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School of Real Estate & Planning

University of Reading

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UK Planning Controls and the Market Responsiveness of Housing Supply*

Michael Ball
School of Real Estate and Planning
University of Reading
m.ball@henley.reading.ac.uk

Abstract

There is growing international interest in the impact of regulatory controls on the supply of housing The UK has a particularly restrictive planning regime and a detailed and uncertain process of development control linked to it. This paper presents the findings of empirical research on the time taken to gain planning permission for selected recent major housing projects from a sample of local authorities in southern England. The scale of delay found was far greater than is indicated by average official data measuring the extent to which local authorities meet planning delay targets. Hedonic analysis indicated that there is considerable variation in time it takes local authorities to process planning applications, with the worst being four times slower than the best. Smaller builders and housing association developments are processed more quickly than those of large developers and small sites appear to be particularly time intensive. These results suggest that delays in development control may be a significant contributory factor to the low responsiveness of UK housing supply to upturns in market activity.

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UK planning controls and the market responsiveness of housing supply

Introduction

There is growing international interest in the impact of regulatory controls on the supply of housing.[1] The UK stands out as a country with particularly strict planning regulation, not only in the allocation of land to housebuilding but, also, in the mechanisms for granting of permission to build.

Under planning laws in the UK, proposals that constitute 'development' require planning permission from the relevant Local Planning Authority and around 650,000 planning applications are submitted annually in England alone (CLG, 2007a). Each development is subject to individual investigation and judgement by the planning authority over whether it should be given permission to proceed. Local authorities have considerable discretion over whether they grant or refuse permission but universally are concerned with detailed aspects of any development rather than simple criteria, such as density and height. On refusal, or if the conditions imposed are regarded as too onerous, developers can petition a central government appeals agency on the grounds that the local authority's actions were unreasonable. They may also resubmit as many applications as they wish to the local authority and may be encouraged to submit schemes more closely in line with the planning systems' preferences by planners. Such regulatory processes are inevitably costly and time consuming. This limits both the feasible number of applications a developer may make and raises questions about the time taken to process applications.

For many years, there has been concern that there are unnecessary delays in the evaluation of proposals and the negotiation of any changes to them.[2] It is argued by many that such delays have a real impact upon the performance of the UK economy through increased costs and deferred development (Evans, 1991; Monk and Whitehead, 1999; Pennington, 2002; Evans and Hartwich, 2006). One recent study concluded: *'obtaining planning permission has always been a lengthy and bureaucratic process. And the bureaucracy is increasing'* (Balen, 2006: 8). The Government recognises that delays in planning are affecting development activity and housing supply and is committed to improving the timeliness of planning application procedures through the introduction of targets and a variety of procedural reforms (CLG 2007b and c). Reforms have already been recommended for small household planning applications and implementation of changes is currently under way (CLG 2007d). Larger residential developments (officially defined as those containing 10 or more dwellings) have been one of the most widely debated areas of planning delay. For example, the Barker Reviews (Barker, 2004a & b and 2006a & b) expressed concern over the impact of delays and argued that they contributed to the low price responsiveness of English housing supply.

[1] For example, see Hilber et al., 2008; Cheshire & Hilber, 2008; Bertaud & Malpezzi, 2001; Cheshire & Sheppard, 2004; Malpezzi & Mayo, 1997; Monk & Whitehead, 1999; Rose, 1989; Dawkins &Nelson, 2002; Saks, 2008.

[2] See Audit Commission (2006) and the Killian Pretty Review (2008).

Planning-related delay is not the sole cause of the lengthy periods required to achieve detailed planning permissions. Consultations with other statutory bodies and local populations take time, for instance. Developers may also be slow in coming forward with revisions to schemes or may themselves submit revisions to previously agreed proposals. However, developers clearly need time and incur costs when appealing or reformulating proposals. So, time will be required to prepare the case after a rejection before an appeal is submitted. Similarly, time will be needed by developers in order to reformulate proposals in order to meet the early criticisms of planners of proposed schemes.

A major problem is the limited data currently available to measure delay or to identify its causes. In the absence of good quantitative evidence, information about planning 'delay' – or, more accurately, the time taken to achieve planning permission - tends to be anecdotal. As a result, views are based on the wide degrees of interpretation possible in such information poor environments. In such contexts, positions are more likely to become entrenched and improvements harder to achieve.

The research report here proposes a novel way of investigating the issue of planning delay, based on hedonic modelling of the time it takes to progress sites that are developed through the planning permission process. This time sequence will be called site planning permission time (SPPT). The aim is to provide empirical evidence about the causes of planning delay and to suggest that the methodology, if widely adopted, could become a useful planning tool and an important aid in the monitoring and benchmarking of local development control performance.

The results of the analysis indicate that the most important influence on SPPT is the local authority in question. Although some variations are caused by the type of housing developer and the nature of the residential development, substantial time differences remain between local authorities, ones which seem specifically related to their particular planning practices. Data limitations do not permit the analysis to identify what are the precise causes of such differences but they do highlight the need to investigate local planning practices further and, in principle, the hedonic technique used here could be developed in that direction.

