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Residential developer behaviour in land price determination

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Summary

This paper examines residential developer behaviour in the determination of land prices during the late 1980s and 1990s. Drawing upon a representative survey of volume residential developers in England, it is argued that expectations of future trends in housing demand and constrained land supply policies have combined to inflate the price developers are prepared to pay for land, in order to retain a presence in particular housing markets. Empirical observations suggest that the consequences of such actions have led to destabilizing effects upon land price movements, developer profitability and upon the composition of the wider industry, notably delaying market recovery.

Keywords: residential developer, land prices, housing cycles, planning

1. Introduction

Speaking to an audience of practitioners and academics in London in 1994, Goodchild stated '*the housing land market and [especially] housing land prices have arguably been the achilles heel of the postwar planning system*'. Hooper (1994) maintained that the decades of the 1970s and 1980s were concerned with debate on residential land availability and the price of land for residential development. Whilst the structural factors of influence have changed significantly, the concern regarding land prices remained salient throughout the 1990s.

The twin issues Goodchild addressed are concerned with land supply and hence both have focused upon the operation of the planning system. Whilst these supply-side issues are highly significant in the land asset market, demand remains a critical factor. At the beginning of a new millennium the projected household increases will play a profound role in the issues of land supply and pricing, whilst the planning system will be critically

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judged on the sufficiency of land release and appropriateness of location. Recent controversy concerning the appropriateness and capacity of previously developed urban sites to meet future housing requirements has led to a raft of contradictory and contentious arguments (Raynsford, 1996; Bell, 1998, HBF, 1998; Healey, 1998; Urbed, 1998). Yet few researchers have explored the potential impact of this planning land supply shift upon the organization and behaviour of the residential development industry. This paper examines how land prices are determined by a section of this industry and the consequences of developer actions in the 1990s. The paper has been divided into five sections: first, an introduction to the market context at the end of the 1980s and early 1990s; secondly, a discussion of landowner and developer behaviour; thirdly, an overview of price determination; fourthly the methodological account of the research and empirical findings and finally the concluding remarks.

2. The market context

This section briefly sets out the context for developer behaviour, by charting the effects of the late 1980s to early 1990s market cycle from company accounts and analysts' reports. The period is characterized by a strong housing demand and associated inflationary gains throughout the mid-to-late 1980s and subsequent market correction (in the form of interest rate increases) and recession from 1989 onwards and has been extensively covered in housing and economics literature (Adair *et al*., 1991; Maclennan, 1994; Meen, 1994; Bramley *et al*., 1995; Ball, 1996a, 1996b; Clapham, 1996 and Ball *et al*., 1998).

The 1989 housing market downturn drastically reduced many residential development companies' profit margins through interest charges on debt to fund land procurement and land value provisions and write-offs (Ball, 1996b). Residential development companies that had bought land in the late 1980s at historically high prices, on the apparent expectation that house prices would continue to rise suffered large losses, with high fixed costs and low selling prices in a low demand market. The scale of the balance sheet provisions in the quoted sector of the residential development industry over the period 1988–1993 captures the severity of the recession, with some £3 billion written down against over inflated land values (CLL, 1994). In fact, the top 29 companies in 1993, all building in excess of 1000 annual residential units (on a national basis) made collective provisions of £1 billion, equating to a write-off per plot of £4945 on approximately 221 950 plots (Gillen, 1998). This means that, on average, over the six year period each of these 29 companies made provisions against 1276 residential units or 54% of their average total output, based upon output figures for 1989/1990 (Gillen, 1998).

The high level of provisions had depreciated the share values of the quoted residential development companies throughout the mid-1990s. The consequences of declining share prices are low levels of investment and falling profit margins and the ultimate possibility of take-over or receivership. Since 1993, six of the volume residential developers have lost their market presence either through take-overs, mergers or voluntary withdrawal from the sector (CLL, 1995, 1998, 1999). These six residential developers accounted for approximately 18 000 housing completions in 1993, some 13% of total completions in England in that year (CLL, 1994, 1997, 1998 and Housing and Construction Statistics, 1999). The changes include the take-overs of Ideal Homes and Costain Homes by Persimmon Homes and Redrow Homes respectively; the take-over of Raine by Alfred McAlpine Homes; the retraction of Lovell Homes and Mowlem Homes from the private sector and the swap of assets between Tarmac and Wimpey, which have made Wimpey Homes the market leader in terms of residential completions since 1995. The principal reason for such a withdrawal by volume residential developers, often considered as immune to the most consistently volatile subcategory of the property market and its associated cycles, has been the inflated purchase of land at the height of the 1980s boom (Ball, 1996a).

For those leading volume residential developers that survived this period of intense activity and concentration, few were well placed to prosper from the low levels of activity in the housing market over the mid-to-late 1990s. City analysts' maintained that all of the volume residential developers have relied heavily upon the benevolence of parent companies and creditors (trading debt for equity) over this period (Nikko Europe, 1993; Yamaichi, 1993; CLL, 1994, 1995). For some in the quoted sector preservation was sought in new share issues. Buoyed by optimistic expansion plans on the part of the developers, investors eager to prosper from the potential of inflationary increases associated with the upswing phase of the cycle, continued to support ailing developers. However, the failure of these optimistic trends to materialize and the longevity of the recession placed many of the leading volume developers in a peculiarly vulnerable position throughout the mid-to-late 1990s. This vulnerability was manifest in the behaviour of developers in this period, often exhibiting unreasonable optimism of a quick return to market prosperity, eradicating rational decision-making (Ball *et al*., 1998).

