and output regulation, which will have different effects on the supply of and demand for planning permits. Section 6 investigates output regulations by examining the cost of building a dwelling over time, and relating this to prices and to incomes, before Section 7 concludes.

## 2. Related Literature

As noted in the introduction, with housing prices determined by supply among other things, the determinants of housing supply are the subject of growing interest. Quigley & Raphael (2005) examine land-use regulation in California, using a sample of over 400 cities in the 1990 and 2000

Census years and a survey of land-use officials to measure the restrictiveness of land use in each city. They find that cities with stricter land use regulations suffered from fewer new homes built and thus higher house prices and greater house price increases 1990-2000. Ihlanfeldt (2007) found largely similar effects in Florida, accounting for endogeneity and demand-side effects. Glaeser & Ward (2009) focus on the Greater Boston area, also home to significant house price increases in the run-up to the Global Financial Crisis. They also find that land-use restrictions significantly hampered new development.

The most comprehensive study of US housing supply is Saiz (2010). He exploits the fact that a demand shock in housing should lead to a supply response, as well as the fact that barriers to entry are needed to prevent supernormal profits in the long run. He identifies two sources of barrier to entry in the housing market – geographic and regulatory – and measures them for all major American cities (again using survey measures to capture land-use restrictions). The core of Saiz's research is that the change in house prices in a city depends on the change in construction costs, and the change in housing stock. As the change in housing stock is endogenous, demand is instrumented in three ways. For the US as a whole over the period 1970-2000, a 10% increase in demand brings about a 6.5% increase in prices – roughly half this impact is due to geography and almost all the remainder is due to regulation. Put another way, a city with sufficient geography and no regulatory barriers would expect to see prices rise by just 0.6% in response to a 10% increase in demand.

More recently, Hilber & Vermeulen (2015) have applied a similar model to a panel of 353 local planning authorities in England 1974-2008. They test whether house prices respond more strongly to growth in income where supply is tightly constrained, exploiting variation from a policy reform, vote shares and historical density. In line with the US literature, they find regulatory constraints affect how house prices respond to an outward shift in demand and also that the effects of supply constraints are greater during boom than bust periods.

In relation to the Irish housing market, very little research has been carried out on the determinants of housing supply. A wave of research in the late 1990s and early 2000s examined the house price equation but was typically limited by excluding credit conditions and any treatment of expectations.<sup>2</sup> More recently, research from the Central Bank of Ireland has included measures of credit conditions, dramatically improving the explanatory power of house price models (Addison et al, 2009). Lyons & Muellbauer (2015) examine Irish house prices in error-correction and multiple equation settings, including both credit conditions and (adaptive) expectations. They find that the loosening of credit conditions (as measured by the ratio of mortgage credit to deposits) explains the vast majority of house price increases between 2002 and 2007.

A recent paper by Stevenson & Young (2014) attempts to model Irish housing completions directly, using quarterly data for the period 1978-2008. They find that construction activity responds relatively rapidly to disequilibrium in supply, but not to disequilibrium in prices (consistent with extrapolative expectations). Their model also includes a price equation, although both are likely to be misspecified as they do not include credit conditions or expectations, thus biasing the user cost term. There remains scope, therefore, for a richer understanding of Irish housing supply, in particular by considering the role of regulatory conditions.

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<sup>2</sup> See, for example, Harmon & Hogan (2000), Stevenson (2003), Roche (2004) and McQuinn (2004). An exception is Murphy (2005), although financial liberalization is treated as a categorical variable.

## 3. Data from Planning Permissions

### 3.1 Irish planning archives

To measure regulatory conditions in Ireland over the period 1990-2013, the database of Irish planning applications for this period was used. The data were gathered at local authority level via their websites, using a Python script to convert planning permission applications into a database. After merging the data from the 35 separate systems, only those relating to Full Permissions and from the period 1990-2013 (inclusive) were kept. In addition to the 35 top-level local authorities, unique identifiers were assigned to each of the 78 lowest-level granting authorities. For example, within Kerry County Council, planning decisions were made by one of four granting authorities: Killarney Town Council, Listowel Town Council, Tralee Town Council or Kerry County Council itself.

Using the description of the development applied for, binary variables were constructed to reflect each of the following: building (in particular where either of the character strings 'erect' or 'construct' appears); residence (dwelling, bungalow and house were by far the three most commonly used terms to indicate a private residence); and extension (where any of the following strings were matched: extension, extend, refurbish).<sup>3</sup> Any entry which met the following three conditions was deemed to relate to the construction of residential real estate: where the 'build' and 'dwell' variables had a value of 1 and the extension variable had a value of 0.

In addition to the application having to refer to the construction of residential real estate, to be included in the analysis, it also had to be a full application. This means that invalid or withdrawn applications were not counted – more specifically, three variables reflecting (unconditional) acceptance, a conditional grant and a refusal were generated, corresponding to the recorded decision.

Two valid datasets were then constructed. The first, narrower, dataset refers to full applications (which were either accepted, conditionally or unconditionally, or refused) where reference is made in the application to the construction of a dwelling (but not reference to extension or refurbishment). The second, broader, dataset excludes the requirement that construction be referred to. This reflects the fact that, in certain local authorities in particular, a substantial number of applications do not refer to construction or erection, rather merely state 'dwelling-house' in the application. The narrower dataset includes just over 255,000 planning applications between 1990 and 2013, while the broader dataset includes 440,000 applications.<sup>4</sup>

For the majority of valid applications, it is possible to calculate the time between application and the planning decision. Those with a 'time-to-planning-decision' (*ttpd*) of between one working week and two years were classified as having a valid entry, meaning a total of just under 275,000 valid applications had information on *ttpd*. Some simple summary statistics of the dataset are presented in Table 1.

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<sup>3</sup> Due to the nature of the functions within Stata, variants of these terms using upper-case or proper-noun case were also searched for.

<sup>4</sup> There were incomplete archives of planning applications for a number of local authorities during the 1990s. For the period from 1995 on, almost all local authorities have complete archives available online – the only exceptions being Carlow and Wexford County Councils (to 1999 and 1998 respectively).