The following sections deal sequentially with the core issues raised by this research. The first argues that a site-based approach to the analysis of planning delay is in a number of respects preferable to one based on single planning applications alone. The second argues that the UK system of planning permission can lead to a protracted period of negotiation between developers and planners, based on differences in their objectives and the institutional rules of procedure associated with local planning activity. Development proposals may be subject to multiple applications for planning permission, either because of re-applications to overcome planning objections to the original proposal or because additional factors have to be dealt with. In consequence, all major planning applications with respect to a site need to be measured in order to derive an accurate measure of site planning time. The following section outlines the hedonic approach to planning delay and the next discusses the sampling methodology used to build up the data set. Then, the results of the analysis are presented and some conclusions drawn.

Focusing on development sites

Researching an uncertain, discretionary process

Whether or not any particular application for planning permission is successful in the UK framework is subject to considerable uncertainty, as it is the product of protracted and complex negotiations

between developers and planners over the content of any proposed scheme. Mayo and Sheppard (2001) refer to this type of planning as stochastic development control, as outcomes are uncertain and the parties are not operating in contexts of full information.

Additional uncertainty arises because any site may be subject to multiple applications for planning permission. A developer has two options when submitting proposals. They can either apply for 'outline permission' and then re-apply for permission related to unresolved 'reserved matters', which are items the planning authority stipulates must be considered in greater depth after outline permission is given; or, alternatively, they can make a 'full' application covering all items within the same decision-making process. The outline route is intended to be quicker and more certain for larger scale projects as not all of the detail has to be agreed at the initial stage but dealt with via reserved matters. Even with the full permission route, subsequent changes to proposals often arise which the planning authority deems to constitute significant changes to the original submission, so the developer will need to apply for additional permissions with regard to them. In summary, with the full application route, multiple applications may either relate to responses to planner objections to initial proposals or to further items not covered by the original submission. With the outline route, they relate to responses to objections and reserved matters. As, in practice, UK development control encompasses highly detailed evaluation of building and site layout, seemingly insignificant matters may require further applications for permission.[3] Overall, resubmissions and additional submissions can be regarded as similar in intent in that the mix of the two reflect developer strategies with respect to trying to achieve approval for a project and planner strategies with regard to the progressing of any scheme according to local planning principles and practices.

A typical major planning application follows a complex but relatively standard decision-making process, one that includes gathering a range of opinion from local residents and a variety of relevant bodies. The broad sequences of the process is shown in Figure 1, though detailed practices vary between local authorities.

A core element of the development control process is the negotiations between planners and developers over a range of issues like environment factors, design, dwelling density, highways, parking and open space provision. In addition, local authorities have powers to secure community benefits (known in England as Section 106 agreements or planning obligations) from development, the most common of which is social housing. Negotiations over such community benefits are undertaken alongside site-related issues and the interaction of the two can affect each other (Burgess et al, 2007 and 2008). For example, requirements for a lower density of development will affect development value which, in turn, may impact upon the required proportion of affordable housing.

The results of the potentially wide range of consultations can affect the outcomes of previously agreed negotiations that then need to be revisited. For example, national bodies such as the Environment Agency can object to proposals in areas likely to flood or local bodies can object to proposals on the grounds of traffic impact. Whilst, in most cases, local authorities can override objections, if they so choose, they usually seek to accommodate such views. Finally, the ultimate decision on most major housing schemes will be made by elected local councillors, rather than

[3] One 'major application' seen by the author referred to the developer wishing to change the type of glazing in the bathroom windows in five houses.

Figure 1: <u>Abbreviated Typical 'Ideal' UK Development Control for Major Housing Proposals</u>

Each application to be processed within 13 weeks > application registered to decision stage

- After developer proposes an application: Pre-application discussions and negotiations (Minimum of 8 weeks advised)
  - between developer, local authority and other agents on the scale and design of the development, the likely S106 contributions, and time frame
- Application formally registered by local authority and case allocated to officer
- Planning officer reviews site history and makes site visit, advises legal services
- Consults statutory organisations e.g. Highways Agency, Water Authority and others depending on the complexity of the scheme
- Local community invited to comment on proposals within a specified time frame
- Planning officer
  - considers application against Local Plan and planning priorities
  - consults with other departments e.g. education, transport, environment, etc.
  - reviews consultation responses/objections
  - invites developer to provide additional information or make minor amendments
  - reports to planning committee with recommendations, unless decision delegated
- Planning committee decision made by vote, after site visit where deemed necessary
  - Approved or Refused
- If rejected, proposal may be modified and resubmitted as major application
  - Back to top
- Or developer may appeal to Planning Inspectorate
  - 16 week target timescale for written appeals, 30 weeks for hearings
- Agree other matters
  - e.g., S106 legal agreement (often in tandem)
- If approved, developer may apply for further permissions
  - Back to top
- Developer has to meet conditions laid down with Planning Approval and have them ratified as met by planning authority

Source: Based on Planning Advisory Service process maps, http://www.pas.gov.uk/pas/aio/25205

delegated to planning officers. Such councillors do not have to follow advice and can (and do) reject (and approve) schemes against professional planner views. Clearly, the development control process is replete with uncertainty and delay for developers. The point was emphasised by the Office of Fair trading in its study of the land holding strategies of major UK housing developers (OFT, 2008).