3. Landowner and developer behaviour

This section examines the behaviour of both developers and landowners during the residential development cycle, stressing that throughout the 1990s it has tended to cause escalating land prices and lead to a destabilizing effect upon the wider industry (Ball, 1994; Antwi and Henneberry, 1995; Ball *et al*., 1998). The withholding of allocated development land by landowners and residential development companies reduces the supply and tends to increase the prices, making for a thinner market and greater potential for volatility. McNamara (1982) examining planning for housing in Hertfordshire at the beginning of the 1980s found that landowners were forcing residential development companies to bid up land prices by withholding sale in an attempt to extract the maximum financial gains possible from landownership. If there is an expectation of house price increases relative to construction costs, there are benefits (in the form of development profits) to withholding land for immediate development. Neutze (1987) also maintained that the greater the level of uncertainty, the greater the value in keeping potential development options open. From this, Bramley (1989) reasons that if the land-use planning system reduces uncertainty regarding future development land, then the greater the supply of land and the potential for reduced land prices. This, however, represents an uncomplicated view of issues, considering the part played by unallocated land gaining planning permission, allocated sites never being developed and the propensity of the residential development sector to bid up land prices when market prospects appear weak.

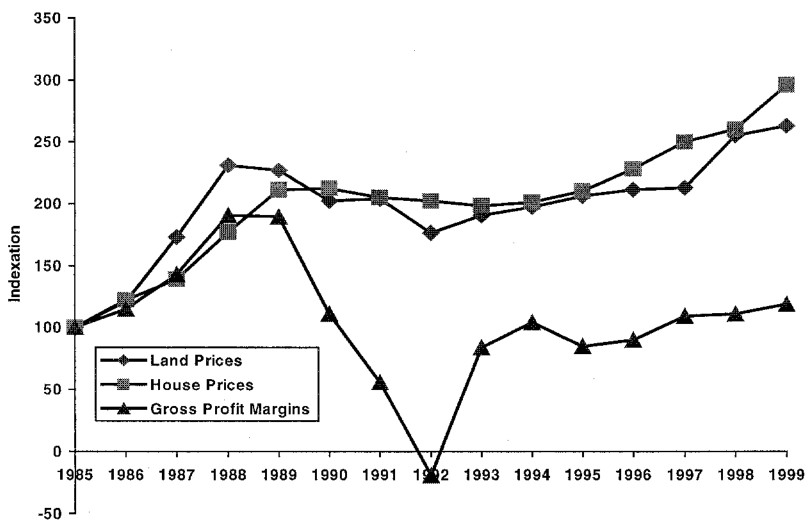
Residential development companies optimistic about future trends in the market are prone to bidding up land prices, accelerating prices whilst the market remains sluggish and house prices stable. Ball (1994), Smyth (1985) and Hillebrandt *et al*. (1995) describe similar activity in the broader property sector during the 1980s and 1990s, with developers displaying incongruous optimism that future trends would continue unabated, preventing rational decision-making. The result is increased development activity, combined with the negative effects of oversupply, an increased intensity of the downturn and an extension of the time for adjustment to equilibrium (Ball *et al.*, 1998).

The practice of allegedly irresponsible competitors paying inflated prices for land resulted in formal profit warnings from companies, delivered in annual reports throughout the 1990s (CLL, 1994, 1996, 1997). The following quote, taken from the Chairman's Report of the 1994 annual accounts of Allen Plc, succinctly identified the scale of over-optimistic behaviour in the market:

> *Some residential developers are already paying well above what we consider to be the correct price for residential development land. The only way that these prices may be justified is that house prices will rise by 7–10% annually for the next few years – we think that increases would be of the order of 2–3%. Are we, therefore, at the start of another cycle of overpaying for land, followed by massive provisions, followed by weakened balance sheets, followed by overpaying for land? We never took part in this game – nor will we this time ...* CLL (1994).

Whilst house price rises of the magnitude of 7–10% were occurring in a few selective regional markets in the period immediately after this contention, it was not until 1996 that prices nationally (England) reached these figures (see Fig. 1 and subsection 5.2.). Nevertheless, the real issue for the Chairman of Allen Plc appears to be the irrationality of profit expectations based upon past experience and optimistic forecasting and the potential instability this has for the market and industry.

The research of Gardiner and Henneberry (1991) and Antwi and Henneberry (1995), examining property market models and developer behaviour, provides a link between profit expectations and land price bidding. In the latter study the authors suggest that



Source. Housing Statistics 2000 and CLL (1994, 1997, 1999, 2000).

Fig. 1. Private sector land prices, house prices and gross profit margin trends for England

developer optimism tends to be based on habit persistence in the determination of profit expectations, extrapolating past experience and prices into contemporary land bids. The combination of over-optimistic companies paying inflated prices for land and optimistic landowners withholding land supply from the market increases the upward pressure on prices. This has a destabilizing effect on residential development during market slumps, making land procurement increasingly difficult for companies at a time when it is most needed and the consequent potential of minimal profits and possibly receivership following land purchases. This cycle of 'boom-overpayment-slump-survival' (BOSS) has been a constant feature of the residential land market and residential development industry since the 1970s, caused by both fundamental flaws in the market and developer actions and marked by persistent land write-offs and company failures (see Fig. 2).

Ball *et al.* (1998) stress that developers often fail to learn from experience and modify decision-making behaviour and thereby reduce the worst effects of the BOSS cycle. The authors suggest that this may be the result of few developers surviving the boom/slump and the new participators in subsequent cycles having less information and experience. With the volatility of the residential development market (offering high profits in the boom phase of the cycle) generating increased investment in the sector from companies seeking new avenues for profit growth, it would appear that this behaviour is unlikely to change in the short to medium term (Gillen, 1998). However, the survey evidence suggests that almost 50% of the volume residential developers surveyed have altered land purchase practices between 1989 and 1998 in order to reduce their vulnerability to cyclical activity. The findings maintain that the forward full purchase of high-priced land prior to development, common in the 1980s, has been replaced as the principal method of procurement by up-front payments of between 10–20% of land value,[1] followed by periodical payments over the development period linked to sales. Such practices tend to reduce the vulnerability of residential development companies to the variable effects of the BOSS cycle.

