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**Area-wide development viability appraisals:  
the concept of threshold land value within a UK planning context**

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**Abstract**

Area-wide development viability appraisals are undertaken to determine the economic feasibility of policy targets in relation to planning obligations. Essentially, development viability appraisals consist of a series of residual valuations of hypothetical development sites across a local authority area at a particular point in time. The valuations incorporate the estimated financial implications of the proposed level of planning obligations. To determine viability the output land values are benchmarked against threshold land value and therefore the basis on which this threshold is established and the level at which it is set is critical to development viability appraisal at the policy-setting (area-wide) level. Essentially it is an estimate of the value at which a landowner would be prepared to sell. If the estimated site values are higher than the threshold land value the policy target is considered viable. This paper investigates the effectiveness of existing methods of determining threshold land value. They will be tested against the relationship between development value and costs. Modelling reveals that threshold land value that is not related to shifts in development value renders marginal sites unviable and fails to collect proportionate planning obligations from high value/low cost sites. Testing the model against national average house prices and build costs reveals the high degree of volatility in residual land values over time and underlines the importance of making threshold land value relative to the main driver of this volatility, namely development value.

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## 1. Introduction

In the UK, generally speaking, planning permission is required to change the use of, or to physically alter, a piece of land. The grant of planning permission usually leads to an increase in the value of the land – a land value ‘uplift’ or development value. With no other parties involved, this uplift would accrue, albeit notionally, to the landowner. There have been attempts by the UK Government in the past to capture some or even all of this uplift for the benefit of the community (Allmendinger, 2011). However, a development value tax of this kind is not current policy (Healey *et al* 1996, Campbell *et al* 2000). Instead, local government is able to legally impose planning obligations and infrastructure levies on landowners upon grant of planning permission (Monk *et al* 2008) so long as they are economically viable. However, these planning obligations and levies are set in a way that is not directly proportional to the quantum of land value uplift or development value. Instead they are usually based upon the net additional size of development that is proposed. The disconnect between planning obligation / infrastructure levy requirement and value means that, when setting the level of obligations or levy, a test of viability must be undertaken. It is this viability test that has caused significant controversy in real estate development in England over recent years.

Crosby *et al* (2013) discussed some of the methodological issues surrounding viability testing, focussing on the inability of conventional valuation techniques to deal with multi-site appraisals and market shifts. Essentially, policy is set for wide areas and enforced over long periods of time and the viability testing methods struggle to deal with this. In this paper, the viability testing theme is developed by examining the concept of ‘threshold land value’ (TLV).

Area-wide development viability appraisals are undertaken to determine the economic feasibility of policy targets in relation to planning obligations. Essentially, development viability appraisals consist of a series of residual valuations of hypothetical development sites across a local authority area at a particular point in time. The valuations incorporate the estimated financial implications of the proposed level of planning obligations. To determine viability the output land values are benchmarked against threshold land value and therefore the basis on which this threshold is established and the level at which it is set is critical to development viability appraisal at the policy-setting (area-wide) level. Essentially it is an estimate of the value at which a landowner would be prepared to sell. If the estimated site values are higher than the threshold land value the policy target is considered viable. This paper investigates the effectiveness of existing methods of determining threshold land value. They will be tested against the relationship between development value and costs in different property types and changing market state through time.

*Section 2 reviews literature, section 3 describes the modelling...*

## 2. Literature review

### The unearned increment: from tax to contribution to obligation to levy

In the UK land use is regulated and therefore its supply for a particular use is restricted. This produces an economic rent (also known as betterment or development value) equivalent to the uplift in the market value of the site in an unrestricted (free market) state to its market value where its use (and the use of all other sites) is restricted. Following the tradition of the classical economists David Ricardo, John Stuart Mill, Alfred Marshall and Henry George, capturing this uplift in land value generated by the interaction of urban economic change and the planning system has been an integral feature of the UK planning policy. Such capture was defended on the grounds that increased values (unearned income) for private landowners were generated by the regulation of land use in general and the provision of publicly funded infrastructure in particular. In the post-war period, four largely unsuccessful attempts were made to tax a proportion of the land value uplift resulting from planning permission - the 1947 Development Charge, the 1967 Betterment Levy, the 1973 Development Gains Tax and the 1976 Development Land Tax (see Allmendinger, 2011).

Perhaps as a result of political differences, Healey *et al* (1996) argue that the planning system has moved from a *directing and providing* regime to a *negotiated* form of development regulation. So instead of taxing all or part of the uplift in land value, policies have encouraged landowners / developers and local planning authorities (LPAs) to agree a level of 'contribution'. This approach was codified in for the first time in Section 52 of the 1971 Town and Country Planning Act and the subsequently in Section 106 of the 1990 Town and Country Planning Act. These statutes permitted LPAs to enter into agreements with applicants for 'planning obligations' and, following the publication of planning policy guidance (PPG3, 2000), these obligations typically took the form of provision of affordable housing for residential developments over a certain size, as well as payments for infrastructure, amenity and public service provision (Monk *et al*, 2008). They were originally intended to mitigate the impact of the specific development but Campbell *et al* (2000) identified a move from mitigation of development impact to the provision of community benefits.

### The concept of 'viability'

This move prompted the publication of further guidance in the form of Circular 05/05 (CLG, 2005) on the need to test the economic viability of these planning obligations that now had a wider remit. Viability meant a negotiated payment based on the economic viability of the site and its ability to remain sufficiently "profitable" at a given level of planning obligations. As the idea of viability

testing took hold, its remit was extended from development management to forward planning. PPS12 (CLG, 2008) stated that viability considerations should constitute part of the evidence base in Core Strategies and other Development Plan Documents, and PPS3 (CLG, 2011) required LPAs to set targets for affordable housing and assess the likely economic viability of these targets. The Planning Inspectorate has judged some core strategies unsound where there has been lack of robust and credible economic viability testing to justify affordable housing targets and in 2008 the Court of Appeal quashed an affordable housing target based, not on robust credible evidence of viability, but on housing need evidence alone (HCA, 2008). Following the enactment of the 2008 Planning Act by the then Labour Government and the introduction of the 2010 Community Infrastructure Levy Regulations<sup>1</sup> by the Liberal Democrat / Conservative coalition Government, we now have a standard charge based approach for offsite infrastructure, the setting of which is also subject to a viability test.