The routes to success are varied and depend upon strategic interactions between planners and developers and the degree of acceptability by the planning authority of the proposed scheme. Key is the role of negotiation with the applicant and consultation with other parties, all of which takes time and increases the uncertainty of both the outcome and the timing of when the decision will be made. This description of the development control process suggests that in understanding the extent of planning delay a fruitful focus is the total time it takes a scheme to pass through development control.

With regard to projects that are ultimately successful in winning planning approval, agreement from the planning authority may be achieved in one application or it may take a number of amendments to a scheme until both the developer and planner are satisfied that they are in accord on what the development should be. Furthermore, there is likely to be considerable difference in the variance in the time taken for proposals that are ultimately given planning permission and those that are rejected. The variance in the amount of time required to reject proposals is likely to be far greater because some may be rejected out-of-hand, whereas others may only be so after long periods of reapplication, appeal and dispute. What is more, rejected proposals are more likely to contain a wide range of atypical features. For these reasons, when measuring planning delay it seems advisable to concentrate on ultimately successful applications alone.

The research objectives are then to measure the time it takes for a sample of successful schemes to win planning approval, including any intermediate stages of appeals and further planning applications, and to model the influences on that time.

Sampling methodology

With these aims in mind, information from a sample of residential developments successfully completing the planning stage of development in 2006 was assembled for 11 local authorities in Berkshire, Hampshire and Oxfordshire. The authorities are listed in Table 1. The sub-region selected for analysis is probably not representative of England as a whole. It represents one of the more affluent parts of an affluent region, the South East. It was chosen for analysis because it is in a part of the country with some of the most expensive housing outside of London. It is a location where housing demand is far in excess of supply; partly because of the extent of local resistance to further development and its effect on planning policies (Cheshire & Sheppard, 2005). However, the issue here does not concern the planning- influenced level of new housing supply, because that has already been predetermined in local planning strategies, formally encapsulated in 'Local Development Frameworks',[4] before any particular application is made for planning permission. Instead, the object of study here is the speed with which applications are processed. There is obviously a link as processing speed will influence whether already agreed planning targets are going to be meet or significantly under-achieved because of the slow rate at which applications are dealt with.

[4] In practice, Local Development Frameworks have yet to be agreed for many local planning authorities.

Table 1: Local planning authorities in sample

Basingstoke
East Hampshire
Eastleigh
Guildford
Hart
Portsmouth
Reading
Slough
Vale of White Horse
West Berkshire
Winchester
Wokingham

Within the chosen area, all relevant planning permissions pertaining to a specific approved development proposal were traced back in the records of the planning authorities through time to an initial first application. Each stage of the approval process was recorded and the details noted when there was more than one application associated with a development. Although development proposals may change in detail through the negotiation process between developer and planner, specific schemes in their broad outlines are easy to identify from planning records and so can be traced from initial application to final approval. The characteristics of the development, the site, the developer and their agent were all noted and coded. There were some cases of changes in developer during the course of the planning process for particular sites, though such changes turned out to be rare, so that the final developer was recorded in every case.[5]

Only one year of successful permissions was focused upon in order to control for potential time varying influences on the planning permission process. For example, it is likely that when the housing market is booming developers are more likely to want to build more homes and so apply for more permissions. This may slow down processing time as planning departments reach capacity constraints. In the study area, in practice, each authority was a relatively small one and, so, only dealt with a handful of major residential sites in any one year. They may already have had experience of dealing with many of them from previous years as development proposals moved through the planning process. Narrowing the time frame has the additional benefit of limiting the risk of measured times being affected by unknown changes in legislation, local authority practices and the like. Furthermore, concentrating the analysis into one sub-region helps to generate greater commonality between background factors across the surveyed local authorities, including the statutory authorities with which they have to deal.

Sampling planning delay by fixing an end date obviously means that the start dates for the selected schemes entering the planning process can vary by a magnitude of some years. In practice, each local authority deals with only a limited number of sites each year, 15 or so on average for the selected sample, so that the sampling exercise actually captured most of the major residential developments processed by each of them in that year. Subsequent data checking reveal that some

[5] An interviewee pointed out that for large sites the single developer may submit permissions for all others potentially involved in building on the site. However, as large sites were only a small proportion of the sample this feature is unlikely to bias the results.

sites that were believed to be completed in terms of the planning process in 2006 had further planning permissions added in 2007. As there is no way of knowing whether sites have actually been built upon, the sample is right censured, as further permissions may be applied for after the date of the last search of the databases. However, few observations are likely to be affected by this potential bias.