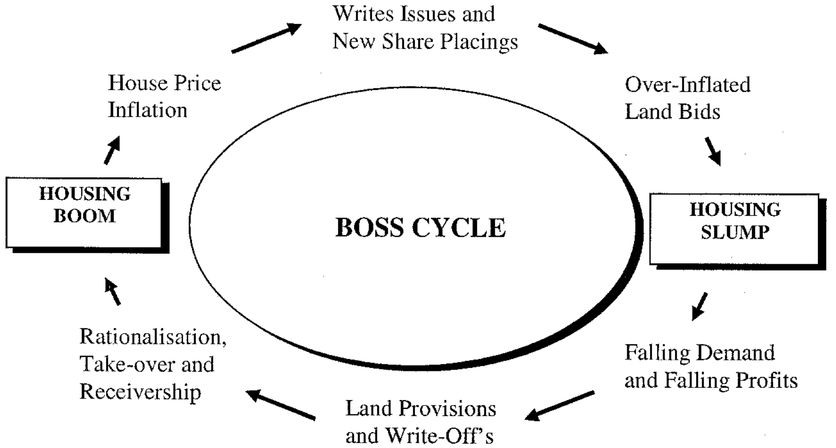


Fig. 2. The BOSS cycle of land procurement

[1] The precise formula and detail of each type of payment differs from one location to another and is difficult to trace owing to the commercial sensitivity of financing practices.

Antwi and Henneberry (1995) and Ball *et al.* (1998) point out that the conditioning of developer's future expectations by past experience is widespread, but that little empirical evidence supports the contention. Such habit persistence behaviour is the basis of profit expectations prevailing over actual profits and profits based upon price-taking, often considered the benchmark for speculative developers (Eccles *et al.*, 1999). The resultant operational decision-making and land purchasing effect of such a response to price signals leads to the scenario described in the BOSS cycle, with the amplitudes of the cycles being more exaggerated than would otherwise be the case, culminating in market instability.

The city analysts' reports support this view, with developers basing land bids on past trends and outbidding current price-takers (CLL, 1995, 1996, 1998). Those developers operating cautious land procurement policies were increasingly deprived of development opportunities throughout the most recent cycle, ultimately resorting, out of necessity to maintain turnover, to competitive bidding (CLL, 1997, 1998). The tendency towards such competitive price bidding is explored in Section 5. However, it is necessary also to examine price bidding from a theoretical perspective, in order to comprehend the criticisms of contemporary developer actions.

4. Critiques of land price determination

In this section a broad range of studies are examined, which in spite of their theoretical and economic diversity, are united in the attention they provide to the determination of land price. The objective is to present two broad theories of price determination, a Ricardian residual and urban economic explanation and in the following section examine the suitability of application of these theories to contemporary developer operations. Whilst the emphasis of both approaches is different, the economic fundamentals are similar. The Ricardian residual theory focuses upon profitability as a means of setting land prices, which is affected by the underlying forces of demand and supply, these forces being principal to the argument of the urban economic approach. This runs the risk of the theories providing a distinction without a difference. However, this paper points out some of the subtle differences of the approaches, particularly the Ricardian residual approach's over-reliance upon demand issues and a failure to address supply monopolization, discussed in greater detail below. Nevertheless, the examination of the two approaches provides a significant insight into the price expectations and subsequent determination strategies applied by residential developers in the 1990s.

Each of the studies examined notes that a diverse range of variables determine land prices, including interest rates, levels of inflation, housing demand and the quantity of land made available through the land-use planning system. Also, land prices are subject to the effects of the housing market cycle, but in a manner significantly different to that of other residential development variables, such as construction costs and house prices. Ball (1996a, 1996b) argues that land prices are prone to fluctuate more than these other two variables. The claim is that this is due to the fact that gross profits from residential development fluctuate more than house prices, illustrated in Fig. 1 and Table 2. Fraser (1993) also maintains that the exhibition of greater levels of fluctuation by land prices and profits during development cycles exaggerate price signals and developers responses in the market.

4.1. *A Ricardian residual analysis of price determination*

Ricardian rent theory suggests that land prices are a residual component of the gross profit calculation, that is capital value minus costs and profit. Based upon demand factors, the theory maintains that any increase in residential development profits, as experienced throughout the mid-to-late 1980s housing upturn, enables a coincidental land price increase, which is demonstrated by companies bidding and paying more for development sites. The Ricardian residual theory should be distinguished from the 'industry residual' calculation, which utilizes an adding up theory of price determination. That is house prices are the sum of land price, construction costs and developers profit. Here, the direction of causality being from land prices to house prices.

The Ricardian residual theory is explored in the research of Ball (1983), Lambert (1990), Bramley and Watkins (1996) and DiPasquale and Wheaton (1996), each drawing parallels between the theory and the reality of empirical research at differing spatial and temporal locations. Ball (1983, 1996b) stresses that Ricardian rent theory and its contemporary variants maintain that house prices and land prices are simultaneously determined with the direction of causality flowing from house prices to land prices rather than vice versa. The author emphasizes that '*residential land prices, . . . depend on the profitability of residential development. When profits rise, residential developers bid up the price of land and vice versa, so land prices do not cause house price rises but are a residual consequence of the level of house prices, relative to construction costs*' (1983, p. 113).

This argument was supported by the Joint Land Requirements Committee (1984), challenging the House Builders Federation's (HBF) assertion, as the value of land will depend on what price the residential development company can obtain for the houses and not the opposite. The Ricardian residual argument suggests that land prices tend to reflect increases in developer's profits, which rise and fall with the rate of house price change.