**Table 1. Summary statistics of the Planning Permissions Database**

<b>Description</b>	<b>Number</b>
Total number of planning applications gathered from 35 LAs	1,113,754
Valid sample of complete applications for Full Permission (broad definition)	440,440
Valid sample of complete applications for Full Permission (narrow definition)	225,704
Consistent 1995-2013 sample (broad definition)	374,943
Mean time-to-planning-decision (TTPD), days (valid sample)	103
Median time-to-planning-decision (TTPD), days (valid sample)	61
LAs with full information on TTPD and number of conditions (out of 35)	21

### **3.2 Section 23 reliefs**

Two other sets of data are used, to illustrate the potential applications of the newly formed dataset, as well as to examine the determinants of whether a planning application is successful. Firstly, information was collected on the geographical and temporal scope of the Section 23 relief, a term applied to six different schemes relating to tax reliefs for rented residential property in operation for varying periods between 1998 and 2004.<sup>5</sup> While relating to rented properties in certain districts, two aspects of the relief suggest a potentially larger impact. The first feature worth noting about the Section 23 reliefs is that the restriction to rental properties referred to first-use only. Thus, builders could enjoy lower costs of construction and, following a brief period of letting the property, could then sell it on.

Secondly, while the reliefs covered expenditure on the purchase, construction, conversion or refurbishment of property meeting certain conditions, the qualifying taxable income was not tied to that property: all Irish rental income was affected, thus creating a free option, of sorts, to reduce tax paid while potentially also generating a new income source. To reflect this downward shift in the cost of house-building, and thus the upward shift in demand for planning permissions, a number of “treatment” and “control” groups were designed, reflecting the three principal Section 23 schemes: Rural Renewal, Town Renewal and Urban Renewal.

The Rural Renewal scheme was open to applications made between May 1998 and December 2004 and referring to property in Counties Leitrim and Longford, as well as specific townlands in Cavan, Roscommon and Sligo (roughly 150 in total across all three counties). By using the date of

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<sup>5</sup> Five earlier schemes, relating predominantly to districts within Dublin and particular seaside/island resorts, existed at various stages between 1991 and 1999.

application and by checking the address of the proposed development to see if it was in the counties or townlands specified, it is possible to construct a binary variable for applications that were eligible for the Rural Renewal Scheme.

Similar variables were constructed for the Town Renewal and Urban Renewal schemes. The Town Renewal scheme was open to applications between 1 April 2000 and 31 December 2004 (although, as with the Rural Renewal scheme, some expense reliefs continued to apply until 2008). Eligibility was restricted to roughly 100 towns across 24 local authorities. The Urban Renewal Scheme, lastly, was open to applications made between August 1998 and December 2002. The geographic scope of this scheme was less precise, although this primarily relates to the five largest cities (Dublin, Cork, Galway, Limerick and Waterford). For 36 urban areas, it was possible to construct a binary variable reflecting their (time-bound) eligibility in the Urban Renewal Scheme.

A subset of the 440,000 valid planning applications, therefore, is in both areas and periods eligible for each of the three schemes. Similarly, there are applications relating to areas and/or periods similar to but not eligible for tax relief. For example, applications from counties Sligo, Roscommon and Cavan but in townlands outside those designated for Section 23 constitute a 'control group' of sorts (*Rural Control vs. Rural S23*).<sup>6</sup> Likewise, applications relating to the towns covered under the Town Renewal Scheme but made between the start of the Rural and Town schemes (May 1998 to March 2000) constitute a control group for the Town scheme (*Town Control vs. Town S23*). Lastly, the Urban Renewal Scheme covered a shorter period than the others while also only covering 73 of Ireland's 139 towns with a population of at least 1,500 people (in the 2002 Census). Thus, both the other 66 towns for the period of the Urban Renewal Scheme, and the areas covered by the scheme for the period after its end but before the end of the other schemes (January 2003 to December 2004) constitute control groups for the urban scheme. The towns not covered are split between those outside the Commuter Counties (*Urban Ctrl1*) and those within the five-county Greater Dublin area (*Urban Ctrl2*), given the potential for different trends in the demand for housing. The covered towns in the 2003/2004 period forms *Urban Ctrl3*.

### 3.3 Political make-up of councils

Secondly, in addition to information on Section 23, statistics on the make-up of the local authority councils, by political party, were included. Despite the formal separation of final decisions on planning applications from elected local representatives, it may be the case that council with a greater fraction of Fianna Fail or Green Party representatives may create a different planning environment than other councils, everything else being equal. Likewise, a greater fraction of councillors coming from outside the main political parties may be associated with systematically different behaviour. This was done by incorporating results from the 1991, 1999, 2004 and 2009 local elections in the 35 local authorities. The fraction was calculated on the basis of decision date; i.e. where a planning application was made in April 1999 but decided on in August 1999, the 1999-2004 Council, which was in place from June, was deemed the relevant one.

