# INVESTIGATION INTO SPATIAL VARIATIONS IN THE PRODUCTION OF MARKET SECTOR HOUSING IN ENGLAND

RICHARD WESTON

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**<u>Abstract</u>**

Over recent decades the UK has seen an increasing shift in housing tenure away from privately or socially rented towards home ownership. Whilst the number of properties constructed for rent has fallen, particularly in the social sector, this has not been matched by rises in private sector construction for owner occupation. With the population continuing to grow and a reduction in average household size there is an increasing gap between need and provision. This shortage has exacerbated house price inflation, making it increasingly difficult for first-time buyers to enter the market and causing further disparity in wealth distribution.

This thesis investigates spatial variations in market sector production between 1995 and 2002. In particular it will focus on the supply of new housing for owner occupation, as this is the dominant housing tenure in England. The aim of the research is to provide an economics-based explanation to spatial variations in production but with a 'holistic' approach to the investigation of house building. The research develops an approach to investigating house building that involves the triangulation of theory with qualitative and quantitative methods. In particular the research seeks to challenge the popular preconception that markets are 'naturally' efficient and that any form of regulation will automatically reduce this efficiency.

This thesis presents a novel model of residential developer behaviour, which improves the understanding of the decision-making process, focussing in particular on the consequences of uncertainty. Secondly, it identifies the set of factors that influence the levels of housing production in the market sector for the study period, delineating a causal chain that demonstrates cause and effect. In particular it questions the accepted notion that planning regulation is the primary cause of falling output and that an increase in land released through planning will both increase output and reduce house prices.

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**Introduction**

**1. Changes in the UK Housing Market**

"*Housing is a basic human need, which is fundamental to our economic and social well-being*" (Barker, 2004 p1). The opening sentence of the recent 'Review of Housing Supply' by Kate Barker reflects the importance attached to the availability of good housing and its impact on the economy and society as a whole. Increasingly the aspiration in the UK has been towards home ownership (HM Treasury, 2005 p5; Hooper, 2002 p104), which has risen in the thirty-five years to 2002 from fifty per cent to seventy per cent of the housing stock. During this period both the proportion of social rented, predominantly local authority provision, and private rented accommodation fell, although local authority provision in terms of volume was increasing for the first ten years of this period. The increase in the proportion of owner occupied housing accelerated during the early 1980s when the incumbent Conservative government began a program of discounted sales of local authority housing to the sitting tenants. At the same time the number of new local authority houses constructed fell dramatically with an increasing proportion of new social rented housing being delivered by Registered Social Landlords (RSLs). However, this did not match the fall in local authority provision.



**Figure 1.1 Proportion of stock by tenure (1967- 2002)**
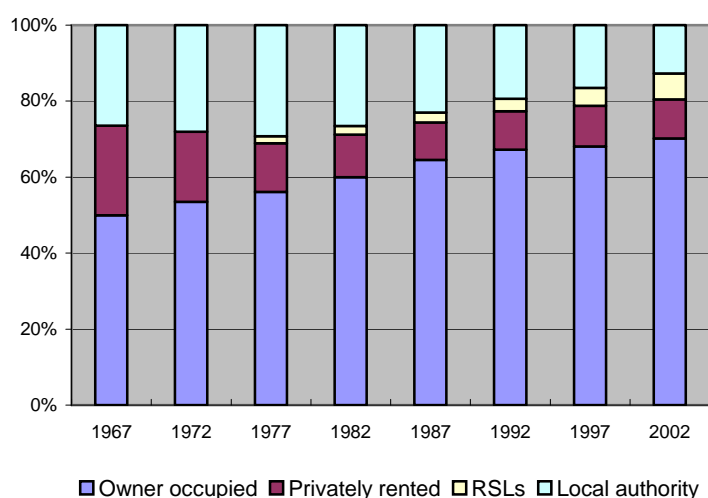
Private sector output has also fluctuated during this period, falling steadily through the 1960s and 1970s to below 100,000 in the early 1980s. It rose again for a short period in the late 1980s before falling and stabilising at between 120,000 and 130,000 completions per year for much of the 1990s and early 2000s. Consequently there has been considerable interest, both from government and academia, in the workings of the house building industry and housing market. In particular the influence of fluctuations in house building and house prices on the macro economy and the effects of rapidly increasing house prices on affordability and labour mobility have attracted significant interest (see for example Meen, 1996b). However, many of these have focused heavily on demand-side influences and have neglected to accommodate the consequences of the structure of, and changes in, the supply side (Nichol and Hooper, 1999 p58).

Housing supply can arise from several sources, existing stock, conversion of existing non-residential buildings and new build. The analysis of total or even new supply of housing is therefore a complex problem (Maclennan, 1982 p77). Most studies of the residential development process fall into two broad categories: those that are economics-based, which are predominantly concerned with the analysis of data (principally time series) on the housing market, and those that focus on the environment in which the development takes place, for example, the nature of development land, planning regulation and finance provision. Largely within each paradigm the impact of the other is taken as given. Neither has attempted to develop a clearer understanding of the way in which individual house-building firms make decisions regarding production (Maclennan, 1982 p83).