The National Planning Policy Framework, published in 2012, supersedes earlier planning guidance in relation to planning obligations. It retains the need for forward plans to ensure that “...the scale of development identified in the plan should not be subject to such a scale of obligations and policy burdens that their ability to be developed viably is threatened.” More specifically it states that planning obligations should only be sought where they are necessary to make the development acceptable in planning terms; directly related to the development; and fairly and reasonably related in scale and kind to the development.

The framework also takes account of the fundamental shift in market conditions since 2008 by stating that, where obligations are being sought or revised, LPAs should take account of changes in market conditions and be sufficiently flexible to prevent planned development being stalled. With regard to the issue of viability in particular, the level of planning obligations “... should, when taking account of the normal cost of development and mitigation, provide competitive returns to a willing land owner and willing developer to enable the development to be deliverable.” Financial viability appraisals are therefore necessary to assess the extent to which a planning policy can be met, or the extent to which adverse impacts of development can be mitigated. Moreover, LPAs should assess the likely cumulative impacts on development resulting from existing and proposed development regulations (such as the Code for Sustainable Homes) planning obligations (including affordable housing requirements) and Community Infrastructure Levies. The cumulative impact should not put implementation of the development plan at serious risk and should facilitate development throughout the economic cycle, in other words, kept under review. This includes key policies such as housing, which are underpinned by Strategic Housing Land Availability Assessments. These must “...establish

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<sup>1</sup> SI 2010 No 948

realistic assumptions about the availability, suitability and the likely economic viability of land to meet the identified need for housing over the plan period.”

### Testing viability – development viability appraisals

Viability modelling has become a key component of planning policy and development management (see appendix 1 for a summary of the approach). However, a key problem, as Campbell *et al* (2000) note, is that:

“...the expansion of the use and scope of planning obligations has been regressive. Economic factors determine property values. Physical factors such as the scale and nature of development determine development impact. Property values display marked regional, sectoral, and temporal variation. The costs of physical works or of the service provision necessary to mitigate development impact vary comparatively little. Consequently, planning obligations impose relative costs on development which differ with market strength. Developments in weak markets are faced with much greater cost burdens than developments in strong markets.”

They showed that, because house prices and land values vary markedly over time and space (and construction costs do too but to a much lesser extent):

- The cost of planning obligations are a higher proportion of gross development value and residual land value in lower value areas than in higher value ones
- Retail fairs better than industrial land use
- Boom times fair better than recessions
- Greenfield sites are capable of releasing more planning obligations than more marginal brownfield sites so they may be favoured by planning authorities when allocating sites in development plans and dealing with applications.

These findings accord with earlier work by Henneberry and Goodchild (1996) who found that:

- If you charge impact fees<sup>2</sup> at the start of a development then, all other things equal, longer developments incur higher costs due to the opportunity of cost of capital, i.e. financing the costs over a longer period of time.
- The ability to pay the fee depends on development economics and, specifically, the value:cost ratio of the development (this is picked up later)

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<sup>2</sup> Although impact fees were not introduced, they are essentially the same as planning obligations and, in particular, CIL.

- Area-wide fee regimes are blunt due to the heterogeneity of development type (in terms of land use), location and market state.

The authors noted that, because impact fees are related to development costs rather than to development values, they affect development viability in London and the South East to a much lesser extent than in other regions, and would affect industrial and housing schemes much more than office or retail schemes. For instance, let's assume there are two greenfield sites, one in a high value area and the other in a low value area. Both require a contribution of £10 million towards highway improvements. In the low value area, the uplift<sup>3</sup> generated by the granting of planning permission is £20 million. Effectively the landowner receives 50% of the land value uplift and the community receives the other 50% for highway improvements; the 'tax' rate is 50%. In the high value area, the uplift generated by planning permission is £50 million so the tax rate is 20% (£10m to the community and £40m to the landowner). Whether this is regarded as fair or appropriate involves ethical judgements about how much of uplift should be 'captured' by the community and the extent to which this should be related to land value uplift (the 'income'). Essentially, if area-wide viability targets are set too high, then marginal sites will suffer. They commented that "these outcomes would only be avoided if discretion existed regarding locational and sectoral variation in the setting of fee levels."

Crosby, et al (2012) examine the basis of viability in development within the context of development appraisal modelling and the interactions between development values, land values, profits and costs including the impact of obligations. They show that the imposition of obligations theoretically falls on the land value and that developers should price any additional cost expectation into their bid for the land. It is only where the developer is also the landowner that any change to obligations impacts on profitability. The authors discuss the contradiction between the need to retain viability of individual sites and the setting of area-wide standard obligations and the introduction of community infrastructure levies, which also tend to be standardised across an area, They argue that the individuality of development schemes and the resulting variability in site values makes area-wide assessments difficult, if not impossible, Add to this changes in market state through time and they argue that the inappropriate use of development modelling may not deliver the required policy objectives of bringing forward land for development by appropriately rewarding the landowner and developer while also obtaining benefits to the community and mitigation of the impact of development. Echoing these concerns, the HCA state (2012: 5):

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<sup>3</sup> This uplift is defined as the difference between value of site in current use (ignoring the effect of potential planning permission) and value of site with planning permission for new use (ignoring the effect of planning obligations).