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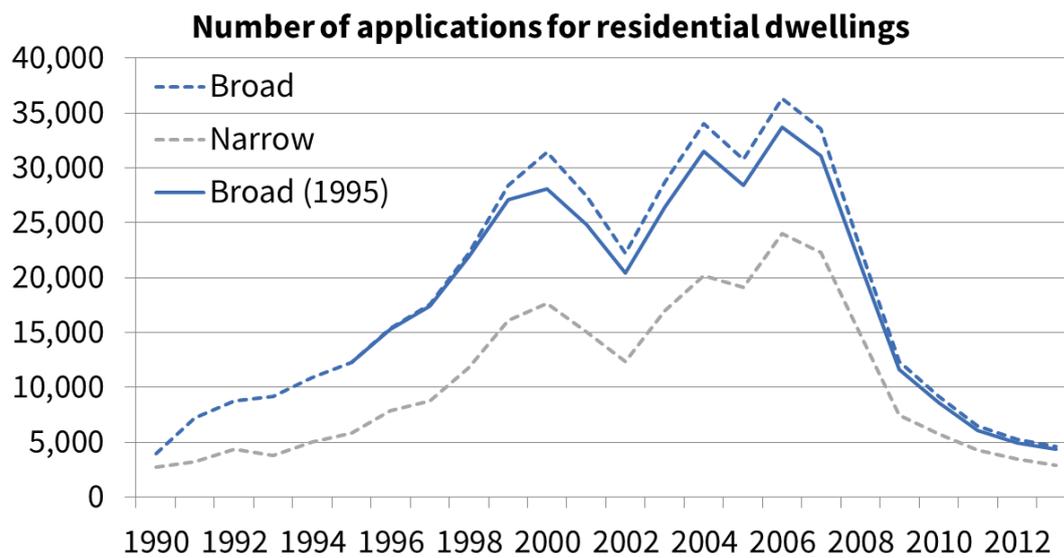
<sup>6</sup> Strictly speaking, this assumes that assignment into a relief scheme was as good as random, which is not the case. However, it is possible to examine pre- and post-trends to assess how similar the 'treatment' and 'control' groups are in each of the three schemes.

## 4. Initial Insights

### 4.1 Trends over time

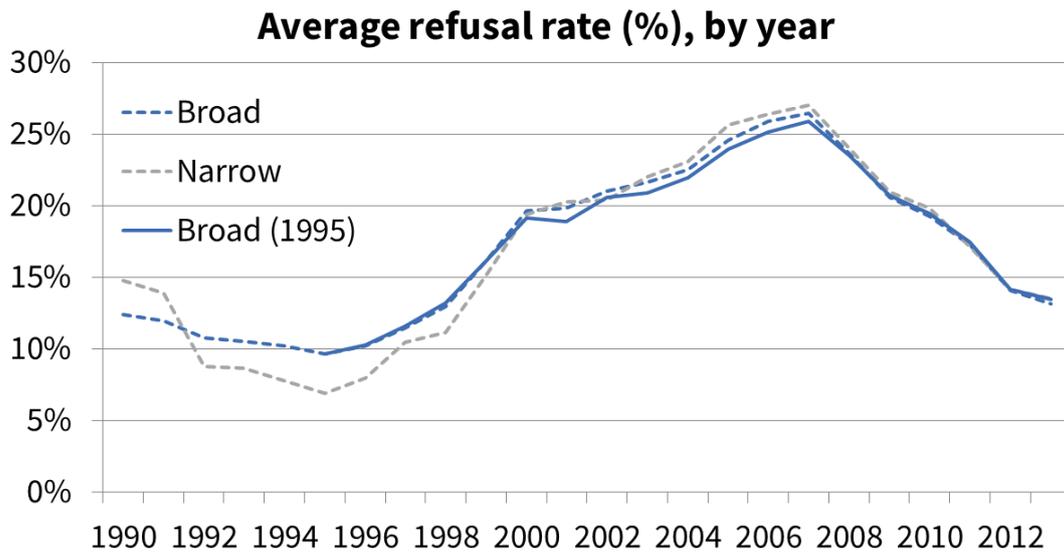
Figure 1 shows the volume of applications for construction of residential dwellings from 1990 on, and in a consistent way from 1995 on. The solid line shows the total number of applications, using the broader definition of residential development, for those local authorities ever-present from 1995 on. There is a clear increase in planning applications from the mid-1990s to 2000 and then again from 2002 to 2006. It is interesting to note that applications peaked before house prices (which peaked in early 2007).

**Figure 1. Volume of applications for residential dwellings, 1990-2013**

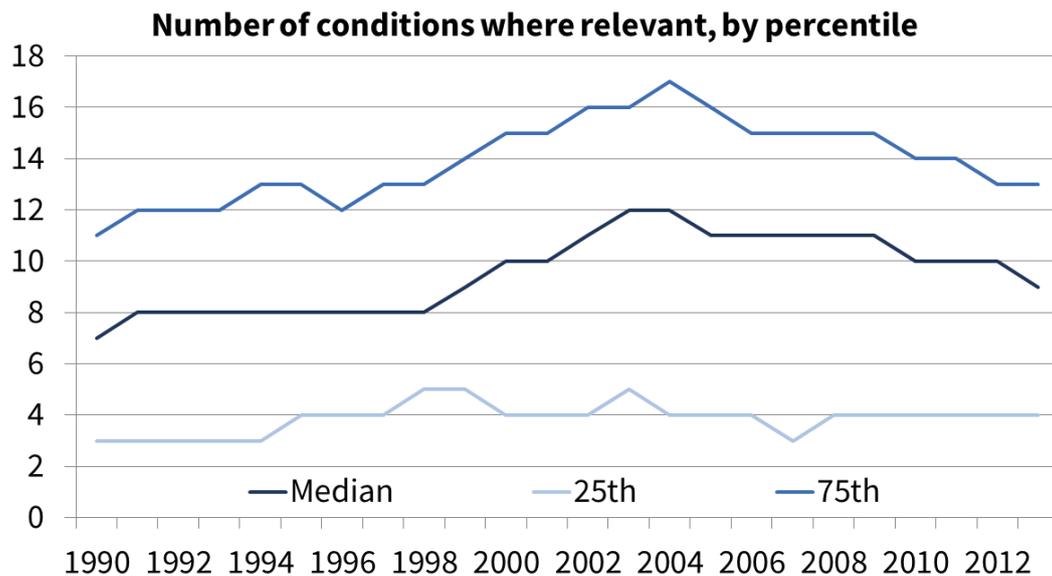


Figures 2 and 3 chart two of the most straightforward measures of planning conditions, namely the percentage of applications refused planning permission and the median number of conditions imposed on an application that was conditionally approved. In this sense, these two figures provide evidence on the cyclicity of regulatory conditions. In both cases, they indicate that regulatory conditions were countercyclical. In other words, an application was more likely to be refused permission 2002-2007 than before or after (roughly twice as likely), and those that were conditionally approved were subject to an increasing number of conditions (to 2004).