Data on 180 sites were collected, for which in total 354 individual planning applications or appeals were identified (minor and construction-related factors were excluded, such as changes in detailing, the erection of hoardings and demolition orders). A quarter of the sites were greenfield ones and three-quarters brownfield, reflecting strong national and local planning preferences to re-use urban land.

The system of measurement of planning delay proposed here does not encompass the whole of the time of involvement of a site with development control. It was chosen on the basis of being able to identify reliably periods of time from the available written evidence in planning authority files when planning permissions had been applied for and won. Excluded are:

1. Pre-application discussions when developers informally discuss proposals with planning authorities for preliminary exploration of what is likely to be approved or rejected. Such discussions are now encouraged and common and, as noted earlier, may take several months or longer to complete. Unfortunately, not all the sample authorities kept easily obtainable records of the relevant conversations and dates, so pre-application negotiations were excluded.

2. Section 106 agreements Additional time may be spent outside of that recorded in planning applications negotiating development contributions. However, final planning permissions are not issued until s106 agreements are finalised, so most of such negotiations will be encompassed within the time applications are outstanding.

3. Completion and approval of stipulated requirements Planning permission often comes with stipulated requirements and conditions, which may themselves lead to further delay. However, it is hard to track down records of whether and when conditions were accepted as being met by the planning authority, so the time associated with them was also excluded.

Each of these factors potentially extends the time attributable to planning delay. However, it is difficult to be able systematically to measure these items, so the estimates produced in this study are consequently conservative in their approach to the scale of planning delay.

Hedonic modelling of planning time

Approach

Hedonic regressions are widely used in housing market studies (Sirmans et al, 2005). In principle, they can be applied to many situations where a stochastic outcome is simultaneously determined by several measurable independent variables. Therefore, the technique is ideally suited to the problem of measuring the causes of planning delay, because it enables the identification and quantification of specific characteristics influencing the amount of time required to evaluate a development project and award it planning permission.

In principle, the potential influences on the time taken to progress sites through development control may be manifold, especially as UK planning policy gives considerable discretion to individual planning authorities and their officials over the granting of planning permissions. However, in practice, the vast majority of schemes are evaluated on a relatively limited set of criteria.

The main influences can be grouped into four main categories:

1. Site characteristics

   Features of the land to be developed may require longer or shorter evaluation periods. Obvious potential influences include the scale of the development as determined by site area, the number of dwellings to be built and the density of the proposed development. The use of already built on brownfield sites is strongly encouraged within planning policy but they tend to be windfall sites, not specified within the local plan. So, whether a site is brownfield or greenfield may be of importance in which the impact on time could go either way.

2. Characteristics of proposed buildings Specific building types, or mixes of them, may take longer to evaluate, e.g., one-off apartment blocks designed to fit particular sites as opposed to standard type single-family houses.

3. Local authority characteristics The time it takes to go through what are essentially a standard set of development control procedures will depend on the institutional characteristics of local authority and their planning departments. Organisational cultures vary and, by the nature of local government bureaucracies, there are limited pressures to standardise practices across local authorities, either in terms of planning committee operations or officer and managerial practices within planning departments. Scale may also be an issue, with smaller local authorities facing problems in processing major planning applications through their constrained development control capacities. Furthermore, some local authorities may have difficulty in recruiting development control staff.

   As reports are required for each development proposal from a range of statutory authorities, regarding infrastructure, services and environmental matters, the characteristics of those institutions in the locality may matter as well. However, as the study area is relatively limited in scope, there is unlikely to be much variation in their responses across the study area.

   Of importance may be the explicit or implicit strategic behaviour of local authorities and planning officers with regard to development. Some may wish to encourage more affordable housing and, so, expedite its progress while looking less favourably on other schemes. In a similar vein, there might be greater preference for some developers over others, such as small local firms over larger national ones in order to promote local business. More generally, if a local authority wishes to limit development in its area, it may choose to signal this subtly by slowing down the planning permissions process (Audit Commission, 2006). Such a strategy would also discourage developers from submitting applications because it raises the costs of doing business in the area. On the one hand, an authority may explicitly reject developments which then have to be won by developers through the national appeal process in a time and cost consuming way. On the other hand, when a local authority is keen on encouraging housebuilding, it may speed up development control processes.

4. Developer characteristics Some developers may gain planning permission quicker than others for a variety of reasons. For example, they may have more skilled personnel or have valuable

previous experience of dealing with a particular local authority. Some may also be more concerned with progressing applications rapidly than others. Such factors may vary systematically with firm size. For example, local firms may have superior knowledge, while larger national concerns may be more willing to submit repeat applications or to use the appeals process to achieve the preferred developments they want to build in a locality.