“Establishing a viability threshold for land is a difficult task, combining the issue of the values of sites in their current use, incentives necessary for landowners to release land, and the influence of local planning policy on the land market.”

### The benchmark - threshold land value

The requirement of LPAs to undertake area-wide development viability appraisals has given rise to a term ‘threshold land value’, being the “...the value at which a typical willing landowner is likely to release land for development, before payment of taxes...” (Local Housing Delivery Group, 2012: 28). If a site has planning permission for its existing use and there is no possibility of permission for any alternative use then its value is based on this existing or current use only. With the *prospect* of permission for alternative use(s) there may be a higher, but suitably risk-adjusted, alternative use value. If the site is *granted* planning permission for an alternative use then the risk is much reduced and a, usually higher, development land value results. The question is how much of the uplift from current use value to development land value is needed to entice the landowner to sell. TLV is, therefore, based on current use value plus a proportion of uplift; it is a hypothetical construct. The actual price at which a landowner would sell at will, by definition, be a market price and will have priced in planning policy requirements.

Because TLV is hypothetical, various approaches to deriving it have emerged: comparison with market value, current use value with or without an additional sum, apportioned percentages of the uplift from current use value to residual value, and a proportion of the estimated value of the completed development scheme (The Local Housing Delivery Group, 2012). The percentage uplift from current use value to residual value is a form of development land value taxation and the proportion of completed scheme value would seem to be a simple heuristic rather than a logically based threshold value. Comparable market prices, in the rare cases where they exist, will have been reduced to the extent that they ‘price in’ the prospect of planning policy requirements. Consequently, to use them as a basis for the estimation of these policy requirements in an area-wide viability model is circular. It might be argued that valuers are capable of adjusting market evidence of land prices to take this into account (see RICS, 2012 for example) but there has been no investigation as to whether this is a robust approach. The Local Housing Delivery Group (2012) recommends that TLV be based on current use value plus an ‘incentive’ premium or on alternative use value (although alternative uses require planning permission and would be subject to policy requirements, so alternative use values, like market values, would be price-adjusted to reflect these). The report suggests that the premium above current use value should be determined locally and be based on evidence. There is no hint as to how this should be done or where the evidence might come from. Indeed, the complexity surrounding



the use of TLV is revealed when reasons as to why the premium might significantly vary are described (Local Housing Delivery Group, 2012: 30)

- In areas where landowners have long investment horizons and they are content with current land use, the premium will be higher than in those areas where key landowners are more minded to sell. Essentially, the premium will vary over space.
- Landowner's return will vary substantially depending on whether the land is urban or rural. The report suggests referring to "...market data and information on typical minimum price provisions..." and "...if local market evidence is that minimum price provisions are substantially in excess of the initial benchmark assumptions, then the plan will be at significant risk unless Threshold Land Values are placed at a higher level, reflecting that market evidence" (p30). There is significant blurring between a TLV set using current use value plus premium or market prices.
- Similarly, due to the effect of hope value, landowners' returns will differ substantially between small, edge or settlement, greenfield sites and other large greenfield sites.
- A 'viability cushion' should be established to ensure 'marginal' sites still come forward, to guard against the potential that small changes to external circumstances could render many sites unviable. In other words, the premium will vary over time. There is no guidance as to how such a cushion should be derived or what magnitude it should take.
- Some sites are allocated as development sites in the development plan and costs are incurred in their promotion

The drawbacks of TLV based on current use value plus a premium are twofold. First, there is no empirical basis for the level incentive premium and it is unlikely to be the same for all types of development or points in time. As the Prince's Foundation for the Built Environment<sup>4</sup> asks: will landowners sell at prices developers can afford given the scarcity of capital, burden of sunk land costs, level of debt on balance sheets, money needed to finance full range of infrastructure levies and planning obligations? Some landowners are locked into option agreements that they cannot fulfil, others (such as family landowners) have investment horizons that are far longer than most. Others are becoming partners with developers and house builders, the contractual details of which cannot be reflected in a simple premium.

Second, if the premium is based on a percentage of current use value, this does not relate to the value of the land in its developed state. Rational landowners would seek a return that reflects the value of the proposed development. Geltner *et al* (2007) suggest that this return comprises two value premiums over and above current use value. The first is a 'growth premium' which reflects the present value of the future growth in value of the land after it has been developed. The second is an 'irreversibility

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<sup>4</sup> Delivering Sustainable Urbanism: SLIM - A Strategic Land Investment Model, The Prince's Foundation for the Built Environment, undated

premium' which reflects compensation for giving up the option to develop some time in the future. Basing TLV on current use value plus a percentage of current use value would not properly account for these premiums.

This issue of landowner's return, based on a share of uplift in value was raised by Barker (2004). Planning Gain Supplement (PGS) was to be based on the uplift between current use value and 'Planning Value'. This raised some methodological questions: how would a valuer be able to find evidence of current use value (defined as market value without hope of future development). Planning value was to reflect all factors affecting market value including planning obligations. In fact, planning value would 'often be the price paid for the land' and 'it will often fall to the developer to take account of PGS liability when negotiating the purchase of the land' (p7). So planning value is reduced to reflect PGS liability and is itself used to determine the amount of PGS liability. The circularity issue wasn't resolved by Barker. Recent guidance from the Homes and Communities Agency (HCA, 2012a) provides little clarification, stating that establishing a TLV is 'difficult', although it does expand on this by explaining that:

“The threshold of existing use value, or existing use value plus a premium, may not be the best benchmark for testing viability in some land markets, particularly land currently in agricultural use. In these cases, because the value uplift resulting from a planning consent is much more significant than for urban sites, landowners (sic) expectations may be better benchmarked by a comparable or other assumed land value” (HCA, 2012: 5)

For brownfield sites (existing commercial or residential uses) Hill (2011) suggests a minimum margin of 20% over existing use value. For large, strategic greenfield sites, land values of £200,000 to £400,000 per net developable acre would be required to encourage landowners to sell. This would be based on values subsequent to any option agreements, abnormal costs and planning obligations. Landowner's return may be influenced by sunk costs, tax position and supply and demand, nature of the existing use: whether the site is brown or green-field, urban or rural. Because different elements of a scheme could have different risk profiles, different returns could apply.