**Figure 2. Average refusal rate (%), 1990-2013**

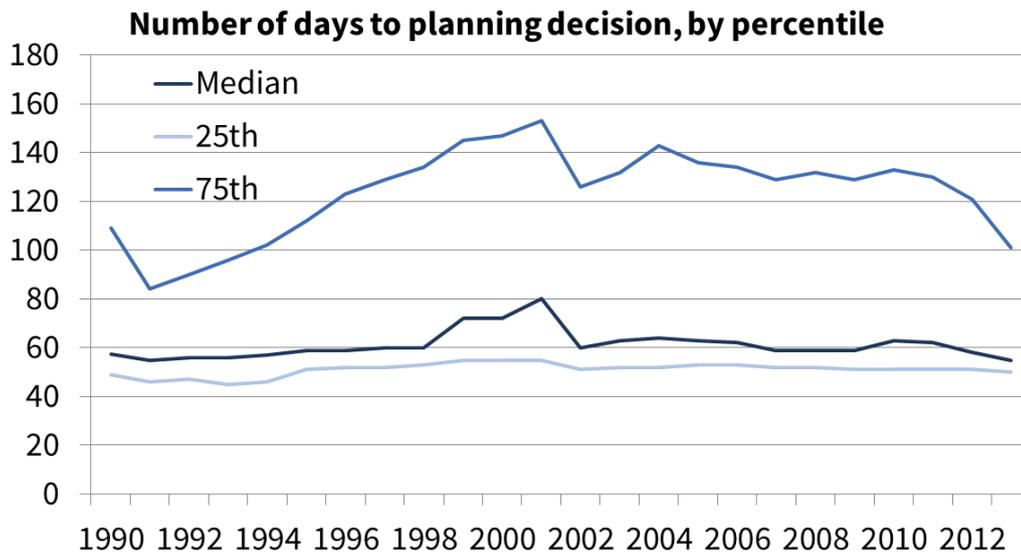


**Figure 3. Number of conditions by percentile, 1990-2013**



A similar picture emerges from looking at the number of days taken between an application and the planning decision (Figure 4). For the median and 25<sup>th</sup> percentile, there is almost no trend over the period. There is some evidence of slower decisions for the 75<sup>th</sup> percentile up to 2001 and slightly faster decisions thereafter.

**Figure 4. Number of day to planning decision by percentile, 1990-2013**

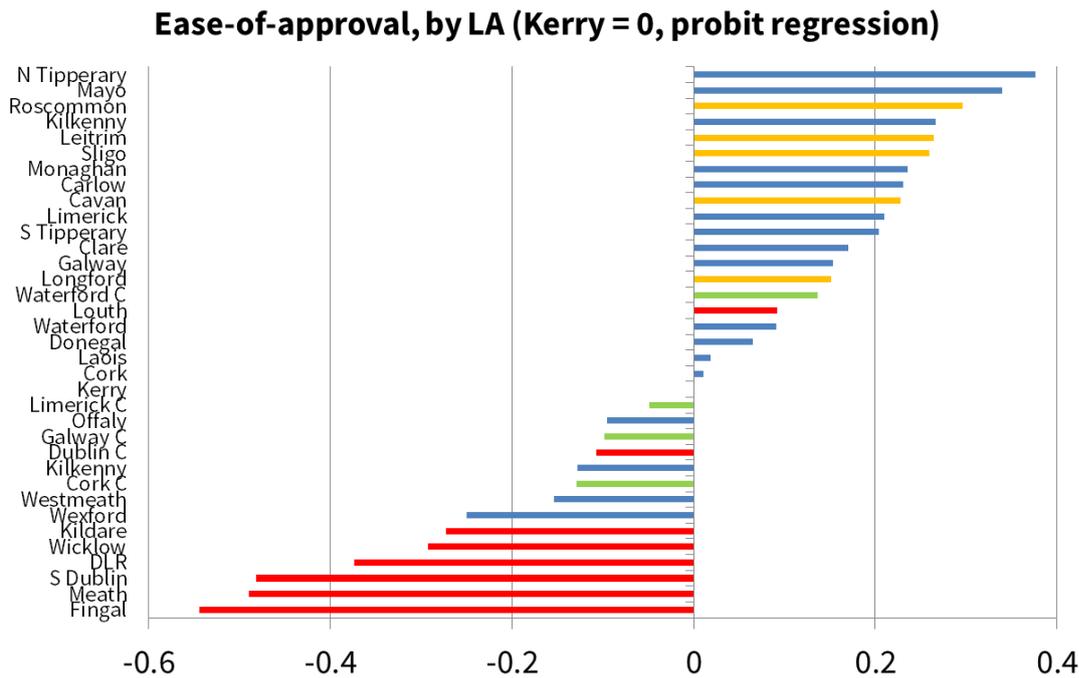


#### 4.2 Trends across Local Authorities

The figures presented in Section 4.1 are unconditional averages, by year. Conditional averages are possible through the use of probit regressions. The baseline probit regression examines the probability of a project not being rejected (in other words being approved, conditionally or unconditionally), as a function of year-specific fixed effects and local authority-specific fixed effects. The coefficients on local authorities indicate the differences across authorities in the likelihood of being approved, holding time constant. These are shown, with Kerry as the control group (coefficient of zero) in Figure 5. Local authorities in the Greater Dublin Area are highlighted in red, those in other cities in green, and those in Rural Section 23 areas in orange.

A clear pattern emerges, with local authorities in the Greater Dublin Area significantly more likely refuse applications than those elsewhere, on average, and those in Rural Section 23 areas among those most likely to approve an application.

**Figure 5. Coefficient on local authority fixed effect, in probit regression of approval**



### 4.3 Impact of Political Mix

This baseline can be augmented, to explore the role of other factors in determining the probability that a project is approved, conditionally or otherwise.<sup>7</sup> One factor that may affect development is the political mix of the elected politicians in a Local Authority. Including the authority-level percentage of councillors that were members of Fianna Fail, which would be regarded as the most pro-development party, and member of the Green Party, typically regarded as the least pro-development, produces counterintuitive results.