Each of these categories of characteristics provides potential explanations for the degree of planning delay and differences in it between particular residential developments. The full list of variables collected in the data survey is shown in Table 2 and forms a subset of such characteristics. The

Table 2: Planning application variables collected in the local authority survey

Variable	Variable name	Details	Format
SPPT characteristics			
Net time applications in planning system	NETDAYS	Total days taken to consider all the major planning applications associated with a site	Days
Net time applications in planning system per dwelling	NETDYPD		Days
Total days associated with planning system	TOTDAYS	Total days from data of first planning application to granting of final planning permission	Days
Total days associated with planning system per dwelling	TOTDYPD		Days
Site submissions	SUBMISS	Number of submissions made	
Difference between total and net days	DIFFD	Days from first submission to last permission when no planning application was active	Days
Difference between total and net days per dwelling	DIFFPD		Days
Local Authority			
Basingstoke	BASING		Dummy
East Hampshire	EHANT		Dummy
Eastleigh	EAST		Dummy
Guildford	GUILD		Dummy
Hart	HART		Dummy
Portsmouth	PORT		Dummy
West Berkshire	WBERK		Dummy
Winchester	WINCH		Dummy
Wokingham	WOKHAM		Dummy
Reading	READ		Dummy
Slough	SLOUGH		Dummy
Vale of White Horse	WHORSE		Dummy
Developer type			
Large housebuilder	DEVLGE	1000 or more units annually	Dummy
Medium housebuilder	DEVMED	200-999 units annually	Dummy
Small housebuilder	DEVSMALL	<200 units annually	Dummy
Housing Association	DEVHA	Social housing provider	Dummy
Other developer	DEVOTH	Not a housing specialist	Dummy
Development type & site characteristics			
Density per hectare	DPH	No. of dwellings per hectare	Number
Site area	SAREA		hectares
Brownfield or Greenfield site	BROWN (=1)		Dummy
Flats only	FLAT (=1)		Dummy
Mixed residential and non-residential	MIXED (=1)		Dummy
Large-size project	LGEPROJ (=1)	More than 100 dwellings	Dummy
Medium-size project	MEDPROJ (=1)	25 to 100 dwellings	Dummy
Small-size project	SMALLPROJ (=1)	Less than 25 dwellings	Dummy
Number of dwellings			Number

hedonic methodology can help to identify significant influences in explaining differences between sites in the time they take to pass through development control. However, it does have limitations due to the confines of the data available. For instance, differences in SPPT between firm types can be identified, but the reasons just hypothesised for such differences – greater larger firm skill, local firm superior knowledge, etc. – cannot be investigated themselves.

The null hypothesis assumed here for the time it takes for the planning system to process any development proposal is that it is random. If the null proved to hold, the modelling results would show that none of the variables aimed at measuring potential influences on SPPT would have significant coefficients and the overall goodness of fit of the estimated models would be low. In policy terms, whether such randomness constituted a problem or a benefit would depend primarily on how long the expected time period to achieve permission turned out to be.

The relative importance of potential influences on SPPT can be evaluated through standard hedonic regressions of the following type:

$$SPPT_i = \alpha_h S_h + \beta_j B_j + \gamma_k L_k + \delta_l D_l + \phi_m P_m + e_i \quad (1)$$

where: $SPPT_i$ is the time taken in the planning approval process from initial submission of a development proposal to final planning permission for the i^{th} observation; S_h is a vector of site characteristics; B_j is a vector of building characteristics; L_k is a vector of planning authority characteristics; D_l is a vector of developer characteristics; and e_i is an error term.

A parsimonious strategy was adopted in the choice of final models, so that they contain only a limited number of key variables. Outlier observations were winsored, based on individual error terms to ensure that the results were not dominated by data outliers.

Results

Two measures of planning process time were estimated for each site. The first, termed net planning days, identified the total amount of time a planning permission was pending i.e. the sum of the dates between when an application or appeal had been lodged and a decision sent out (overlapping dates were not double-counted). Appeals were included within this time frame. The second, termed gross planning days, identified the full period from the first planning application to the final approval of the last planning application made with respect to the development. This second measure includes the time when developers had no outstanding applications for sites but were either preparing resubmissions or strategically holding onto land for such reasons as current market conditions, land banking influences or in the hope of changes in planning policies that would enhance the chance of a successful re-application.

Summary data for these times, measured in weeks, are shown in Table 3. The median value for time in the planning system for a residential development was 44 weeks, with the median total time from initial application to final approval lasting another 18 weeks. This result shows the importance of measuring site times rather than individual planning permission times, because government bench marking data suggest that almost 70% of major planning applications in England and Wales are processed with 13 weeks. The results here suggest that delay is far more pervasive than suggested by that statistic.

In addition, uncertainty over the time taken is high, when measured by standard deviations (Table 3). Although the sample passed normality tests, the tails of the distribution were long. The average

number of permissions require per site was two but some involved considerably more. Around 40% of the sample was approved on the first application but once appeals and resubmissions were required the time mounted considerably. 41% of sites took over a year to be processed and 17% over 100 weeks and 6% over 150 weeks. Moreover, most sites were small with 45% generating 15 dwellings or less.