During the last three and a half decades the number of households in England has increased by almost forty per cent, fuelling the demand for new housing. At the same time the affordability of housing fell with, for example, only thirty-seven per cent of new households able to buy in 2002 compared to forty-six per cent in the late 1980s (Barker, 2004 p3). However, the changes in supply and demand for housing has not been consistent across the country, with some regions experiencing higher levels of house building and population growth. These differences in supply and demand have been reflected in house price growth leading to increasing affordability issues in the areas of the country that have seen the strongest growth in demand. Many of the

studies investigating this have focused on the causes and consequences of inelastic supply response on house prices, affordability and the wider economy (see for example Meen, 1996b; Monk *et al*, 1996; Bramley, 1999; Bramley and Leishman, 2005). The primary concern of many studies is to identify the cause or causes of this apparent inelastic supply response to rapidly increasing house prices. The implicit assumption underling these analyses is of competitive and efficient markets, in which supply and demand adjust to achieve an equilibrium price/quantity, at least in the long run.

## 2.      The Barker Review

This section reviews the 'Barker' *Review of Housing Supply* published in March 2004. It identifies those observations, conclusions and recommendations that are of particular relevance to this research project, whilst leaving any comment on these and the assumptions made until chapter ten where the implications of this research are discussed.

Kate Barker was asked to undertake a review of housing supply by the Chancellor of the Exchequer and the Deputy Prime Minister (whose Department had responsibility for house building). The review was set up on the 9th of April 2003 with the following terms of reference:

- *Conduct a review of the issues underlying the lack of supply and responsiveness of housing in the UK.*
- *In particular to consider:*
  - *the role of competition, capacity, technology and finance of the housebuilding industry; and*
  - *the interaction of these factors with the planning system and the Government's sustainable development objectives.*

The review concluded that the demand for housing increases over time, stimulated in the main by demographic changes (population growth and migration) and increasing incomes. Set against this increasing demand, the review found that the average annual level of production was lower during the past ten years than in the previous

decade and that in 2001 the level of new house construction fell to its lowest level for almost fifty years.

It concluded that the instability in the housing market contributed to a greater macroeconomic volatility and that part of this instability was attributed to the weak response of housing supply. In addition the strong 'real' growth in long-run house prices was considered indicative of a longer term under supply of new housing. This has consequences for affordability and wealth distribution. Additional costs of undersupply were identified in terms of lower labour mobility and a reduction in overall economic welfare.

Whilst acknowledging that any increase in the supply of new housing, which annually equates to less than one per cent of the total housing stock, will have only a small effect on prices, it was estimated that an additional 70,000 private sector homes per annum will reduce the growth in real house prices to 1.8 per cent per annum.

At the regional and local government level it is recommended that changes to the planning system should make more use of market information, in particular *prices*. The planning process also needs to provide a greater degree of certainty for developers; reducing the ability of local authorities to reject applications that accord with local plans is one suggestion. Also the speed at which decisions are reached should be improved.

At the national level the recent changes to the planning framework are seen as a positive first step to improving housing supply. As part of the review of the current *Section 106* arrangements, a scaling back "*to cover the direct impact of development and contributions to social housing only*" (Barker, 2004 p7) is supported. The review also makes some suggestions regarding the taxation of development gains, which should be designed to impact on landowners and therefore not have a significant effect on house prices.

There were some recommendations directed towards the housebuilding industry. It was suggested that local planning authorities should "*consider the level of competition in the new build market when granting permissions, … discuss build out*

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*rates for large sites, and, where appropriate, encourage developers to split up these sites.*" (Barker, 2004 p8)

The central tenet of the recommendations is to increase the supply of land for development, and that this should be taken up by a larger number of house builders, increasing both the level of competition and the responsiveness of housing supply. This conclusion will be considered further by this thesis.

## 3.     Investigating market-sector housing production

The levels of new house-building (supply) and population growth (demand) have been uneven across the country. The relative increases of both the stock of housing and households, for example, in the South East has been double that of the North East between 1981 and 2000. At the end of this period there was a net surplus of dwellings in the North East, i.e. more dwellings than households, whilst in the South East there was a small net deficit, i.e. more households than dwellings (Stewart, 2002b p13).

Not only does housing supply arise from several sources, but also population change. Natural change (births less deaths), inter-regional and international migrations all contribute. At any one time and in any given location, in addition to natural population changes within a region, there will be flows of migrants to and from other areas, both national and international (Stewart, 2002b p20). However, these migrants will have differing housing needs or demands. Not just in terms of size, dwelling type or location, but also tenure. Many will want to purchase their own homes whilst others will want or need to rent. Some will enter the private rental sector or have accommodation provided by employers whilst other may have to rely on the social rental sector. There will also be non-migrating households moving between sectors.