Controlling for local authority- and year-specific fixed effects, or including fixed effects for each year-local authority combination, the greater the fraction of Fianna Fail councillors, the higher the likelihood of an application being rejected. Conversely, the greater the fraction of Green Party councillors, the higher the likelihood of an application being approved. For percentage without affiliation to a main party, the result was large and positive: the greater the share of independents, the more likely an application would be accepted (conditionally or otherwise).

Selected regression output is shown in Table 2. Given the official separation of ultimate planning decisions from elected representatives, these strong statistically significant results – even in the presence of interacted local authority-year fixed effects – are something of a surprise. The negative (positive) relationship between percentage Fianna Fáil (Green Party) on the council and likelihood of acceptance suggests some combination of planner attitudes and marginal project quality in response to the shifting political composition. For example, following an increase in Fianna Fáil representation, more low-quality applications may be made and/or planners may become more

<sup>7</sup> Not included in this analysis, for reasons of space constraints, are analyses using other dependent variables to measure planning conditions, e.g. number of conditions imposed or time to planning decision.

resolute in their decisions. This hints at a broader issue of self-selection in applications, which is taken up in more detail in Section 5.

**Table 2. Planning Approval, Politics and Section 23: Selected Regression Output**

		<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
<b>Percent FF</b>	beta	-0.593***	-1.225***	-1.226***
	s.e.	0.059	0.137	0.137
<b>Percent Green</b>	beta	0.226	1.375**	1.381**
	s.e.	0.174	0.490	0.490
<b>Percent Other</b>	beta	0.730***	3.050***	3.055***
	s.e.	0.071	0.214	0.214
<b>Rural S23</b>	beta			0.115**
	s.e.			0.038
<b>Rural Control</b>	beta			-0.010
	s.e.			0.034
<b>Town S23</b>	beta			0.041**
	s.e.			0.012
<b>Town Control</b>	beta			0.021
	s.e.			0.021
<b>Urban S23</b>	beta			0.188***
	s.e.			0.026
<b>Urban Ctrl1</b>	beta			-0.005
	s.e.			0.020
<b>Urban Ctrl2</b>	beta			0.082**
	s.e.			0.025
<b>Urban Ctrl3</b>	beta			0.004
	s.e.			0.029
<b>Fixed Effects</b>	LA	Yes		
	Year	Yes		
	LA*Year		Yes	Yes
<b>Sample size</b>		400,607	400,197	400,197

*Note: Dependent variable is the probability of a project not being refused (i.e. being accepted, either conditionally or unconditionally). Fixed effects for local authority and year are suppressed for reasons of space.*

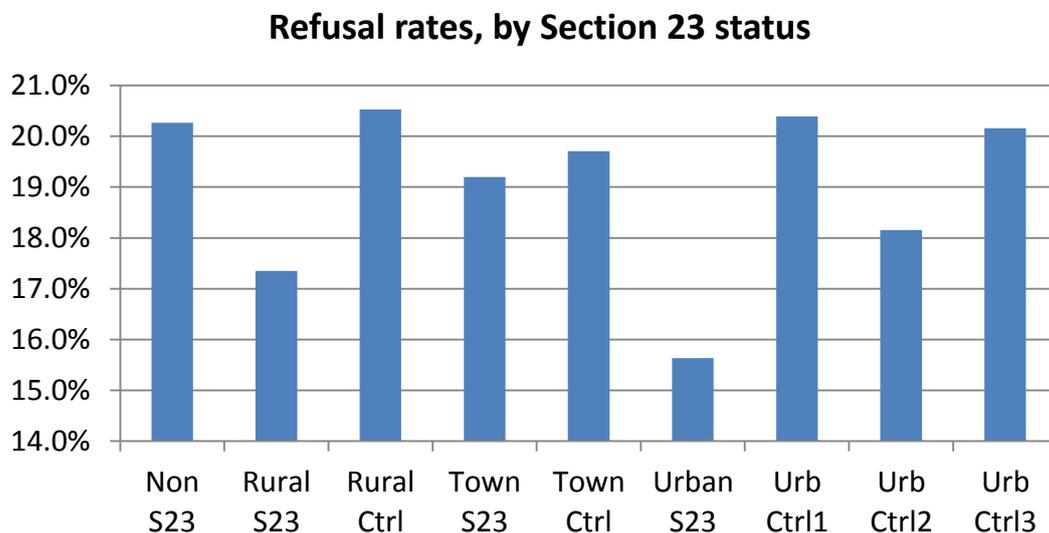
#### 4.4 Impact of Section 23 designation

Another extension is to include information on Section 23 designation, as outlined in Section 3.2. With an overall control group (Ex-S23), there are eight treatment and robustness checks, as described earlier. Model 3 in Table 2 shows the results of a probit regression including year-local authority fixed effects and political mix by local authority, as well as a categorical variable reflecting Section 23 treatment and control groups (from 1 to 8). It produces clear results about the impact of Section 23.

In all three cases (rural, town and urban), there is a statistically significant positive impact on approval. These results are strong for Rural Section 23 (compared to areas within the same county that were not included in Rural Section 23): the marginal effect for the rejection rate was 17.4% vs. 20.5%. There was a larger effect for Urban Section 23, where the rejection rate was 15.6% (vs. 18%-

20% for the controls). The effect for Town Section 23 was smaller. In almost all cases, there is a clear distinction between the treatment areas and their proposed control groups, the one exception being *Urban Ctrl2*, i.e. large towns not included in Section 23 but in the Greater Dublin area.

**Figure 6. Refusal rates by Section 23 status**



Thus, it seems the case that, at the margin, the political mix and the fraction of projects approved were linked, although inferring causality requires further study. One channel is that the political mix affected the nature of projects. By shifting out demand for housing, though, the Section 23 scheme would have had a similar effect – and there, the sign is as per expectations. Applications in Section 23 areas – rural, town and urban – were more likely to be approved than others, holding local authority, year and political mix constant. This would suggest some link between the housing bubble and easy planning conditions.