An analysis of 19 affordable housing viability studies (Coleman *et al*, 2012) revealed that the predominant output is residual land value and nearly half of the studies regarded a scheme as viable if the residual land value exceeded a threshold land value that was equivalent to existing or alternative use value. A similar number added a premium of 15-30% of existing / alternative use value as an incentive to the landowner to sell. A minority of studies specified market values as benchmarks.

There would appear to be two issues of concern in relation to the concept of TLV; the way in which it is set and the level at which it is set. Getting these 'wrong' would, it is argued, manifest itself in two ways; an unexpectedly low number of development sites would come forward (i.e. land owners would be reluctant to sell) and marginal sites in particular would not come forward. These arguments are tested below.

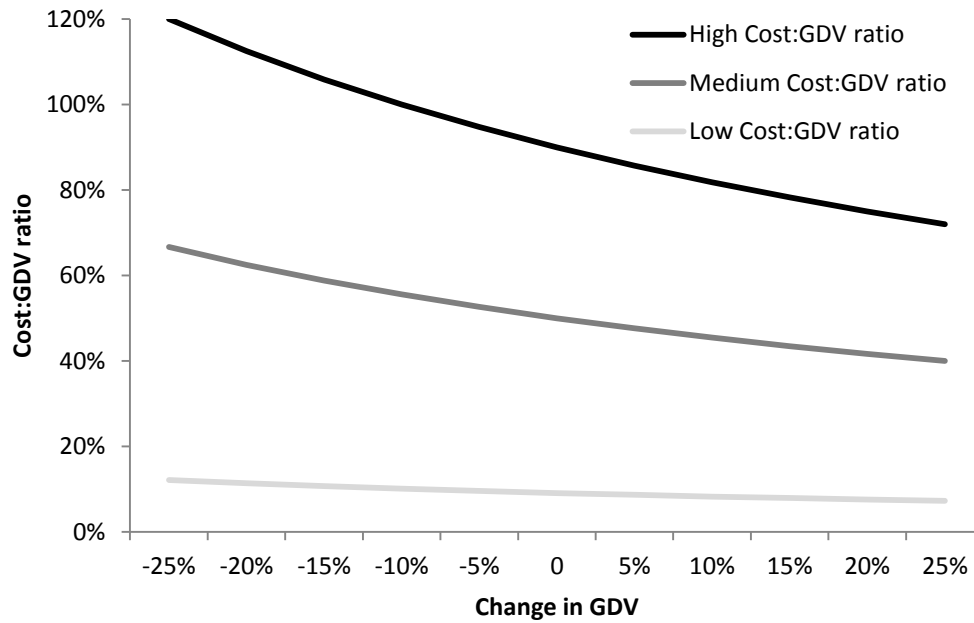
### **3. Modelling threshold land value**

#### Marginal sites and TLV

On sites where development costs form a high proportion of the value of the completed development (i.e. the land value is small in relation to both completed development value and total building costs), small changes in either development costs or completed development value (usually referred to as gross development value or GDV) result in magnified shifts in residual land value. Put another way, the higher the cost-to-value ratio the more sensitive residual land value is to changes in value. For example, take three sites:

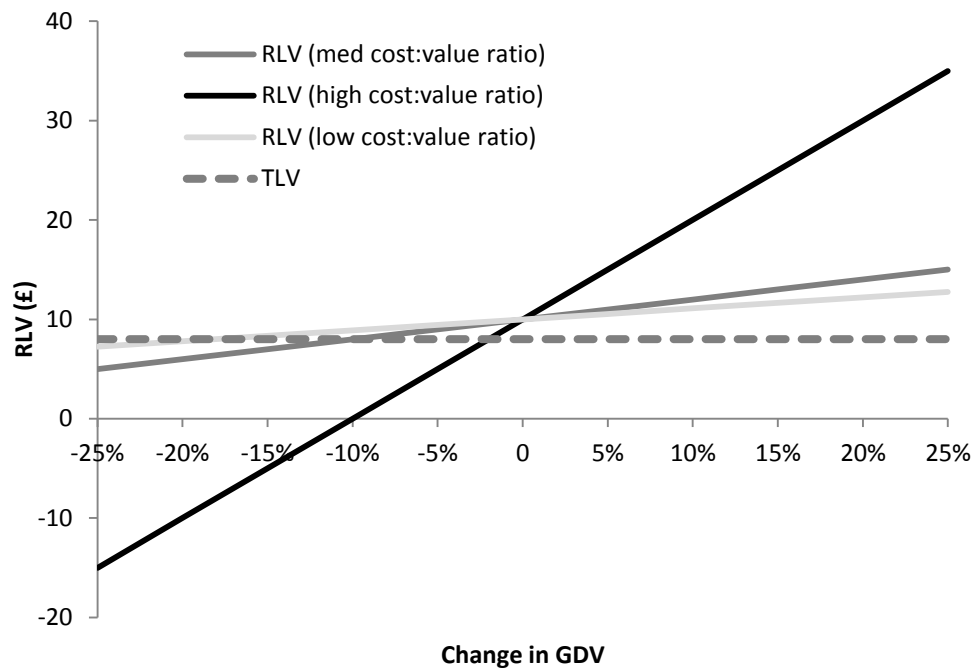
- (a) A high cost-to-value ratio, where building costs are a high proportion of GDV (i.e. a low residual land value in relation to both build costs and scheme value);
- (b) A medium cost-to-value ratio, where the building costs and residual land value are the same proportions of GDV; and
- (c) A low cost-to-value ratio, where building costs are a small proportion of GDV (i.e. a high residual land value in relation to both build costs and scheme value).