Increasingly, empirical research into housing land availability, housing and land prices throughout the 1980s and 1990s began to question the validity of the Ricardian residual argument (Ball, 1996a, 1996b). Eccles *et al.* (1999) claim that the theory takes no account of the distorting effects of the levels of demand as a determinant of value. Ball (1983) rejects the theory as it also fails to recognize how developers organize the development and production processes in order to retain profits at the expense of landowners, attempting to reduce monopoly control over price setting. In seeking to arrest the conversion of profits into land prices, developers may alter production methods (and thus costs). The outcome is often the raising of house prices to recover profit levels.

Examining the Bristol housing market at the height of the housing market cycle in the late 1980s, Lambert (1990) maintained that residential development companies' estimates of costs and prices in the 'industry residual' calculation are based upon broad rules of thumb from past experiences. The customary practice is for the developer to ascertain from market research the optimum development mix on the site, limited by physical and planning constraints, but which generates maximum sales revenue. The building costs, including today for planning obligation requirements, and the developers profit margins and interest payments on borrowed finance are deducted from the sales revenue to leave the land price. This, however is rarely fixed, as the Ricardian residual theory assumes, with developers absorbing profit and sometimes construction cost reductions in order to procure specific sites (CLL, 1995, 1996). The results of the survey analysis in Section 5 also show similar findings for contemporary developer behaviour.

4.2. *An 'urban economic' analysis of price determination*

Notwithstanding the range of economic approaches, the detail and idiosyncrasies of the analyses in situations of market failure and adjustment, the studies examined in this section are loosely grouped together as urban economic models, estimating the economic costs of planning regulation. Urban economists generally agree about the impact of planning regulation constraining land supply and increasing house prices and consequently land prices, but the principal issue is empirical, that is the extent of the impact. A detailed examination of this is beyond the scope of this paper. Instead, the following section provides an overview of a range of arguments, which both support and dispute this consensus in-principle, in order to provide the context for the empirical findings in Section 5.

Residential developers have steadfastly and vociferously argued that the planning system imposes too great a constraint on the residential land supply, restricting development locations and the phasing of development and hence profit generation (Pope, 1992). Some researchers claim that a restricted supply of land inflates land and house prices and that more flexible land release policies would substantially reduce the costs of new residential development (Balchin and Bull, 1987; Evans, 1983). Hall *et al*. (1973) declared that the unexpected effect of containment policies was land price escalation. This declaration is echoed strongly in the research findings of the residential developers under contemporary planning measures to safeguard greenfield sites and direct development to previously developed urban locations (Gillen, 1998). In contrast, a number of researchers suggest that there is no straightforward causal relationship between land supply, land prices and house prices (Ball, 1983, 1996b; White, 1986).

Examining case studies in the high priced and highly restrained South East and low priced and modestly restrained Yorkshire and Humberside regions during the mid-to-late 1980s, the Gerald Eve report for the Department of Environment (1992) concluded that planning policies constrained land supply to the extent that residential developers could first, not build where they preferred, thereby reducing output in specific areas and secondly, this led to increasing land prices in areas of housing land allocation. This neoclassical economic argument is one pursued with vigour by the HBF when lobbying for an increased land supply and rests on the principle that land has been poorly allocated in development plans, unrelated to demand which disables residential development companies to satisfy market demand. In locations where land supply is constrained and increases in demand for housing occur, there tends to be an immediate response in land prices due to the inelasticity of supply.

Further, the HBF argue that restrictions on the supply of land also force up house prices, especially over the medium to long-term; a view shared in both the research of Goodchild and Munton (1985) and the Gerald Eve study. The Goodchild and Munton study noted that inflexible Green Belt policies add 30% to land and house prices in buoyant markets over the medium to long-term. In the short-term, moreover, the effect of supply constraints upon house prices are minimal, as it takes up to two years for residential development companies to increase production, following planning, construction, marketing and sales (Ball, 1983; Wellings, 1994). Additionally, local housing markets are very open, with consumers able to select from any number of properties, both new and secondhand. As such any house price impact of planning constraints will be diffused across a wide region (Bramley and Watkins, 1996).

Attempting to estimate the economic costs of planning regulation Cheshire and Shepard's (1989) research maintained that if the planning system was relaxed sufficiently to allow no supply restrictions, then housing would have absorbed 65% more land space and in general house prices would have been up to 6% cheaper. Research carried out by Bramley and Watkins (1996) updated this research. The overall trade-off between land release and house prices, the authors claim, is relatively unattractive; an increase of approximately a third of structure plan housing provisions, would only reduce house prices by 8% in the medium term. The implication being that there would also be a simultaneous small reduction in land prices.

Local authority planners would dispute the suggestion that restraint policies are the sole source of land price increases. Inquiries into the role of the planning system have established that the system does not constrain land release, but tends to alter the location of residential development (Ball, 1996a, 1996b). In fact there is an argument that the plan-led planning system creates certainty in the land market, enabling the residential developer to be able to obtain a clearer understanding of expected selling prices and thus land price bids prior to purchase (Ball, 1983). Greater planning restrictions could assist residential developers by restraining over optimistic expectations and thereby ensuring that land write-downs during housing slumps are curtailed (Ball, 1996b). However, this is conditional upon allocations being related to market demand, an issue which is causing vexed controversy between planners and developers in the current debate concerning the commercial merits of many previously developed urban locations (Baker and Wong, 1997; Fulford, 1998; Green, 1998; Hebbert, 1999).

From the discussion raised in Ball's research (1996a, 1996b) it appeared that the greatest issue facing residential development companies throughout the 1990s was not so much the supply, but the market price of land, though these are closely interlinked. For many residential developers, the effect of over-inflated land purchases at the height of the 1980s upturn had a significant impact in terms of future land purchases, profit margins, market presence and rationalization. In contrast, during housing downturns land prices do not fall as sharply as expected, as often landowners withhold their potential development sites from the market (see Fig. 1). The hope, on the part of optimistic landowners, is that the upswing phase of the cycle will not be too long in returning. Ideally, this upswing phase will then recover the potential development value of the landowner's land. The price effect this has upon land supply can be substantial. Residential development companies need land to build houses on, and in a market slump with a limited land supply companies are often forced to build out stocks held in land banks,[2] which can be highly expensive to replenish.