Over time, though, it is clear that for the sample as a whole, planning conditions did not loosen with the housing market bubble. Albeit off a larger base, an application was more likely to be rejected in 2005 than in 1995 or 2010. A similar conclusion applies for number of conditions applied and the time to a planning decision, which indicate that planning conditions were between acyclical and countercyclical. Given that credit conditions appear to have been extremely procyclical, with the typical first-time buyer deposit falling from more than 20% to less than 5%, what might explain why planning conditions were immune?

## 5. Insight from Economic Theory

While there may be a popular narrative that lax planning was a contributory factor in the bubble, there appears to be little evidence for that, based on the stylised facts outlined in Section 4. This however is not the same as stating that regulation is unimportant for the housing market. Considering planning permits as a market, there are important insights from considering the slopes of the supply of and demand for permits.

Housing and housing permits are very much complementary goods, but within that, the planning permit is very much the “dwarf” complement good. Demand for a planning permit is because it is a means to utility/profit, not utility/profit itself. In particular, the welfare stream from the complementary good (the dwelling) is orders of magnitude larger than any costs associated with the permit. This leads to an important distinction between regulation of the process (the permit) and regulation of the output (the dwelling).

**Figure 7. Supply and Demand for planning permissions (stylised)**

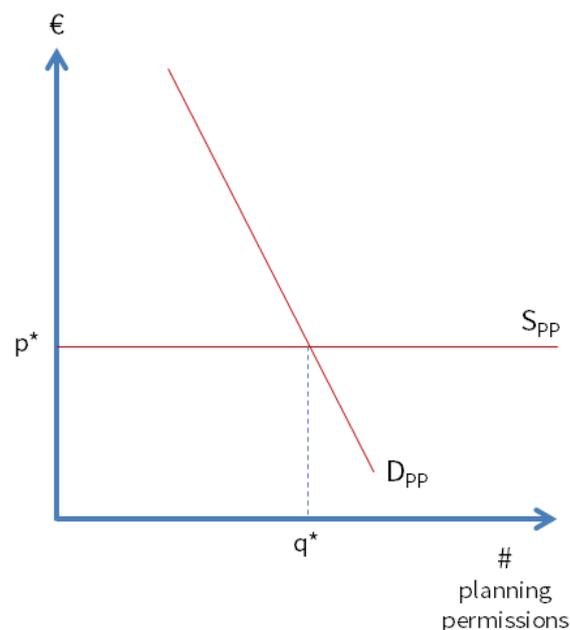
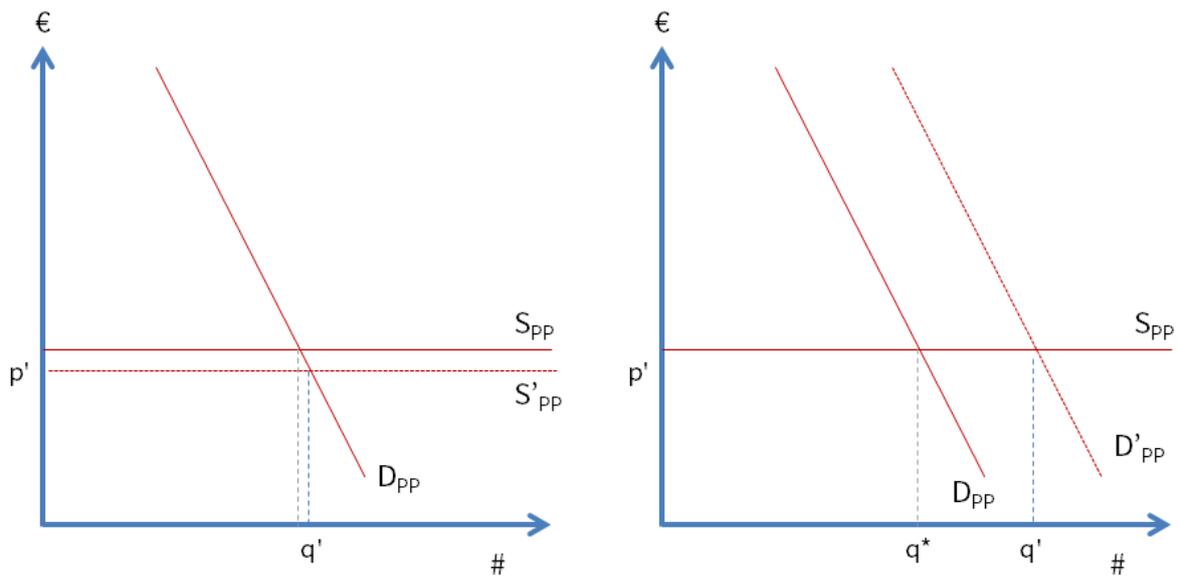


Figure 7 sketches the likely slopes of the supply and demand curves in the market for planning permissions. Price here reflects not only the direct fees involved in applying but also other costs, such as detailed plans, ads and time costs. Supply is similar in some respects to monetary policy by interest rate decision: given the price, the local authority commits to supply whatever quantity is demanded and thus supply of permits is elastic. Demand, on the other hand, is highly inelastic: compared to the scale of the complement good, the price of the application has very little impact on demand.

**Figure 8. Shifts in Supply and Demand for planning permissions (stylised)**



*(a) Shift in supply of permits, e.g. due to requirement to respond within shorter period*

*(b) Shift in demand for permits, e.g. due to favourable tax treatment of dwellings*

The two panels of Figure 8 highlight the likely effect of changes in different sorts of regulation. Regulations that affect the supply of permits, for example a requirement to respond to planning applications within a shorter timeframe, will have very little impact on quantities (panel (a)). Panel (b) shows a change in regulations that affects the demand for permits, without affecting supply. Here, there is a huge impact on the quantity traded in the market, with price remaining unchanged.