These aggregate statistics indicate high levels of delay and uncertainty. However, these aggregate statistics may be concealing considerable variations between sites, which the hedonic modelling can help to identify.

Table 3: Development control time for individual sites

Time in Weeks	Total planning days	Net planning days
Mean	84	58
Median	62	44
Standard deviation	72	44

Note: 180 sites from local authority survey
Net planning days = total time with outstanding planning applications or appeals
Total planning days = time from first application to final approval

Table 4 presents the hedonic regression results for the final models. They are in a semi-log form, with the dependent variable specified as either the log of total number of days in the planning system per site or, alternatively, the log of the total number of days per dwelling on each site (i.e. days a site was in the planning system divided by the number of dwellings to be built). Most of the independent variables are specified as dummy variables.

The overall results indicate that a relatively limited number of variables can explain a substantial part of the total variance. This implies that planning process times are systematically influenced by a handful of core factors rather than being random outcomes. Put another way, the discretionary case-by-case approach fundamental to the UK method of development control seems to have a substantial and variable but partially predictable impact on the times taken to process housing development sites. Nonetheless, there is still a considerable unexplained variance so that substantial uncertainty over the time for approval remains.

It was discovered that the time per dwelling formulation provided consistently superior results. In the model formulation investigating total planning time for the whole sample, the adjusted R-squared for the time per dwelling formulation was 0.64, whereas in the time per site formulation it was 0.44. The superiority of the per dwelling specification suggests that some measure of project size is important in capturing the influential factors determining the length of time taken by development control processes, even though they were not fully picked up by the independent identifiers of project size. This result may have arisen because of the profile of project size ranges in the sample. There were a large number of relatively small brownfield sites with one or two blocks of flats of moderate story height, a pattern typical of recent development in Southern England.

Although the per dwelling formulation gives a superior goodness-of-fit, the two different model specifications provide distinct information and this proves to be helpful in interpreting the hedonic results. So, the results from both formulations are shown in Table 4.

The most consistently important variables across both models were the local authority dummies, all of which were strongly significant and explained much of the variance. Project characteristics, perhaps surprisingly, seem to have had little influence on planning process times, with only project size being of significance. The type of developer was also influential to a degree.

Table 4: Time in planning system

Dependent Variable:	LOG(NETDAYS)			LOG(NETDYPD)	
Variable	Coefficient	t-stat.	Variable	Coefficient	t-stat.
READ	4.89	28.95	WOKING	2.5	12.9
EAST	4.97	23.10	READ	2.6	11.5
WOKING	5.31	34.20	EAST	2.6	10.6
HART	5.51	17.97	PORT	3.0	7.6
WHORSE	5.55	20.22	WHORSE	3.2	9.1
WOKHAM	5.62	40.73	WINCH	3.3	17.2
EHANT	5.72	42.03	SLOUGH	3.3	18.3
WINCH	5.80	35.59	EHANT	3.3	18.5
SLOUGH	5.86	42.38	HART	3.4	11.3
GUILD	5.90	37.01	WOKHAM	3.4	19.2
BASING	6.07	50.16	WBERK	3.5	17.4
WBERK	6.12	40.43	GUILD	3.5	16.2
PORT	6.30	17.11	BASING	3.6	21.1
LGEPROJ	0.38	2.75	DEVSMALL	-0.3	-2.1
DEVHA	-0.59	-3.42	DEVHA	-0.4	-2.2
DEVLGE	0.56	4.43	MEDPPROJ	-1.0	-6.8
			LGEPROJ	-2.3	-14.4
R^2		0.50		0.68	
Adjusted R^2		0.44		0.64	
Included observations		136		149	

When days in the planning process per site was the dependent variable, both large projects and large developer dummy coefficients were positive and significant at the 5% level, suggesting that larger projects took longer to process and that larger developers experience longer planning times for their projects. It might be expected that there would be a high correlation between large developers and large sites, but such firms were also highly active in smaller schemes as well and the covariance matrix did not suggest a high degree of colinearity between project and developer sizes. Housing association developments experienced less time in the planning process than others.

Similar types of result were recorded in the days per dwelling format with regard to developer size, although in this case smaller developers as well as housing associations experienced shorter development control times. The hypothesis that larger developers have an edge through their greater resource and skill base seems to be rejected by these results, but the notion that planners favour social housing and local builders is not ruled out.

Interestingly, scale economies in processing planning applications were indicated. Both medium-sized and large projects had significant reductions in time per dwelling taken by the planning

process, with the largest schemes gaining the biggest time saving per dwelling. So, even though larger schemes take longer to process through the planning system on a site basis, there is an overall reduction in the planning time required per dwelling.

The results for the local authority dummy variables are striking. With the hedonic approach, these coefficients can be regarded as indicators of the time it takes each authority to process a 'standard' development application in its entirety, with any time variations due to other potential site and developer influences held constant. Table 5 provides a comparison of the anti-logged regression coefficients for the time per site and the time per dwelling models.