In each case the GDV is 100. In (a) the cost-to-value ratio is 90%, in (b) it is 50% and in (c) it is 10%. If it is assumed that costs remain constant but the value of the GDV changes figure 1 shows how, depending on the level of the cost-to-value ratio at the start, these changes have different effects on the cost-to-value ratio; the higher the ratio, the greater the impact. This has implications for residual land value and TLV.



**Figure 1 Impact of changes in GDV on the cost-to-GDV ratio**

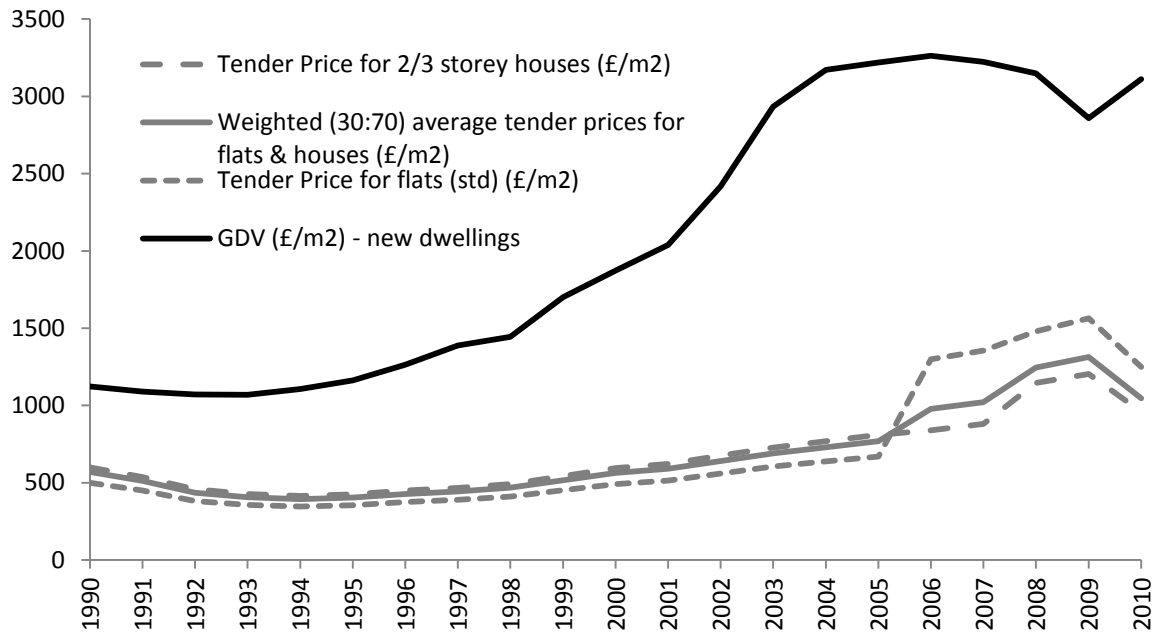
To illustrate the impact on residual land value of a fixed or absolute (as opposed to relative) TLV, assume there are three sites which all have the same residual land value of 10 but different cost-to-value ratios – (a) 90%, (b) 50% and (c) 9% and that these sites are subjected to the same shifts in GDV as in figure 1. Figure 2 shows that the residual land value of site (a), with the high cost-to-value ratio, is very sensitive to shifts in GDV whereas sites (b) and (c) are much less so. If the TLV is set at 8, it only takes a very small drop in GDV to render site (a) unviable. It is highly geared and that is why developers seek higher risk-adjusted returns from sites with high cost-to-value ratios (complicated urban, brownfield redevelopments) than they do from those with low ratios (greenfield volume house-building).



**Figure 2 Impact of the cost-to-value ratio and changes in GDV on residual land value**

It is possible to test this model empirically using data from the residential sector of the real estate development industry. Build costs for the period between 1990 and 2010 were obtained from Davis Langdon (2013). Taking the simple average of the high and low tender prices (£/m<sup>2</sup>) for constructing (a) standard flats and (b) two to three storey houses, to reflect a typical set of residential build costs, these two averages were then aggregated by calculating a weighted average – 30% weighting on (a) and 70% on (b). Simple average prices for new houses between 1969 and 2010 were obtained from DCLG Live Table 505<sup>5</sup>. Assuming a uniform floor area of 70 square metres, these prices were converted to a price per square metre to create an estimate for GDV (£/m<sup>2</sup>). Figure 3 shows the remarkable increase in GDV since 2000 followed by the sharp reduction in prices after 2008. After a slow decline in the early part of the study period, build costs rose very slowly until around 2005 when the rate of increase rose significantly and dramatically in the case of flats. Since 2009 build costs have fallen for all dwelling types.

<sup>5</sup> <https://www.gov.uk/government/statistical-data-sets/live-tables-on-housing-market-and-house-prices>



**Figure 3 Trend in residential build costs and house prices 1990-2010**

These two key variables, build costs and house prices, were combined with a simple set of assumptions in a residential residual valuation model that is set out below for the 2010 input values. Planning obligations are not included as they form part of the residual in this model. The output from the model is a residual land value.