This suggests that process-focused regulation will have far less of an impact on housing supply than regulation that affects the output. The lack of construction activity in Ireland since 2010, therefore, is likely to stem from some aspect of the demand for permits, in particular the cost base of housing, including where this is affected by regulation, rather than the supply of permits.

## 6. Irish Construction Costs in Perspective

### 6.1 Measuring construction costs

Between 1997 and 2014, the general price level rose by approximately 50% while Dublin house prices rose by 125%. There are three different methods for measuring the cost of building a house. The first, which underpins the National Housing Construction Cost Index published by the Department of the Environment, factors in only the costs of labour and materials, using a fixed basket of inputs. This narrow measure of costs suggests that build costs are roughly 70% higher now than in 1997 (i.e. an increase similar in order of magnitude to that witnessed in the general price level). This omits any change in the basket of inputs required by regulation.

The second measure, which reflects a slightly broader set of construction costs, including professional fees, as well as regulatory standards affecting renovations and rebuilt properties, is compiled by the Society of Chartered Surveyors of Ireland. This indicates that the cost of rebuilding a home (in this instance, a 95 square metre three-bedroom semi-detached property in Dublin) was more than 150% higher in 2014 than in 1997.

The final measure of construction costs reflects the full costs faced by those building new homes. This captures the impact of changes in building standards, including minimum sizes and energy efficiency requirements, that apply to newly built homes, while omitting direct site costs, which may be residual, i.e. reflect the balance between costs and prevailing house prices. Unfortunately, no time series exists of full construction costs. However, detailed figures are available from Walsh Associates (2012, 2014) for 2012 and 2014.

These figures indicate that the construction cost of a three-bedroom semi-detached house, the most common unit built, rose by almost €10,000 a year on average between 2009 and 2014. This substantial increase of almost one third in construction costs, at a time of static incomes and falling house prices, was driven by regulatory changes, with increased minimum sizes (in 2010) accounting for 40% of the increase, greater required energy efficiency (Part L, 2011) for a further 40% and costs relating to the 2014 Building Control (Amendment) Regulations adding 10%.<sup>8</sup>

### 6.2 Costs relative to prices

An overview changes in these three measures of construction costs, together with changes in general prices and in Dublin house prices, is given in Figure 1.<sup>9</sup> It shows that using a measure of construction costs that is too narrow – such as the CSO input cost index – dramatically understates cost pressures in the construction industry. Whereas prices of Dublin homes were a little more than double their 1997 level in 2014, new-build costs were four times their 1997 level.

This dramatic increase in costs is only now apparent due to two factors. Firstly, the dramatic three-fold increase in build costs in the decade to 2007 was outstripped by a (temporary) four-fold

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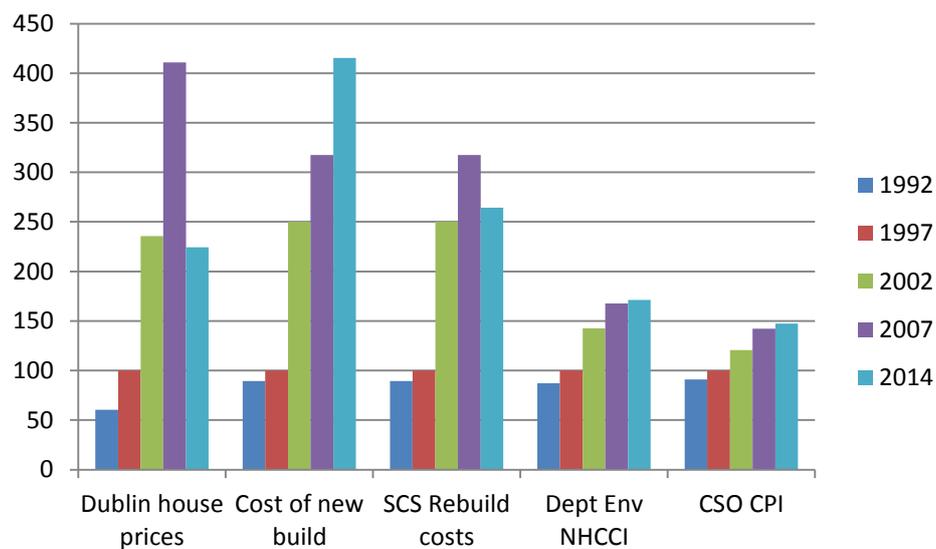
<sup>8</sup> The reduction in Local Authority contributions was, in Walsh Associates' calculations, offset by increased Part V contributions due to increased site values. Figures prepared by Mitchell McDermott Consultants, for Property Industry Ireland, indicate a similar issue with the cost of building apartments, with Dublin City Council minimum standards having increased costs by roughly 20%.

<sup>9</sup> For the 'Cost of New Build' series prior to 2007, the rate of change in the per-square-metre build costs is used as a proxy. This may understate the increase in costs, due to the introduction of Part V contributions after 2000.

increase in prices. This means that home-building would have been more profitable in 2007 than in 1997. The second factor is that, just as Dublin prices fell by 50%, significant additional costs – almost exclusively on newly built homes – were imposed by regulatory changes. As prices fell a half, costs rose by a third.

Taking the typical family home, a three-bedroom semi-detached property that cost roughly €100,000 to build in 1997 would have sold for €120,000, with a profit margin of 20%. An equivalent home would now be worth €270,000 but, allowing for regulatory changes, would cost over €400,000 to build.

Figure 1. Changes in various housing-related indicators, 1992-2014



### 6.3 Costs relative to incomes

The assessment of housing costs can be relative to housing values, to understand profitability and thus new completions, but also relative to incomes, reflecting the underlying connection between housing and the real economy. This is important not only for issues relating to international competitiveness but also in relation to the provision of housing for all, including those on below-average incomes.

The figures outlined above in relation to the increase in the cost of building a new home between 2009 and 2014 mean that the standard mortgage repayment associated with a newly built family home has increased from roughly €960 a month to €1,350.<sup>10</sup> Over the same time, the average household's monthly disposable income has fallen from €3,800 to roughly €3,400. In other words, the fraction of the typical household's disposable income that would be needed to cover the costs of a newly built family home rose from 25% to 40% in the five years to 2014. In the event of interest rates rising by two percentage points, as stress-tested as part of mortgage applications, half of the average household's disposable income would be spent on their accommodation.