The aim of this thesis is to explain the spatial variations in market sector housing production in England. Although the research has a spatial rather than temporal (where rather than when) focus, these are unlikely to be completely unrelated. Not only are both likely to be influenced by similar sets of factors, but decisions to develop or not to develop in a particular location will be influenced by previous

experiences and future expectations, i.e. there will be a temporal element in production decision. In addition house building occurs over an extended period compared to most other production processes; therefore, the temporal element to the development process must be recognised and explicitly accommodated in any analysis. The precise spatial dimension and measure of output is explored in detail in Chapter Four.

Supply of and demand for new housing do not occur in isolation and, therefore, cannot be investigated completely independently of each other. However, research suggests that the influence of supply on demand is limited, i.e. whilst the demand for housing has a strong influence on output, changes in supply do not strongly influence household formation (Stewart, 2002b p17). Therefore, whilst this research has a supply-side focus the influence of demand-side factors will be explicitly examined. The primary hypothesis of this thesis is that there is a set or bundle of factors that determine the spatial variation in market-sector housing production, and that; the value of the factors may vary for each region, for example, the levels of unemployment or income; the influence (co-efficient) may vary regionally, for example, some factors may be nationally determined but have stronger or weaker affects on supply and/or demand, such as interest rates; and that the value and influence will vary through time, i.e. neither the value nor the influence of the bundle of factors are hypothesised to be constant. In support of this, the aims of the research are to identify the key factors that influence housing production, to understand how and why these factors influence production decisions, to extend the theoretical understanding of the production decision making process, and from this to explain the spatial variations in production.

Given that house building in 2001 fell to the lowest peacetime level since 1924 (Stewart, 2002a p8), whilst prices rose by nearly fourteen per cent in the same year, it is reasonable to ask whether private sector house builders are constrained by supply factors such as planning regulation and skills shortages and therefore face a vertical or leftward shifting supply curve. Or do 'speculative' house-builders develop strategies to cope with the uncertainties of production and demand and as a result 'under' production occurs?

The aim of the research is to provide an economics-based explanation to spatial variations in production but with a 'holistic' approach to the investigation of house building rather than accepting a preconceived 'black box' representation of the firm operating within a competitive market. Holism can be broadly defined as the belief that a system cannot be explained by the sum of its component parts alone, the cumulative affects may be greater than those of individual factors and the system as a whole may determine how the parts behave. The research will develop an approach to investigating house building that involves the triangulation of theory with qualitative and quantitative methods. Triangulation usually refers to the practice of employing more than one method in investigating a phenomenon. This normally includes the use of both qualitative and quantitative data in analysis (Olsen, 2003 p160). The holistic approach and use of triangulation will assessed further in Chapter Three. A comparison will be made between spatial variations in private sector output and the factors that are hypothesised to influence it. The research is more concerned with the choice of development location rather than changes through time, although they are unlikely to be entirely independent.

Three key steps were undertaken to investigate the research question. Firstly, a novel model of house-builder output decisions was constructed to improve the understanding of this critical decision-making process. Rather than employ a universal model of the firm in which individual behaviour is reduced to a set of predefined axioms, this thesis presents an industry specific model based on a theoretical examination of empirical data collected through survey; for example, the model needed to accommodate the "*problems and uncertainties inherent in the supply process*" (Maclennan, 1982 p80). An industry specific model will be better placed to illuminate questions such as the effects of uncertainty on output levels and any subsidiary consequences this may have. The model is constructed using a synthesis of Kalecki's (1954) model of pricing with the data gathered from a questionnaire survey asking house-building firms about their production decisions.

Secondly, the research identifies the key set of factors that influence the levels of housing production in the market sector, although these are not claimed to be exclusive or exhaustive. The research collected data using two methods; primary data was collected through the questionnaire survey. In addition to the questions on

production decisions data was gathered from the house-builders on production capacity and market barriers and stimuli. Secondary data was gathered from published sources, predominantly central government publications and HM Land Registry. In preference to the identification and analysis of the relevant factors through a single statistical method, this research chose to combine data from two sources with a strong theoretical underpinning. This 'triangulation' of theory and data from multiple sources reduces the possibility of the selection of spurious factors.

Finally the model of house-builder output decisions is synthesised with the data gathered from primary and secondary sources to present a causal chain for housing output. This is then used to demonstrate the 'why' and 'how' these factors influence spatial variations in production in England for the period of study.

## 4. Enquiry and explanation

The next chapter will discuss the key literature on residential development and related areas. From this the existing theoretical and empirical approaches will be discerned and an evaluation will be made of their aims, methods and relative strengths and weaknesses. In particular the review will pull together the factors identified by other research as the key determinants of housing output. However, one of the principal aims of this research will be to develop a novel approach to this enquiry. This will be achieved by the development of an ontological and epistemological framework that can guide and structure the investigation. The ontological perspective of the researcher, i.e. the researcher's belief in the underlying nature of the object of study, will be established with reference to the literature. This ontological framework will then guide the epistemological structure, i.e. the methods by which the research will investigate and validate theories of house building in England. Within this methodological structure the research outcome can be evaluated.