#### Assumptions

Density (dwelling per hectare)	40
Average dwelling size (m2)	70
Number of dwellings	50
Average house price (£/m2)	3,111
Proportion of market dwellings	100%
Build costs (£/m2) weighted between flats and houses	1,047
Loan (% p.a.)	8%
Development period (yrs)	2

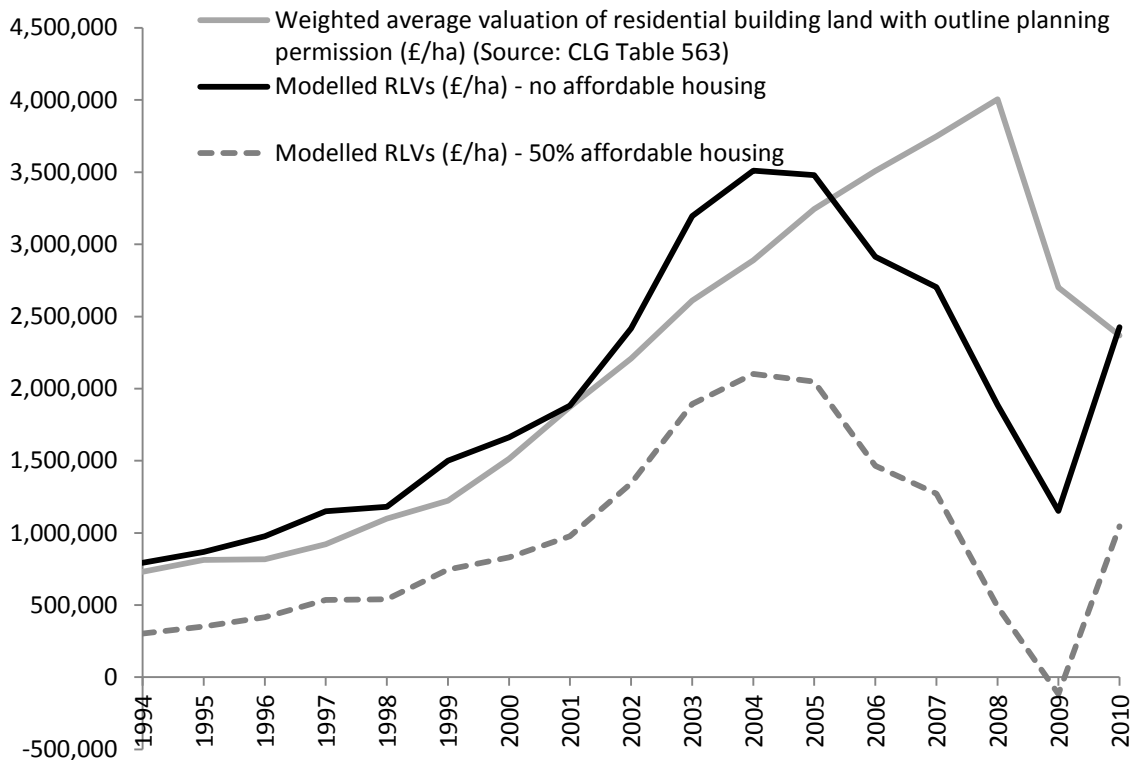
#### Valuation

Gross development value (GDV)		10,888,500
Building costs	-3,664,500	
Fees (professionals, sales and marketing) @ 10% bldg costs	-366,450	
Infrastructure and abnormal costs @ 15% bldg costs	-549,675	
Building costs and fees	-4,580,625	
Interest on half total costs and fees for whole building period	-381,108	
Total development costs	-4,961,733	
Developer's profit @ 20% GDV	-2,177,700	
Total development costs plus developer's profit		-7,139,433
Future residual balance		3,749,067
less interest on land and acquisition costs over the development period		0.8573
Net residual land value (RLV)		<b>3,032,284</b>

RLV as a % of GDV  
RLV per hectare (gross)

**28%**  
2,425,827

Data on development land prices is notoriously difficult to obtain even for residential development land. The only official source (which is no longer updated) is DCLG Live Table 563<sup>6</sup> and these figures are plotted alongside the modelled residual land values (RLVs) in figure 4 for the 20-year study period. Whilst the two data series track quite well until 2005, the modelled RLVs peak at this point and then fall as high build costs (primarily relating to apartment construction) combine with stalled house prices to dramatically reduce the geared residuals. The official statistic, which is based on the Valuation Office Agency's estimates of residential building land with outline planning permission, clearly lags this effect by some four years.



**Figure 4 Residual land values 1990-2010**

According to the RICS (2012a), agricultural land values ranged between £5,000 per hectare in 1994 and £16,300 per hectare in 2010. In 2005 the Valuation Office Agency published land values for:

- Industrial and warehouse land values (£/ha) for Eng & Wales (excluding London) - £643,000 per hectare
- Industrial and warehouse land values (£/ha) for London - £1,767,000 per hectare

<sup>6</sup> <https://www.gov.uk/government/statistical-data-sets/live-tables-on-housing-market-and-house-prices>

- Class B1 land values (£/ha) for Eng & Wales (excluding London) - £749,000 per hectare
- Class B1 land values (£/ha) for London - £755,000 per hectare

All of these are far below the RLV of £3.5m per hectare for the same year and setting a TLV on the basis of either agricultural or commercial/industrial land use would not reflect the geared nature of the residual land value out of which the planning obligations would be paid.

If we introduce affordable housing at a level of 50%, evenly split between social rented, affordable rent and shared ownership tenures (valued at 33%, 50% and 70% of market value respectively), the dashed line in figure 4 shows the drop in RLVs to the extent where, in 2009, there was a negative RLV at the national level. Over the past 20 years on average RLV was 28% of GDV with a standard deviation of 8%. In figure 5 the vertical axis is RLV as a percentage of GDV and 28% is included as a dashed horizontal line. With 30% affordable housing, landowners would have achieved the average return would have been achieved in five years (2001 to 2006) during the 20-year study period. Setting a uniform TLV to achieve a consistent level of planning obligations in such volatile market conditions would seem untenable.