Historically, the cost of land as a percentage of the house sale price ranges between 15% and 25% (Barlow and Duncan, 1994). The effect of land banking tends to reduce these figures considerably by suppressing the land: sales price ratio. Yet, during the housing boom of the late 1980s, this figure increased to over 50% in extreme cases, reflecting expectations of house price increases on the part of enthusiastic residential developers (Gerald Eve, 1992; Nikko Europe, 1993).

[2] Land held in land banks tends to consist of a combination of land allocated in development plans, land with an outline planning permission and agricultural land. Each parcel of land is acquired either at open market value or on the basis of a contract conditional upon gaining an allocation or planning permission and then a pre-agreed percentage of open market value is paid for the land.

5. Methodological approach

Utilizing data from an unpublished PhD thesis, examining the behaviour of volume residential developers in the recovering housing market and prescriptive land-use planning regime of the 1990s, this paper describes and discusses how land prices are established by this sector and examines the propensity of these developers to bid up the price of their raw asset during both housing market booms and slumps (Gillen, 1998).

The operational strategies of companies within the residential development industry remain guarded and confidential. Access to data has frequently been problematic for researchers. In the past, residential developers have often refused to cooperate with data gathering exercises, their main apprehension being the disclosure of sensitive information, which may be gleaned by competitors. Both Healey and Barrett (1990) and Pope (1992) deliver a caveat to prospective researchers examining the residential development process, claiming that competitive advantages determine that operational strategies are guarded and data may not only be scarce, but misleadingly conveyed. Consequently, the accuracy of the empirical findings in this paper, even taking into consideration corroboration with secondary sources, including company accounts and city analysts' reports, are subject to an element of uncertainty. The analysts' reports, whilst sometimes prone to error in predicting market movements, represent a significant short-term data source in an industry that remains secretive.

The design of a survey of English based residential developers was informed by the analytical framework of the research. A postal questionnaire survey was submitted to a total of 80 regional volume residential development companies operating throughout England. The selection criterion for these 80 companies adopted a stratified random sampling technique, using an output threshold and spatial area coverage to assist representativeness. The minimum annual production of 200 or more housing units was utilized as a selection criteria, as this is considered the classification for regional volume residential developer status (Fielding, 1982; Ball, 1983). Also, the sample was drawn from as wide a base as possible, using operating company addresses throughout England. Ten residential developers were selected with addresses in each of the eight standard English regions. The addresses were taken from the Appendix of Private Housebuilding, the annual report of the stockbrokers Credit Lyonnais Laing (CLL) and the local residential development pages of the magazine House Buyer. Some 31 developers provided replies, with a response rate of 39%, shown for each region in Table 1.

The use of a site-specific resource such as land requires that the residential development company move its location once this resource is utilised (Fleming, 1984). Moreover within England, the high degree of local variability in land release produced by the discretionary land-use planning system leads to the 'nomadic' nature of the residential development industry. Residential developers, therefore, tend to be transient within regions, in search of

Table 1. Residential developer responses using operating company addresses

	East Anglia	East Midlands	North	North West	South East	South West	West Midlands	Yorks & Humbs.
Actual responses	3	5	3	3	6	4	3	4

development land for the contribution it can make to the final marketable product, the housing unit. Within the sample surveyed, approximately half of the developers operate from a single office base or headquarters, but build in adjacent regions. In fact there is strong degree of inter-regional dependence on the part of residential developers (Lambert, 1990). This contingency relates to rationalization from peripheral regions during downturns in housing demand and the structural framework provided by the land-use planning system. For example, region A may experience expansion in terms of development activity, buoyed up by a leniency in the land-use planning regime and quantity of allocated development land, whereas an inflexibility in the regime in an adjacent region B, may prove to be the catalyst for growth in development activity in region A (Short *et al*., 1986; Bramley *et al*., 1995).

The research is both spatially and temporally limited and as such is not without its shortcomings. The spatial limitations are established in order to ensure commonality of developer behaviour within the English land-use planning regime. However, several studies are used as references for developer behaviour throughout the paper and which are limited to regions of England, but nevertheless provide a representative illustration of land procurement and price determination. The time series used covers the years from 1985 to 1999, a period marked by volatility in both land and housing markets. Such a short time series cannot be used to accurately depict trends. Nevertheless, it does provide an illustration of developer behaviour through the most recent market cycle. In addition, two seminal studies are cited throughout the paper, which examine residential development activity immediately prior to this period and are used as a measure of comparative analysis due to similarities in the nature of the market cycles and subsequent developer behaviour (McNamara, 1982 and Ball, 1983).

The data sets used to depict land (and house) price movements throughout the study period are prone to interpretation difficulty and time lag delay. Complete and regular data on residential development land transactions are not published below the level of the English regions. Jackson *et al*. (1994) and Bramley and Watkins (1996) note that this is primarily due to the fact that for spatial areas smaller than regions, the actual volume of transactions can be modest and the statistical reliability of averages low. Also, it is necessary to recognize that the response of supply to a rise in demand and prices takes up to two years (Ball, 1983; Wellings, 1994). Thus the land asset market and particularly prices are prone to fluctuations over the short-term, but remain relatively stable over the long-term (DiPasquale and Wheaton, 1996). The focus of this paper is very much on the short-term, identifying the magnitude of changes in land prices and the subsequent impact upon a sector of the residential development industry.