Chapter three firstly examines the existing methodological approaches to housing research and discusses how these have influenced the understanding of the behaviour of firms generally and more specifically within the residential development industry. It starts by examining the economics-based explanations. Focusing on the approaches

based on the neo-classical and institutional schools of thought, as these are the most active in the field currently. This is followed by an exploration of the model-based approaches. There are a wide variety of these, but they can be organised into three main categories, 'sequential or descriptive', 'behavioural or decision-making' and 'production based'. Ball's *Structure of Housing Provision* (SHP) thesis (1983) is then examined in some detail, as it is perhaps the most developed of the housing research 'approaches'. The SHP is of particular relevance as it shares a number of important features with the approach deployed in this thesis. The following section explores the ontological basis of Critical Realism, both within housing and the wider economics literature. Again, some similarities with the SHP thesis are uncovered. The section then goes on to set out the epistemological approach employed by the research to explore and develop the key theoretical arguments. In the final section the methods employed to undertake the research are set out, in particular the data sampling and gathering methods are assessed, and an assessment of the *a priori* expectations in terms of the benefits and limitations of the methods is deliberated on.

In chapter four various aspects of the English housing market are examined to develop and define the research question. The chapter deals with definitional and data issues, establishing the definitions of the terms used in the research as well as considering some of the problems with the available secondary data used both in framing the questions and developing the arguments. The chapter examines the data for significant special differences in housing markets between the English regions. It considers general and regional production levels, both in terms of relative overall output and the composition of production. The data is examined for the period between 1995 and 2002, comparing and contrasting the differences between the regional housing markets over the period. It presents more detailed case studies of the North West and the East of England and uses these to provide a useful contrast of the regional variations in production during this period. The penultimate section examines the structure of the residential development industry and the nature of residential development in England. The key characteristics of regional housing markets and the residential development industry in England are then summarised. This is then used to set out the measure of housing output to be explained by the research together with the reasoning for the choice.

Chapter four makes three observations that justified further investigation. Firstly, it was observed that private sector output had not replaced the falling level of social sector output. The second observation noted was that during the period of study the number of second-hand dwelling transactions increased whilst the number of new dwelling transactions remained relatively stable. The third observation was that whilst private sector output in the North West and the East of England seem to follow similar trends they do so at differing relative levels. Competing hypothesis were developed to explain these that will be tested against the data collected and the conclusions of the research.

The first section of chapter five presents the method employed to create the sample frame for the questionnaire survey sent to seventy-five of the largest private house building firms in England. The questionnaire contained six sections collecting data on firm specific characteristics, the goals of the firm, target setting and strategic control, land holding, production flexibility and output and price sensitivity. The following section examines the respondents. It assesses whether the sample is representative of the sample frame and the industry, or at least that part of the industry of interest to the research. There were two principal objectives to the survey: firstly the identification of key behavioural characteristics of house building firms, from which an innovative model of house builder behaviour was developed in chapter eight. The model is then used in later chapters to develop a clearer understanding of spatial variations in housing output. The second purpose of the survey was to illuminate the institutional structures and constraints of the house building industry. It was also expected that the survey responses would assist in developing an explanation of a number of interesting characteristics identified in the previous chapter on the housing market. Assimilating the findings of the questionnaire survey with secondary data provides the basis for a holistic explanation of house builder behaviour. An interesting observation from the responses was the tendency of firms to cite supply-side factors when responding to questions about their own output, but demand-side factors when responding to questions on industry output.

In chapter six the data collected in the survey questionnaire is examined in greater detail. The previous chapter concluded with some important characteristics that were

identified from the questionnaire responses. It was expected that these would provide a major component of the explanation of house-builder behaviour and from there private sector housing output in England. This sought to *add weight* to the observations made in chapter five using inferential statistics. The response rate of thirty-six per cent was considered to be high enough to give valid results although in some cases statistically significant results were not obtained. The chapter then goes on to develop hypotheses arising from these observations. In the final section it sets out the key features of private house builder behaviour that the research will have to explain. One of the most important findings of this chapter was the difference in behaviour noted between firms of differing sizes, measured by output. The research used an iterative method to determine the output level at which a number of key responses to the questionnaire changed. In particular, the relative size of land holding, the exposure to planning delays and the availability of finance.

Chapter seven examines general secondary data relating to factors that are thought to affect the level of output. Data from both the supply and demand side are examined. The concern was primarily to determine if there were any significant differences in these data between the regions that may help explain variations in output. The choice of 'factor' has been guided mainly by the responses to the questionnaire, but also with reference to other theories and research identified in the literature review. On the supply-side these included data on residential development land transactions and prices, the volume of planning decisions and planning delays as well as labour supply and skills were examined. On the demand side these include population and migration, employment levels and types, and income levels and distribution. The data presented compares and contrasts the differences between the regions, how they have changed between 1995 and 2002 and considered how they might influence housing output.