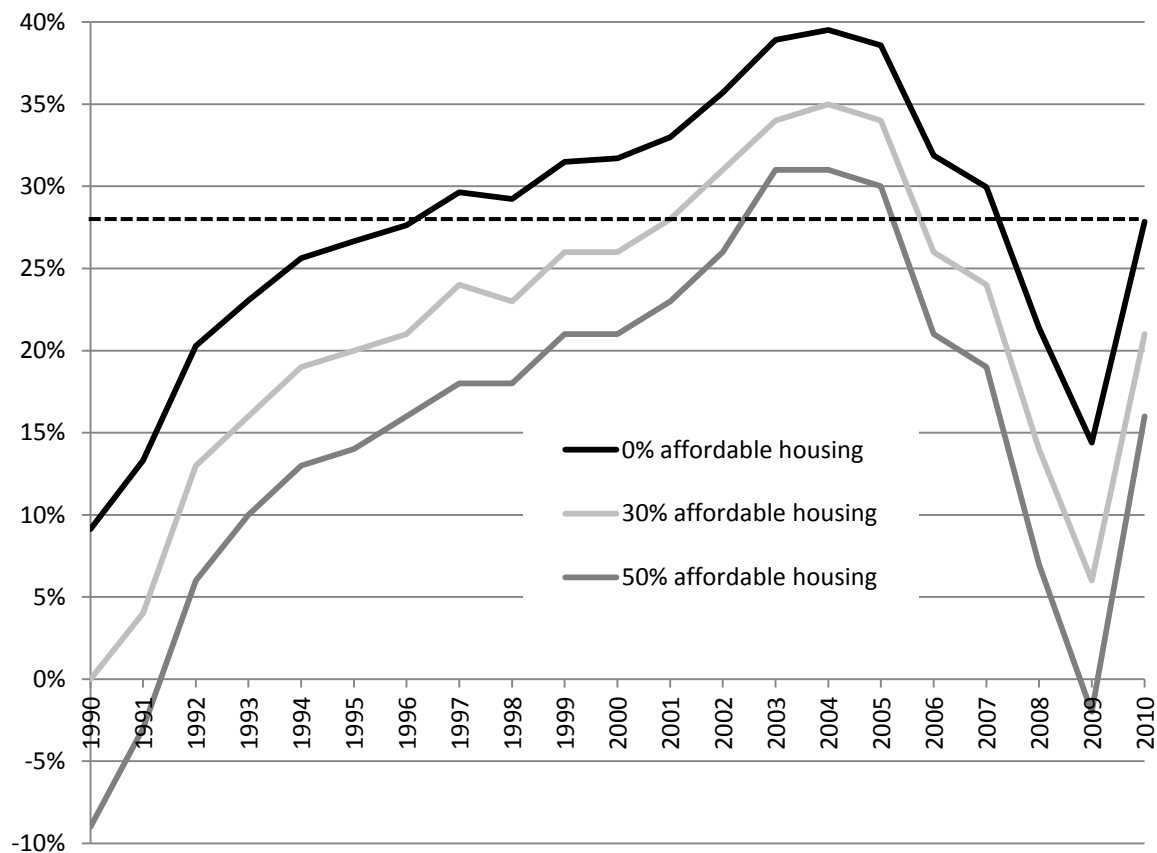


Figure 5 RLV as a % of GDV assuming 0%, 30% and 50% affordable housing



## Conclusions

Granting planning permission for a change of use creates uplift in land value. To encourage supply, part of this uplift will flow to landowners. To encourage development to take place, some level of return to developers is required to compensate for risk. Landowners' return might be regarded as relatively fixed whereas developers' return highly geared and very volatile. Within this context, local authorities are required to set economically viable targets for planning obligations and levies that are sustainable over wide geographical areas and long periods of time. This is proving difficult and the difficulties have been compounded by the moribund market – setting obligations and levies too high risks choking off supply.

When testing economic viability in the planning system, in most cases the test of viability has been whether, at a given level of planning obligations (whether affordable housing and/or Community Infrastructure Levy), the residual site value is higher than a threshold land value. If the residual land value assuming the levels of planning obligations is higher than the threshold land value, then the policy is regarded as deliverable. Perhaps not surprisingly, the setting of threshold land value has been at the heart of the controversy regarding the application of development viability modelling. There is no definitive guidance on the level of this threshold and it is a major source of uncertainty in modelling of development viability for planning policy formation. The problem centres on a static viability model that is applied through time: fixed amounts of planning obligations mean that landowners receive excessive prices in an upturn relative to planning obligations and insufficient return in a downturn. Various compromises have been introduced including site-by-site negotiations, low, dynamic targets and differential targets for various types of change of use and locations. However, all of these compromises shy away from a more equitable split of uplift.

Development viability of a specific site, at a given level of planning obligations and Community Infrastructure Levy, is contingent upon its level of development revenues and costs and upon the land value required to incentivise the landowner(s) to release the site. But incentivising landowners to release land is a complex issue. Landowners' expectations (and their behaviour) have been formed in a specific set of market and regulatory conditions. In many cases in the past, these conditions have created substantial value uplifts when planning permissions are granted. Landowners have a tendency to anchor on (or benchmark against) high returns (land prices) received in the past so a scheme will not be viable (and land will not be released to the market) unless they receive them in the future. Consequently, when land values fall below the benchmarks achieved in the past, land supply tends to fall. This means that developers face a fixed land cost, although the extent to which it is fixed will depend on many factors, not least the location and type of change of use that is envisaged (the heterogeneity issue).

Viability is very sensitive to differential changes in GDV and costs but current policy requires planning obligations and levies to be tested for economic viability in forward planning documents, documents that remain in force for significant periods of time and often over entire market cycles. Consequently, planning obligations are largely a fixed cost; ‘largely’ because, although a Community Infrastructure Levy is set, Section 106 costs can be negotiated on a site-by-site basis. So planning obligations are charged on a geared surplus or residual sum, and the charging is done on an area-wide basis over market cycles. As a result Community Infrastructure Levies have tended to be quite low and planning obligations remain as the ‘flex’ to be negotiated at the time a planning application is submitted. This means that opportunities to obtain higher amounts of levy or obligation from more profitable sites are lost whilst, at the same time, more marginal sites may be made unviable.