5.1. *Volume residential developer classification*

Whilst the term volume residential developer is freely used in the literature, no uniform criterion is used to categorize this type of developer. In fact the classification of residential developers has often been approached as a peripheral issue, addressed in a diverse way and remotely connected to the main theme of studies. Yet, for simplicity the most frequently used method of classification is by size, that is annual housing completions, annual turnover, number of employees and profit margins.

The use of annual housing completion levels provides researchers with the simple task of grouping residential developers into bands of unit completions. For example Bather

(1976) divided developers into 'small', producing less than 50 units per annum; 'medium', producing 50–500 units per annum and 'large', building over 500 units a year. Ball (1986) applies the same criterion, noting that the volume residential development companies are those building 500 or more units per annum on a national basis. City analysts' consider the national annual completion of 1000 housing units as a more suitable contemporary classification for volume residential developers (Nikko Europe, 1993; CLL, 1994). For the purpose of this research the city analysts' classification is utilized, but adapted to incorporate the regional sub-division companies' annual output of more than 200 unit completions (Fielding, 1982; Ball, 1983).

Whilst this paper explores the use of profit levels as a means of setting land prices, it should be stressed that the use of profit levels for comparison of developer performance is difficult to interpret. Development companies operate a wide range of profit margins based upon an even wider range of parameters (Gillen, 1998). In addition, unit completions, the basis of the volume residential developer classification, provide a rudimentary measure of profitability. Although a positive movement in output is generally followed by a subsequent profit increase, this can be difficult to evaluate, due to the preference for a particular sector of the housing market and exposure to certain spatial housing markets, with distinct price differentials in house types and across regions of the country.

5.2. *Empirical findings*

Table 2 and Fig. 1 demonstrate that from 1985 to 1988 land prices for England more than doubled, whilst house prices rose by some 70%. The figures mask the fact that land costs were forming a greater proportion of prices as house prices rose, buoyed by demand, supporting the notion that land prices are determined by house prices. Harvey (1996) notes that between 1987 and 1988 the average price of a new house increased by 10% nationally and construction costs grew by 11%, but land prices rose by 47% as developers acquired land in anticipation of future rises in house prices.

From 1985 to 1988 company gross profit margins almost doubled, a similar shift to land prices and broadly in keeping with the Ricardian residual analysis of land price determination described in Section 4. However, following the housing market collapse in 1989 and up to 1992, land prices broadly kept a similar trend to those of house prices, albeit in a slightly downward trend. Yet, the figures show a rapid decline in gross profit margins over this period, to an average negative margin of almost 2%. Gross profit statistics consist of the leading ten volume residential developers in each year from CLL reports. These aggregated figures hide some severe company losses over the period, most due to ill-timed and inflated land purchases.

The stability of land and housing prices and dramatic decline in gross profit margins between 1989 and 1992 provides a cursory indication that developers remained optimistic about the future and continued to pay prices for land which effectively led to very low or zero profits. Such findings support the research of Ball *et al*. (1998) and Antwi and Henneberry (1995), concerning expectations and land procurement strategies and ultimately play a significant part in delaying market recovery.

Between 1992 and 1998 land prices marginally rose once again, in tandem with the other two variables, buoyed by the belief on the part of optimistic residential development companies in a recovery in the market. In fact, what recovery there was between 1992 and 1998 was restrained by macroeconomic policies to curb inflation and the propensity of the

Table 2. Private sector land prices, house prices and gross profit margins for England

Year	Average land price per acre (hectare) (£)	Index	Average new house price (£)	Index	Average gross profit margin (%)*	Index
1985	80 838 (199 748)	100	37 133	100	9.4	100
1986	97 495 (240 906)	121	45 454	122	10.8	115
1987	140 402 (346 929)	174	51 614	139	13.44	143
1988	186 521 (460 886)	231	65 710	177	17.9	190
1989	183 461 (453 327)	227	78 315	211	17.75	189
1990	160 959 (397 723)	199	78 626	212	10.4	111
1991	161 259 (398 466)	200	76 259	205	5.3	56
1992	137 276 (339 204)	170	75 018	202	−1.8	−19
1993	153 945 (380 393)	190	73 362	198	7.89	84
1994	159 140 (393 230)	197	74 535	201	9.76	104
1995	166 556 (411 553)	206	78 088	210	8.01	90
1996	170 670 (421 720)	211	84 760	228	8.44	90
1997	171 792 (424 492)	213	92 935	250	10.26	109
1998	206 397 (510 000)	255	96 679	260	10.5	111
1999	212 467 (525 000)	263	109 733	296	11.2	119

Source. Housing Statistics 2000 and CLL (1994, 1997, 1999, 2000).
Note. * Figures are given from the accounts of the top 10 most profitable volume residential development companies each year and based upon pre-tax profits divided by operating turnover.

residential development industry to bid up land prices. This practice of bidding at over-inflated land prices, outlined earlier in the BOSS cycle, has acted as a nonintentional, yet self-regulatory curb on profit generation across the industry. It should be noted that whilst land prices were marginally rising on a national basis between 1992 and 1998, since 1996/1997 the South East has experienced a significant rise in prices, discussed below.

Asked to rank the reasons for land price rises, 68% of the sample of residential developers surveyed claimed that the supply-side factors are most significant, primarily the result of the restrictive and environmentally cautious land release policies of the planning system, shown in Fig. 3. Only 12% of the sample ranked the economy as having any

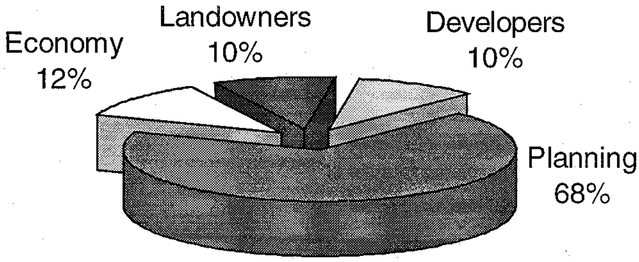


Fig. 3. Analysis of principal impacts upon land prices

notable effect upon land prices in recent years and a further 10% believed that the actions of landowners were significant. In view of some of the earlier findings it is therefore somewhat ironic that only 10% of the sample believed that their own industry competitors were directly responsible for land price rises in recent years.