The chapter firstly examines data on the three key supply-side factors land, labour and capital. It then examines demand-side factors, the choice of which was guided by the responses to the questionnaires and other research identified in chapter two. A section examining both new and second-hand house price data follows this. The fifth section contains a more detailed examination of the East and North West regions. This mirrors the examination undertaken in chapter four re-examining the data from

the previous sections in greater detail. The final section summarises the finding and makes some concluding observation with some hypotheses that are examined in further detail in chapter eight. In general the chapter revealed less regional variation in supply-side factors than demand-side factors. It would appear from this that it is the factors influencing demand that correlate with industry output.

Chapter eight begins by reviewing the findings in chapters five and six picking out the key behavioural characteristics. If considers each characteristic in turn, considering whether they are as a result of environmental and structural factors or whether they are indicative of firms attempting to influence their environment. The second section appraises theories of the firm developed within Post-Keynesian, Kaleckian, behavioural, and old institutional economics. In particular it looks for aspects of these theories that can be adapted to a conceptual model of house builder behaviour that will capture the key characteristics of residential development. The fourth section examines the house building process identifying the main features of the residential development industry and those key attributes that the model of the house-building firm must capture. At the same time it looks for evidence to confirm the observations from the questionnaire and the review of theories of the firm. The fifth section of the chapter presents a conceptual model of residential developer behaviour. As a starting point it uses Kalecki's model of pricing and synthesises this with other theories of the firm, evidence gathered from the questionnaires and observations of the residential development process. The final section of the chapter critiques the model presented in the previous section, assessing some of its likely strengths and weaknesses in describing house builder behaviour and explaining market outcomes.

The penultimate chapter begins with a restatement of the philosophical and methodological stance taken by this thesis. It summarises what the research expected to achieve and the limitations of this. The next section reviews the model of house builder behaviour put forward in the previous chapter; in particular it considers how this can be developed from a micro model of individual firm decision making to an explanation of the observed output of all firms within a region at a point in time. Section four analyses the regional data presented in chapters four and seven. Section five replicates this analysis for the North West and East of England with less success.

Each of the factors identified is tested for association with output and additionally co-association. Conclusions are drawn on the potential for each of the factors to explain variations in output. By examining the theoretical and empirical associations between output and supply and demand factors if develops a causal chain that explains the spatial variations in housing. The following section develops a causal chain that establishes the inter-relationships between the factors showing why and how the determining factors shape output.

The final chapter considers the consequences of the chosen methodological approach and methods employed. It reviews the main findings of the research and argues for a particular understanding of house building firms and the house building industry; presenting the key consequences of the findings of the research, both for future avenues of investigation and the potential policy implications. The first section considers the methodology and methods employed arguing that these led to a richer more holistic approach that produced greater insights into both house building firms and the house building industry. Section three presents the key outcomes from the research. It develops the arguments presented in earlier chapters and draws out the main conclusions of the research and offers some reflections on the findings of the research. In the following section the key recommendations of the Barker Review are revisited. The implications of the findings of the research for the implementation of these are considered. The following section considers what further questions and avenues for research exist and how the understanding of the house-building firm presented affects key policy questions. The last section offers some final reflections on the methods and methodology employed by the research.

In summary this thesis has developed a more holistic approach to investigating market sector housing, firstly by developing a new model of house builder behaviour that will enable a better understanding of decision making within the house building firm and its consequences. Secondly it has shown how qualitative and quantitative data can be combined to provide a more complete explanation of the processes and provide additional insights into the house building industry. The next chapter begins the process by reviewing the existing theoretical and empirical approaches to housing research. This will firstly identify the strengths and weaknesses of these approaches and secondly place this thesis in context.

**Chapter Two**

**House Building, Prices, Planning and Theories of the Firm**

## 1. Introduction

This chapter discusses the key literature on residential development, development land supply house and land prices and finally theories of the firm. The existing theoretical and empirical approaches will be established and an evaluation will be made of their aims, methods and relative strengths and weaknesses. In addition the review will identify the factors hypothesised to be the key determinants of housing production. The next section considers the literature on housing production and house prices together as these are often analysed together. These are examined in three broad groups, theoretical, modelling and empirical analyses. The following section examines the approaches to land supply and planning; again these are assessed together as they are frequently considered in tandem. The literature is divided into the same categories as the previous. The fourth section reflects on theories of the firm based on five of the main 'schools of thought' in economics. In each case a brief outline of the main tenets of the school will be given together with its theory of the firm.

## 2. Housing production and house prices

Economics-focused housing research has concentrated predominantly on pricing, or more correctly on the determination of price. These have either been in the form of hedonic house price models or investigations into the 'ripple' effect (Drake, 1995; Hendry, 1984; Meen, 1996a & 1999). The assumption underlying these is the standard neo-classical economic supposition of price movements acting as signals to producers. Increases in price signal an increased profit opportunity that should be, in the standard analysis, followed by increases in production. The assumption being then, that if we are able to explain (or predict) price determination/movements then we are able to explain changes in production.