Table 5: Planning process time by local authority

	Site based Net days in planning system			Dwellings based Net days per dwelling		
	no days	no weeks	relative to shortest	no days	no weeks	relative to shortest
READING	133.0	19.0	1.0	13.1	1.9	1.1
EASTLEIGH	143.5	20.5	1.1	13.8	2.0	1.1
WOKING	202.5	28.9	1.5	12.0	1.7	1.0
HART	246.0	35.1	1.8	29.4	4.2	2.4
WHITE HORSE	258.2	36.9	1.9	23.5	3.4	1.9
WOKINGHAM	276.8	39.5	2.1	29.6	4.2	2.5
EAST HANTS	304.6	43.5	2.3	27.2	3.9	2.3
WINCHESTER	331.3	47.3	2.5	26.1	3.7	2.2
SLOUGH	349.4	49.9	2.6	26.2	3.7	2.2
GUILDFORD	364.9	52.1	2.7	34.0	4.9	2.8
BASINGSTOKE	434.7	62.1	3.3	36.9	5.3	3.1
WEST BERKS	454.5	64.9	3.4	33.6	4.8	2.8
PORTSMOUTH	546.2	78.0	4.1	20.9	3.0	1.7

The number of weeks to process a site through from the date of the first application to final approval typically runs from 19 weeks for the fastest local authority to 78 weeks for the slowest or on a per dwelling basis from 1.7 weeks for the fastest to 3.1 for the longest. The difference between the fastest and the worst is over four times on a site basis, although somewhat shorter on a per dwelling basis. So, the scale of the variation in time between local authorities is large. Moreover, given the 13 week benchmark target laid down by government, even the shortest one comes in at 19 weeks almost fifty per cent longer than that target. The hedonic regression results highlight strongly the relevance of tracking the times particular development proposals take to pass through the planning process, if the purpose of the benchmarking strategy is to speed up the delivery of housing supply.

This analysis focuses on only one particular year when sites finally achieved final approval and, hence, deals with relatively few sites in each planning authority. Longer time periods may smooth out some of the variations identified above. So, it may be the case that for the sample some atypical planning applications are influencing relative local authority rankings. However, the scale of the differences is so substantial that it indicates that there are substantial and permanent variations in the efficiency of local authority development control procedures.

The empirical analysis itself cannot discriminate between the potential causes of such delays. Though it may be surmised that they arise from a variety of local 'institutional' factors, such as the culture of the planning authority; staffing levels and turnover; local politics and their influence on planning committees; relative efficiency; how well authorities signal preferences to developers; how easy the authority is likely to change its mind when developers put in further applications or appeals; and the propensity of developers in a locality to challenge the planning authority or continue to negotiate with it.

Time not in the planning system

When sites are subject to more than one application or to an appeal there will be a certain amount of time when there are no active applications but the developer instead is preparing for a new application. Figuring out how to deal with the objections given in written planning application rejections and submitting new applications or appeals takes time, as does the preparing of applications for reserved matters. There is also no fixed time within which reapplications have to be made.

The hypothesis again is that the time not in the planning system should be random across sites. The additional time when a site did not have a planning application or an appeal in process was modelling in the same way as the time in planning; with local authority, site, housing and developer characteristics as explanatory variables.

The regression results are not fully reported here for space reasons but the overall fit was poor, with an adjusted R-squared of only 0.23 for the sub-sample in question. All the local authority dummies were significant but the Pearson rank order correlation coefficient on the values of those local authority dummy variables compared to their values when modelling the time sites were in the planning system, as given in Table 4, was relatively low at 0.46. The only other significant variable was small projects, suggesting plausibly that the larger schemes tended to need more work on them between applications.

The lack of a great deal of consistency between the time in and not-in the planning system results suggests that the hypothesis that there is little relation between the determinants of the two cannot be rejected. Perhaps unsurprisingly, slow planning processes do not necessarily beget slow developer responses, and vice versa.

The number of submissions

Developers may submit more than one planning application for a site, including appealing to the Planning Inspectorate if their proposal is rejected by the local planning authority. Table 6 shows the number of submissions in the site sample. In 38% of cases, there was only one submission, 2 in another 32% of cases, and 14% were associated with 4 or more. So, although many cases were agreed at the first attempt, the majority of sites involved more than one submission and some sites were subject to multiple planning interactions – with over 30% associated with 3 or more applications.

Table 6: Number of planning submissions

No. of submissions	Frequency	% of total
1	60	38
2	50	32
3	27	17
4	11	7
5	6	4
6-9	4	3
TOTAL	158	100

The number of submissions was modelled on the same basis as the earlier hedonics, namely that local authority, developer or site characteristics may account for some of the variation in the number of submissions between sites. The final model is shown in Table 7. The goodness-of-fit was not high at 0.36 for the adjusted R-squared. Yet this is perhaps not surprising. In sampling terms, there is a long tail of additional submissions that affected only a limited number of sites. Furthermore, there is likely to be a great deal of white noise given the subjective nature of resubmissions, involving judgements of whether they will succeed, and variations in how restrictive local authorities are likely to be on requiring major submissions for specific aspects of developments. Despite the somewhat weak overall explanatory power, the model did produce some robust and significant coefficients on a number of variables of interest to this study.