The research findings note that 65% of respondents base initial land price bids upon an 'industry residual' calculation, often using predetermined cost statistics and phasing of development programmes on software packages. Indications from the survey questionnaire demonstrate the strong tendency of residential developers to build in inflationary gains on proposed development programmes, when bidding to purchase land. Analysts' note that developers continue to be surprised when such inflationary gains fail to materialize (CLL, 1995, 1997). Questioned what further actions developers would take to restore expected profit margins, almost all of this sample maintained that two events would occur, both construction cost trimming and artificial house price increases. The latter action occurring prior to construction, to test market price acceptability. The optimism displayed in artificially inflating house prices is curious when considering almost 70% of the survey sample noted that the greatest pressure upon land prices is the operation of restraint led planning policies (see Fig. 3).

The research findings also demonstrate that the spectre of a rapidly reduced supply of undeveloped, primarily greenfield locations, is causing consternation amongst residential developers. Indeed, the uncertainty of remediation costs incurred on many previously developed urban sites, combined with the stigma of contamination, potential of legal difficulties of title in site assembly, availability of public finance, market demand and planning obligation requirements, are merely adding to this apprehension on the part of residential developers (IRVO, 1998).

Bell (1998) stresses that there is still a great deal to be done on the part of the government to convince residential developers of the merits of building on previously developed sites. The greatest issue by Breheny and Ross identified in the TCPA's 1998 study into urban residential develop ment is the necessity for expenditure programmes and subsidies (either directly or via some form of tax break) to bring forward many of the more problematic sites, which still remain undeveloped. It seems that the government's response is to concentrate on directing development to urban sites and increasing densities in order to ascertain positive land values and thereby development potential. The logic of this argument is based upon simultaneous causality, with denser uses generating higher land prices and higher land prices encouraging denser development (DiPasquale and Wheaton, 1996). It could be argued that such a policy, linked to the provision of at least 25% of affordable housing in private schemes, could provide a valuable counter to land price escalation.

Despite the preference of the planning system for previously developed sites, there is a dearth of supply and this tends to be exacerbated by planning led constraint policies and a lack of public sector finance (Bell, 1998). Healey (1998) notes that this lack of finance for investment in infrastructure, land assembly and land clearance will result in development companies 'cherry-picking' the most attractive sites, at the expense of long-term neglect of the most difficult sites and raises questions about the scope of urban regeneration.

The deficit and constraint led supply conundrum adds to the urban economic argument of land price formation discussed earlier and tends to force price overheating in such areas. Developer options in these circumstances include attempting to resist such prices by choosing alternative locations or accepting inflated prices and consequently reducing potential profit margins and reducing construction costs. The research findings maintain that all the survey sample have, or are currently operating in at least one housing market which suffers from planning imposed land constraint. Yet a mere 16% of the sample surveyed would in fact choose alternative locations. Thus, the assumption is that the majority of the sample would choose to revise their development programmes to ensure a construction turnover. Questioned why they would accept such a state of affairs, the most common response of developers was that operating on volume margins offers flexibility of development locations, with suppressed profit margins in one location (forced by inflated land prices) often being countered by substantial profits in other locations. Paradoxically, whilst accepting such constrained planning practices, the developers also indicate a growing necessity for the planning system to acknowledge the commercial shortcomings of such policies and the potential for unmet housing demand.

By comparison, the belief, on the part of residential development companies, that an increase in demand or house price inflation inevitably culminates in the bidding up of land prices and reduction of costs and profits, supports the Ricardian residual price argument. The Gerald Eve (1992) study declared '*the price of housing land reflected expectations of house price increases, even if developers vehemently deny this – there can be no other explanation for experienced developers bidding for sites at a price which would produce no profit if house prices remained constant*'.

Residential development investment analysts' add further weight to the argument regarding residential development companies bidding up land prices, by suggesting that the most recent rises in prices are due to inflated bids by those quoted residential development companies which raised equity finance on the stock market (through share issues) throughout the mid-to-late 1990s (CLL, 1995, 1996, 1997). The analysts' have criticized these companies for uncontrolled price rises in certain parts of the UK, claiming that the urgency to rid themselves of finance for land demonstrates nonsustainable policies which have detrimental industry-wide consequences (Nikko Europe, 1993; CLL 1994, 1995, 1996). Of the sample of residential developers surveyed 35% had raised finance via new share issues or flotations between 1992 and 1996; the majority of the monies raised being used to finance land procurement in emerging residential markets.

In contrast to the Ricardian residual argument, restrictions on the supply of housing land across the areas of most acute demand, primarily the South East of England (32% of the sample operated within this region), are forcing residential developers to compete for land which is being made scarce by environmentally led restraint based planning policies and affordable housing thresholds. These findings are corroborated by responses to research questions, which clearly indicate the nonsustainable nature of land price payments across the South East and particularly the Home Counties. Anonymous comments from residential developers include

> *green belt fanaticism is causing massive land price rises in areas of acute demand across the Home Counties'; 'the continuing NIMBY attitude of local authority planners around the South East has the potential at one extreme to cause land price overheating and at the other to arrest the fulfillment of residential development demand and need'* and *'land allocated in development plans tends to be unsuited to many residential developers owing to the location and distinct lack of a commercial market and the limitations of development size'.*

Anecdotal evidence suggests that recent land price increases have been by up to 50% per annum in favoured locations in the Home Counties, most especially for sites in close proximity to the M25 motorway (CLL, 1996; IRVO, 1999). Table 3 shows the Valuation Offices' average land values for the South East (excluding London), East Midlands and Northern regions for 1992 to 2000.[3] Each of the three regions have experienced land price increases over the nine year period, with the South East encountering a significant increase