Current theories of market sector housing supply are based on a combination of microeconomic and urban economic theories. Micro theory is based on competitive

markets where firms are profit maximisers. Urban economics works within a location/spatial framework where behaviour is affected by the cost of transport and communication. A positive sloping supply curve *"is a fundamental characteristic of a market economy"* (Bramley *et al*, 1995 pg. 16). Where relative price changes operate as signals to producers, price increases being met with a corresponding increase in supply and price falls by a decrease in supply. In this model, land and capital are fixed in the short term, any increases in supply coming from a more intensive use of the available resources.

A major analysis of the house building industry based on an alternative perspective has come from Ball in *Housing Policy and Economic Power* (1983). This is developed from Marxist economics, where conflict between *classes* is the basis for analyses. These classes have been broadened from the original *social* groupings used by Marx to include government, administrative and other groups involved in the development process. This analysis continued to be developed in Ball 1986a and 1986b, in which he argues that the current focus on consumption of housing, in particular with reference to tenure, and housing policy needed to be broadened to include a analysis based on 'structures of provision'. In particular he argues that the behaviour of each of the "*social agents and others has to be explored and the interlinkages between them understood. But this has to be done with the knowledge that those relationships are subject to continuous historical change and so cannot be mapped out in an abstract and static way*" (Ball, 1996b p462-3). Ball's argument in both these papers asserts that the simple application of any abstract theory without reference to the empirical is unlikely to explain the phenomenon.

In a series of papers Healey (1991, 1992, and Healey and Barrett, 1990) has attempted to develop a *"descriptive institutional model of the development process which takes account of the complexity of the events and agencies involved in the process and the diversity of forms the process may take"* (Healey, 1992 p33). Apart from the problems of such an approach noted by Hooper (1992), the 'model' appears to resort to case studies, exploring the important institutional factors for each individual development.

Guy and Henneberry (2000) explore the potential for combining the mainstream economic and institutionalist approaches. They argue that whilst some behaviour may

be considered inconsistent with economic rational behaviour by placing it within a wider institutional structure it is possible to explain it. By adopting this approach they conclude that a deeper understanding of the dynamic nature of the property development process is attainable. Although this approach was criticised by Ball (2002) it would appear that he misreads Guy and Hennebury's argument, which is not to abandon mainstream approaches in favour of, as Ball interprets it, "*an undefined set of entities called institutions and an undefined social*" (Ball, 2002 p1456), but to 'blend' the economic and institutional approaches to property research (Guy and Henneberry, 2002 p1472).

Ball (1999) reviews recent government concerns over the lack of innovation in construction and design in UK house building. The focus has been on attempts to change firms' strategies, which Ball argues, (given the nature of house building) will be insufficient. Ball makes a number of suggested policy recommendations that it is claimed will reduce the specific constraints on house building firms and encourage the introduction of greater innovation in house building. The recommendations are: i) "*Reducing the volatility of new housing markets*", ii) "*Lowering focus on land development profits*", iii) "*Subsidising innovations and housing production*" and iv) "*Reforming building regulations*" (1999 p20-21)

Modelling approaches tend to take as given the underlying nature of the house building industry, based almost exclusively on mainstream neo-classical economics, and are generally looking for conformation of the *a priori* predictions based on the predefined set of axioms. When models fail to perform, the results are either not reported or are explained away as problems with the data. Two of the problems associated with the application of neo-classical theory to housing supply are the assumption of homogeneity and the housing characteristics of durability and locational specificity (Wellings, 2006 p31; Meen, 1996b p427).

The problem of heterogeneity is normally overcome by the use of *housing services* as the dependent variable. Housing services can be defined as the flow of consumption goods that are arising from the stock of housing assets. The seminal article by Muth (1969) abstracts from the problems of heterogeneity and durability in an attempt to model the supply of housing in terms of the effects of location specificity, using

optimising consumer choice models, based upon a trade off between location and transport & communication costs. However standard optimising consumer choice models are *"silent on the decision of consumers to purchase durable goods"* (Blaug, 1992 pg. 141).

Such issues have not discouraged numerous attempts to develop models of housing production, for example Tsoukis and Westaway (1992) compare three different models of housing construction for the period 1970 to 1990 using both starts and completions as measures of output. One of their conclusions *"that quantity signals do not play a role is verified"* (Tsoukis and Westaway, 1992 p24) is accepted without reference to the actual behaviour of house builders, which clearly contradicts this result.

Other analyses, by Meen 1996a and 1996b for example, do offer some useful insights into empirical events; however, there is still an unquestioning application of the axioms of mainstream theory. Meen uses spatial econometrics to investigate *"the nature of spatial interactions in UK regional house prices and housing starts"* (1996a p345). In particular the paper explores whether the markets are i) homogeneous, i.e. affected by the same set of factors; ii) dependant, i.e. the regions are linked, changes in one affecting its neighbour; and iii) convergent, there is an underlying, if long-run, tendency for variables to move towards an equilibrium. The results found that the regions were similar in their response to determining factors, which the paper suggests is as a result of a number of national builders creating a national market. The paper also found that the regions were linked, with changes in one region partially responsible for changes in its neighbour. Finally, a long-run convergence was between the factors was detected.