<sup>10</sup> This is based off constant mortgage terms, namely 85% LTV, 4.3% interest rate over 30 years, the following principal amounts: €228,000 in 2009 and €321,000 in 2014.

A similar picture emerges from construction costs relating to apartments. Again, setting aside site costs, the break-even cost associated with a newly-built two-bedroom apartment is, as of early 2015, roughly €260,000 including VAT. Where land costs €2m an acre, this leaves a full cost of nearly €340,000 including VAT. This translates into a break-even rent of €1,700 a month (where land is €2m an acre, €1,300 a month without land costs).<sup>11</sup> As of early 2015, the only area of the country where the typical rent for a two-bedroom apartment exceeded €1,700 was Dublin 2. In West Dublin, the average rent was just over €1,000 and in Limerick city, the rent was below €700.

The conclusion is stark, both for prospective homeowners and for taxpayers. There is a clear requirement for an audit of the elements of the cost base in providing new homes, and where regulation can be reformed to reduce these costs. Based on the economic theory outlined in Section 5, this will have a far greater impact on the supply of new homes than regulation of the planning process.

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<sup>11</sup> These figures are based off a desired net yield of 5%, with maintenance costs of 20%. Underlying apartment costs are based off discussions with international developers active in the Irish residential market during 2014.

## 7. Conclusions

This paper has examined how conditions in the Irish planning system varied over the course of the housing market bubble and crash. It did this by utilising a rich micro-level dataset of planning applications across Ireland's 35 local authorities from 1990 to 2013. Based on two illustrations of how this new dataset can be used, it appears there is indeed a link between political make-up of county councils and the likelihood of approval (although this may work counter to expectations) and also between Section 23 status on approval.

On the broader question of how planning conditions relate to the extreme housing market cycle in Ireland from the 1990s to the 2010s, there is little evidence that process regulation in housing market was relaxed at the height of the bubble. If anything, planning conditions appear to be counter-cyclical or more likely acyclical. This adds to the growing consensus that credit, and credit alone, was to blame for the severity of Ireland's housing market bubble and underscores the importance of macroprudential policy to avoid excessive leverage in this sector in the future. From the policymaker's perspective, "lean against the wind" regulatory conditions are unlikely to matter.

Economic theory suggests that supply of building permits is likely to be highly elastic, similar to textbook models of monetary policy, with demand for permits highly inelastic due to the 'dwarf complement' nature of the permit compared to the ultimate good (the dwelling). Thus, the focus needs to be on output regulation and the cost base of building dwellings, given the growing shortage of dwellings in the greater Dublin area in particular. Linking the cost of construction and break-even rent with affordability and the income distribution can help tie this to issues relating to deprivation and competitiveness. In addition to auditing the cost base, it seems obvious that Regulatory Impact Assessments should apply in relation to the impact of changes in minimum standards for construction on the break-even rent.

It is hoped that the dataset constructed for this paper can start a rich vein of research. Having the full text of the permission allows the researcher to carefully address specific questions. It may also help identify the exact relationship between planning and house prices in Ireland. It is now reasonably well established in other countries, such as the US and the UK, that districts with higher land use restrictions or refusal rates suffer from higher house prices. Whether this lies at the heart of the discrepancy between prices in the Greater Dublin area and the rest of Ireland is an obvious follow-on question – the local authority fixed effects presented here are certainly consistent with that story.

## References

- Addison-Smyth, D., McQuinn, K., & O'Reilly, G. (2009). "Modelling credit in the Irish mortgage market." *Economic and Social Review*, 40(4), 371.
- Duca, John V., John Muellbauer, and Anthony Murphy, 2011. "House prices and credit constraints: Making sense of the US experience." *The Economic Journal* 121: 533-551.
- Emilio Fernandez-Corugedo & John Muellbauer, 2006. "Consumer credit conditions in the United Kingdom," Bank of England Working Papers #314.
- Glaeser, E. L., & Ward, B. A. (2009). "The causes and consequences of land use regulation: Evidence from Greater Boston." *Journal of Urban Economics*, 65(3), 265-278.
- Harmon, C. & Hogan V. (2000), "Econometric Analysis of the Housing Market and Projections of Future Developments." In: Bacon, P. & MacCabe, F. (Eds.) *The Housing Market in Ireland: An Economic Evaluation of Trends & Prospects*, Government of Ireland Publications.
- Hilber, C. A., & Vermeulen, W. (2015 forthcoming). "The impact of supply constraints on house prices in England." *The Economic Journal* (online as of 2<sup>nd</sup> June 2015: doi: 10.1111/ecoj.12213).
- Ihlanfeldt, K. R., 2007. "The effect of land use regulation on housing and land prices." *Journal of Urban Economics*, 61(3), 420-435.
- Lyons, R. C. & Muellbauer J. (2015 work-in-progress). "Explaining the bubble: House prices, user-cost and credit conditions in Ireland, 1975-2012." TCD Department of Economics working paper (mimeo).
- McQuinn, K. (2004). "A Model of the Irish Housing Sector." Central Bank of Ireland Research Technical Papers 1/RT/04.
- Murphy, A. (2005). "Modelling Irish House Prices: A Review and Some New Results." Nuffield College (Oxford) Working Paper.
- Quigley, John M., and Steven Raphael, 2005. "Regulation and the high cost of housing in California." *American Economic Review*: 323-328.
- Roche, M. (2004). "Will there be a Crash in Irish House Prices?" *Economic and Social Research Institute Quarterly Economic Commentary*, 1-16.
- Saiz, Albert, 2010. "The geographic determinants of housing supply." *The Quarterly Journal of Economics* 125(3): 1253-1296.
- Stevenson, S. (2003). "Economic, Demographic & Fiscal Influences on Housing Market Dynamics." University College Dublin School of Economics Working Paper.