Table 7: Number of submissions per site modelling results

Variable	Coefficient	t-stat.
BASING	1.29	6.90
WOKHAM	1.24	6.18
WBERK	1.02	3.63
SLOUGH	0.95	4.44
DEVLGE	0.89	5.20
SMALLPR	0.66	4.56
LGEPROJ	0.63	3.07
WINCH	0.62	2.67
BROWN	0.61	4.46
DEVSMALL	0.54	4.00
	R^2	0.41
	Adjusted R^2	0.36
	Included observations	127

The strongest influences were identified with a limited number of local authorities and, unsurprisingly, they were related to ones where the number of times sites were involved with the planning process were high: Basingstoke, Wokingham, West Berks, Slough and Winchester. However, interestingly, both developer and site characteristics were also significant. Large sites were associated with more planning applications, probably because of their relative complexity,

frequently controversial nature and because developers may wish to change the dwelling mix as the development comes closer to fruition.

More unexpected was the fact that both the brownfield and the smaller site variables were also significant. This suggests that inner city developments were often strongly contested by developers and planners. Detailed examination of the planning documentation for the site sample indicated particular disagreement between developers and planners over design, density, congestion and parking matters. Developers also had a propensity of trying to alter configurations, especially to change the number or types of apartments or with the aim of improving developments' marketability, for example, by trying to enhance parking facilities.

The results related to small and brownfield sites may indicate a general reason why housing supply has become less responsive over time in England to change in houses prices. Such sites are planning permission intensive, so, as smaller and brownfield sites have become relatively larger shares of all housing development sites, the delivery of housing land has slowed. It is far from clear that planners are aware of the time they spent on these relatively unproductive sites in housing terms. The median number of dwellings per development in the sample was only 16, so a scattered, small nature of housing development was typical of the study area; one in which larger scale sites are highly contested in planning terms and, therefore, very limited in supply.

Conclusions

Planning delay is a major issue in the UK with respect to the regulatory barriers that exist in the provision of extra housing supply. The research reported here examined the time it took for sites to progress through development control in 11 local authority areas in southern England. Evidence on 180 successfully approved sites was gathered. The measured time does not include all of the potential planning delay as it excludes pre-application discussions and the time taken to receive approval for having met the conditions laid down in the granted permission, both of which can be time consuming. Nonetheless, the results show that development control is a lengthy process with a considerable degree of variability and uncertainty over how long it will take.

The results are only for a small area of the country, one subject to intense political debate over competing land-uses. Moreover, the analysis was only able to examine residential development sites that finally achieved full regulatory permission to build in one year, 2006. Therefore, in order to be able to generalise the results there is clearly a need to undertake more analyses of this type across a wider range of places and times. Nonetheless, anecdotal evidence and parallel discussions with planners and developers undertaken as part of this research suggest that the experience monitored here may well be reproduced throughout the UK, especially as the requirements that sites have to go through are now virtually standard nationally. What differs is the efficiency achieved between local authorities in processing developments through the planning system.

The hedonic analysis highlighted that, while site and developer factors may be of significance, most of the difference in time taken for sites to progress through development control was attributable to local authority factors. The scale of the variations was substantial. If the slowest planning authority recorded could have processed equivalent sites as quickly as the fastest one then they would have evaluated housing development sites in a quarter of the time that they did. Reasons for the differences between local authority efficiencies are complex and could not be explored in detail

here, but in principle the quantitative analysis approach adopted here could be extended to hedonic comparisons of practices within local authorities.

If the wide differences highlighted here are reproduced elsewhere amongst the hundreds of local planning authorities in existence in the UK, they suggest that a major cause of the low supply price elasticity of housing in the UK may be found within the substantial variations in the efficiency with which planning authorities undertake development control. This suggests that the introduction of a regime of benchmarking targets introduced in the late 1990s has failed to achieve its aims to date. 67% of major dwelling applications (defined as schemes with more than 10 houses) were decided within the 13 week target in the fourth quarter of 2007, up from 42% in 1999/00.[6] This indicates some degree of success and a greater degree of homogeneous responses than this research has found. A concern must be that perverse incentives have been created. Local authorities may have responded to the incentives offered by meeting time to process planning permissions targets through strategic behaviour responses, say, by increasing the number of rejections or asking developers to withdraw and resubmit applications. The consequence could well be longer times for sites themselves to progress through development control.

One final observation is that even for the most efficient local authority in the sample the typical time to process a development site was almost 50% longer than the target time suggested by government for major applications. Such delays obviously significantly raise developer costs. From a policy perspective, more market responsive housing supply may be achieved by improving the performance of slower planning authorities but there also seems to be a need to think about reforms to the overall nature of development control, which is at the foundation of the UK's uncertain and slow land-use planning control system.

6 Communities and Local Government Planning Statistics.

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