Meen (1996b) uses an econometric model of the housing market to consider *"Ten Propositions"*. The most relevant of those to this thesis are: i) *"the income elasticity of house prices is significantly greater than unity"* and ii) *"the elasticity of new housing starts is low"* (ibid. p426). The results indicate that wealth effects are the main cause of income elasticity exceeding unity. The cause of low elasticity of housing starts was less clear, but inflexibility in planning regulation was put forward as a possible source. Interestingly, the results also indicated that house prices were predominantly

'demand' determined. The paper concludes "*that we cannot fully explain what has happened in the last two years*" and that "*we should guard against simple rules of thumb ...as ... housing markets are complex ... and ... simple relationships will break down with changes in policy*" (ibid. p442-3). Here again, however, there is little reflection on the underlying theory that the modelling has attempted to capture.

In an attempt to develop non-linear modelling techniques, Meen and Meen (2003) consider how empirical methods can be used to model more complex spatial areas, such as urban housing market, where because of various social and institutional interactions, the outcomes are non-linear. They suggest that the use of recently developed models, 'social dynamics' and 'complexity theory', provide a possible avenue for further investigation. It is expected that such models would be able to cope with feature such as the "*problems of cumulative decline, low-demand housing and the failure to promote integrated neighbourhoods*" (Meen and Meen, 2003 p932).

Meen (2002) uses a number of statistical tools to investigate the relationship between industrial construction and house building. Based on neo-classical economic theory, it might be expected that there would be competition for resources between these two subcomponents of the same industry, one crowding out the other. It was found, however, that the association was positive rather than negative. When the data was examined again in a spatial context, the explanation for this became clear. New construction generally means new employment opportunities, and workers move towards these whilst at the same time seeking new housing. More are firms established, attracted by the skilled workforce, increasing construction and encouraging further inward migration and house building. The influx of skilled workers, new industrial construction and house building create a critical mass and become self-reinforcing.

In a useful empirical analysis, Gillen (1994b) provides an assessment of the reliability of housing starts and completions data and finds that, whilst the National House Builders Council and Department of Environment definitions for completions are identical, the two data series vary considerably. He concludes that "*the data relating to new housing production is unreliable*" (Gillen, 1994b p21). He then proceeds to analyse trends in the data, interestingly noting that market share for larger firm

decreases during boom periods in the housing market and increases during slumps. This indicates that smaller building firms act as opportunists, building when the uncertainty over sales is lower, whilst larger house builders maintain more stable rates of production. This would suggest that larger house builders are more specialised not switching, between industries with changes in demand.

## 3.     Planning, land supply and land price determination

Land is a key factor in the development process, as in other production processes. However, unlike other production processes land is consumed by the action of development. Much of current theory is based upon Ricardian analyses in which the land supply is fixed and therefore the determination of use is based on opportunity cost. Evans (1983) argues that the failure of earlier models to explain landowner reluctance to sell at market prices is a lack of supply-side considerations. He explores the determination of the price of land using a revised model allowing for the effects of imperfections. In particular this is used to consider the specific consequences of taxation, ownership and use, uncertainty and speculative behaviour. Wiltshaw (1985) argues that a more useful avenue of research would be to develop a clear understanding of the individual preferences in the ownership and consumption of land. He suggests that the failure to sell land at "*its current use value*" may "*have particular preference as to how the land should be used*" (Wiltshaw, 1985 p49) and should not necessarily be seen as irrational.

Grigson (1986) in a study for the London and South East Regional Planning Conference (SERPLAN) uncouples the determination of house prices from the supply and demand for housing by arguing that high house prices in the South East and London are not as a result of shortages in development land. He argues instead that they are as a result of increasing household incomes. He also argues that, as land prices are a residual of the expected revenue for a development less estimated construction costs, it is "*house prices that determine land prices and not the reverse*" (Grigson, 1986 p6). Quoting the House Builders Federation, he further contends that general house prices are set by conditions in the second-hand market as the "*stock of buildings are very large in relation to the flow of additional supplies*" (Grigson, 1986

p7). Given that much of this argument runs contrary to mainstream economic thought, this study has been the subject of considerable debate (see for example Monk 1999).

Needham (1992) examines the case of the Netherlands, where until recently all development land was supplied through local authorities. This was necessary because of the high cost of reclamation and the considerable time delays in preparing land for development. The local authorities would pay above the current use value, develop to a high standard and sell on at below the residual valuation, the gains from development going to the original owner and final developer. The aim was to ensure that supply was sufficient for all needs at a high standard and gain made by the authority was used to reduce the cost for other social uses. Whilst this provides useful insights into the development process where the land development and house building functions are separated, a more useful comparison is made by Barlow (1993) who reviews three land supply and house building systems, the UK, France and Sweden. He argues that much of the literature on land supply fails because of the "*extreme simplification of complicated real-world relationships*" (Barlow, 1993 p1129). He argues that the use of comparative statics fails to capture many of the behavioural characteristics and interrelationships and that a clear understanding of the structure of housing provision needs to be developed emphasising the strategies of the actors in the development process. In conclusion, he suggest that the planning system may be capable of short-run adjustment but that uncertainty over future land availability leads to speculative behaviour on the part of house builders.