Table 3. Land prices £/per acre (hectare) for three English regions

	East Midlands	Northern	South East
1992	170 513	194 391	299 883
	(421 333)	(480 333)	(741 000)
1993	170 918	185 353	292 328
	(422 333)	(458 000)	(722 333)
1994	195 470	196 414	356 541
	(483 000)	(485 333)	(881 000)
1995	195 470	198 033	368 277
	(483 000)	(489 333)	(910 000)
1996	198 573	196 684	375 022
	(490 667)	(486 000)	(926 667)
1997	214 896	198 438	476 467
	(531 000)	(490 333)	(1 177 333)
1998	231 893	201 746	512 620
	(573 000)	(513 333)	(1 266 667)
1999	303 524	210 443	581 552
	(750 000)	(520 000)	(1 437 000)
2000	303 524	234 725	802 518
	(750 000)	(580 000)	(1 983 000)
% change over period	178%	121%	268%

Source. Property Market Report, Autumn 1992, 1993, 1994, 1995, 1996, 1997, 1998, and Spring 1999 and 2000, Inland Revenue Valuation Office.
Note. Prices are an average of the 3 types of land prices supplied by the Valuation Office; small sites, bulk sites and sites for flats and maisonettes.

[3] Unfortunately, firm evidence on land prices is difficult to obtain, due to each site being unique and price data rarely made publicly available. The longest standing land price series, produced by the Inland Revenue Valuation Office (IRVO), is more than one year out of date and fails to demonstrate the amplitudes actually experienced by residential development companies in the open market.

against the North's nominal increase. The table highlights the vigorous price rises across the South East since 1996, with average land prices breaking through the £500 000 per acre value in 1997. These figures mask some prodigious rises, especially in areas experiencing persistent demand but with limited supply, including £1 000 000 per acre in Kent and up to £2 000 000 per acre in parts of Central London over the last few years (IRVO, 1998, 1999, 2000). Such variability in prices is common in product-differentiated markets, where price can be strongly influenced also by the location's accessibility. Yet, land prices in the South East seem to display unusual characteristics for an asset market, with prices consistently greater than other locations over the long-term, despite the mobility of the residential development industry. The principal reasons for such independent price activity are due to the strong economic and demographic features of the South East, combined with the high levels of land supply restraint in many areas of the region. Unprecedented increases in prices owe much to these facts, with the region leading the recovery in the housing market towards the end of the 1990s, supported also by the high levels of household formation rates from the 1992 and 1996 based household projections (Morrell, 1993; Henley Centre, 1994; DoE, 1995, DETR, 1999).

6. Conclusions

This paper has established the fact that land price fluctuations have occurred throughout the most recent housing cycles, primarily in an upward trend, and have had a destabilizing effect upon the residential development industry. Several researchers have espoused policies that reduce this destabilizing effect, including the release of more residential development land and the introduction of a land development tax, charged to residential developers on the betterment value of land gained from obtaining planning permissions (Bramley *et al*., 1995; Ball, 1996b). However problems of taxing development profits have a long and defective history, which can be traced back to attempts to extract land betterment from developers by the Uthwatt Committee of 1945. Ball (1996b) argues that a system of taxing development profits would need to be highly variable, to account for locational differences and flexible to prevailing market conditions. During slumps taxes would need to be set either at zero or very low in order to allow continued development activity and also to slow land price falls. The potential positive effects of such a tax include eliminating the worst effects of the BOSS cycle (see Fig. 2), with the ultimate tendency for company bankruptcies and the possibility of more housing production across the housing cycle due to less price fluctuations.

However, the specific details of such a policy need to be investigated in greater detail in order to allow increased consideration for such. Evans and Bate (2000), in the TCPA/JRF report, make a similar statement by stressing that the Government should seriously examine the case for establishing a land value taxation system in the long-term.

Together, the actions of the agents involved in the contemporary residential development process, render the characterization of the causal effect of land prices, depicted in the Ricardian residual and urban economic approaches, as over-simplistic. Examining the actions of developers and landowners, the principal findings of this paper suggest that land prices tend to be driven by over-optimism on the part of these agents. The latter withhold land from the market in the anticipation of a quick return to the upswing phase of the housing market and the former incite price rises by overzealous bidding and procurement behaviour. The research suggests that the conditioning of future price expectations by past experience is widespread amongst the volume residential developers. Such behaviour has acted as an unintended, but self-regulatory curb on profit generation amongst residential development companies. The outcome is an unrealistic rise in land prices, forcing residential developers into the BOSS cycle described in Fig. 2. The ultimate penalty is the write down of land prices, take-over and possible receivership and bankruptcy. Up until the mid 1990s however none of the volume residential developers had suffered such consequences. Yet the longevity of the recession and continued upward pressure on land prices resulted in the withdrawal of support for the volume developers by both creditors and parent companies, the outcome being a continuing withdrawal and rationalization of the largest developers in the industry.

These findings are however also complicated by the recent trend of the planning system to direct development to previously developed urban sites. The preference of the planning system for such sites, in an increasingly environmentally conscious public realm, is not yet matched by government action, in the form of subsidies, to provide greater commitment to making such sites commercially viable. Further, the distinct lack of such sites in areas of acute housing demand is cause for concern on the part of residential developers.

The necessity for further research into land taxation techniques and pro-development planning initiatives is essential. The fact that the certainty of the housing and land markets cannot be predicted with any great accuracy demands new policy initiatives if the worst effects of the boom/slump cycle are to be arrested. Both the Government and the development industry should undertake such new research agendas, as it is in both their economic interests to ensure development activity in a variety of locations and company performance, in terms of profit stability and turnover.

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