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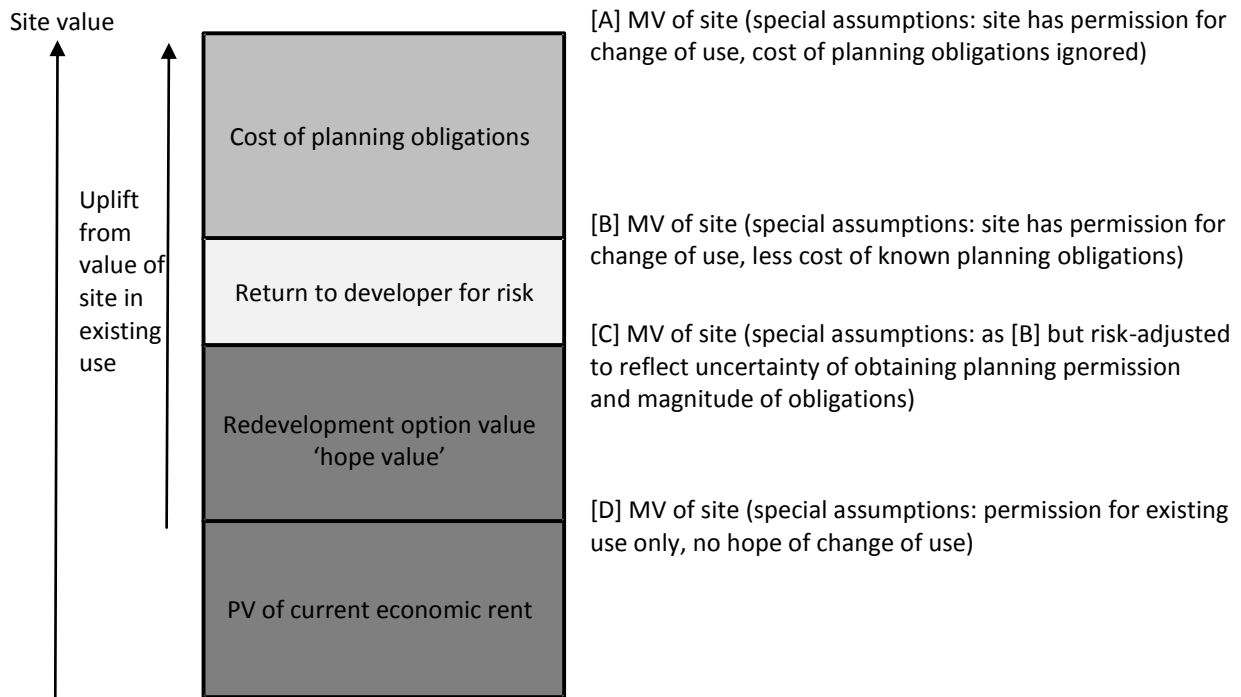
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## Appendix 1

The basic viability model is known as the ‘residual method’ and simply deducts the estimated costs associated with the change of use from the estimated value of the finished scheme. These costs include an adequate risk-adjusted return to the developer for securing planning permission and the cost of CIL and planning obligations. If there is a positive remainder (residual balance) then that represents the land value, and if sufficiently above the value of the land in its existing use to persuade the landowner to sell, this indicates viability. So the land value uplift must cover compensate the landowner (in the form of an acceptable land price), the developer (sufficient profit) and the community (acceptable level of planning gain in the form of CIL and planning obligations), but quantifying the extent to which they are covered is very difficult. The block in figure 1 represents the value of a site – zero at the bottom, market value with planning permission for change of use at the top. Starting at the top, [A] represents the value of the site assuming planning permission. [B] represents the value of the site with planning permission less the cost of the known planning obligations. If the site does not have planning permission a rational purchaser would pay a risk-adjusted price [C] that reflects expectation of securing planning permission and paying expected planning obligations and levies are charged<sup>7</sup>. If [D] represents the value of the site in its existing use, the uplift from [D] to [C] represents the landowner’s ‘hope value’, an increment that reflects the scarcity of suitable sites for change of use and the landowner’s monopoly supply position. If the planning obligations and levies are set too high, they may erode the landowner’s hope value to the extent that the incentive to sell is removed.

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<sup>7</sup> Planning obligations may also reduce value rather than (or as well as) raise costs by requiring affordable rather than market housing.



**Figure 1 – components of development value**

There is a great deal of uncertainty in the residual method. Although there may be a fairly predictable set of costs associated with parts of a (re)development project, there will inevitably be unforeseen costs and delays. Typically, these are handled by a contingency allowance and adoption of a suitably risk-adjusted return to the risk-taker; more sophisticated risk management approaches have yet to be widely adopted. Nevertheless, given very high yet relatively predictable costs (building, fees, finance, etc.) and more volatile revenue (rent, yield, letting void), developers face high operational gearing. Most projects are lengthy and costs, values and market activity will change during the development timeframe. Little or no forecasting is undertaken in current residual appraisals and so this represents additional risk to the developer. Because of inherent uncertainty in the model and the highly geared nature of the residual land value, the method comes with two major health warnings: it's highly site specific and has a very limited shelf-life.

As far as viability modelling is concerned, the method is used to model the impact of different amounts of planning obligations and levies on residual land value. To address the first health warning – that the method is site-specific – local authorities test a range of sites typically found within their jurisdiction. To address the second health warning, sensitivity analysis is carried out to model the impact of changes to the values of key variables on residual land value. However, sensitivity analysis does not reveal the nature of the impact of changes in drivers and inputs, and this is important because if planning obligations make some (marginal) sites unviable then they don't pass the viability test.