Hooper (1994) examines some of the theoretical approaches to land ownership and land supply comparing the outcomes from recent research. He concludes that there are differences in the land banking practices of firms of differing sizes and that there is some conflict between landowners and house builders. He identifies a deficit in research into land ownership compared to the attention given to the effects of the planning system. The poor availability of data in this area, largely because of commercial and individual confidentiality, may have hindered this research. This focus may also be due in part to the mainstream economic belief that regulation, in this instance land use planning, impedes the efficient operation of the market and its effects are worthy of investigation.

A less economics focused analysis by Gallent *et al* (1998) review the changes that occurred under the previous Conservative government, driven by a particular ideology of housing provision. They record the failure of the new system of social housing provision to replace that lost from private landlord and local authority provision. They see an opportunity for the, then, new Labour Government to revitalise the planning system, in which tenure choice will be greater and the planning system can be used to direct provision in a more overt manner.

In an analysis of the effects of land use taxation on land use Needham (2000) presents estimates using estimates of price elasticities of supply from other studies. He concludes that the consequences of the introduction of land taxation is likely to have only a small affect on price and almost none on supply, assuming that the levels were not prohibitive. However, the analysis presented is wholly neo-classical in nature and as such offers little insight into the 'who pays?' and 'why?' questions. Bramley *et al* (1995) attempt to model the wider effects of planning regulation on housing supply. They conclude that whilst policy planning such as Local Plans is largely an independent function of local government the number of planning permissions shows some responsiveness to market demand. They further conclude that the responsiveness of the house building industry to an increase in land released through the planning system would not be a substantial as is often claimed.

Adams *et al* (2001) examine landowners' perceptions of and ability to influence various local and national economic and policy factors in the context of urban regeneration. Based on 120 interviewer completed questionnaires they conclude that local factors dominate national ones both in terms of landowners perceived influence and impact upon their activities, although it was acknowledged that whilst they may have little individual influence at national level their industry organisation may exert considerable weight in policy making. Gillen and Fisher (2002) investigate the affects of house builder behaviour on land prices. They argue that accelerated land prices are a result of house builders' expectations of future trends in housing demand combined with limited land supply. This has caused a destabilising affect on the industry that needs to be addressed through increased land supply and flexible development taxation.

## 4.	Theories of the firm

This section examines theories of the firm based on five of the main 'schools of thought' in economics. In each case a brief outline of the main tenets of the school will be given together with its theory of the firm. Where they have been developed this will be paired with the theories or models developed in the literature relating to the residential developer. The schools considered here are then: the Austrian, the neo-classical, and its 'macro' derivatives, the institutionalist, the Marxian and the post-Keynesian.

For the Austrian school the emphasis is on the 'self-interested' individual. Theories are therefore characteristically micro. It uses *a priori* deductive reasoning to develop explanations of economic activity. Information asymmetry and uncertainty form a key part of the Austrian explanation of economic behaviour. The entrepreneur rather than the firm tends to be the focus of Austrian theorising. Benefiting from price information advantage, the entrepreneur is able to profit from arbitrage. Their theories are rarely subjected to empirical testing and there has been little development of an Austrian theory of the housing market and residential developer.

The neo-classical school and its macro derivatives, for example the orthodox Keynesian and Chicago schools, are the dominant schools in economics and consequently they tend to dominate in the housing economics literature (Guy and Henneberry, 2000 p2399). The school uses deductive method to hypothesise the required conditions for market clearing. It is concerned with the efficiency of markets in responding to price signals and as with the Austrian school it is characterised by the self-interested individual. Unlike the Austrians the emphasis is on individual *utility* (or firm profit) maximising behaviour; this use of Benthamite *marginal* philosophy readily lends itself to the mathematical model building favoured by the school. As a consequence the analysis tends to be 'static' in nature, examining the forces that move the market between equilibria.

After the neo-classical school, the institutionalist is the most popular mode of analysis in housing theorising (Foster, 1991). It is important here to distinguish between the 'old' and 'new' institutionalist schools. The old school originates from the work of

Veblen (1899) and later Commons (1934) and developed from historical political economy. It has an evolutionary perspective and it sees the world as organic, where economic outcomes are governed by the changing institutional structures, in particular the developing power relations between the structures. Institutionalists eschew formal mathematical modelling and static equilibrium methods because they fail to explain the nature of social reality. The 'new' institutionalists are essentially neo-classical in heritage and 'frictions' (re-designated 'transaction costs'), are used to explain differences between empirical observation and the predictions of theory. There is a further discussion on the development of this school of thought in the next chapter.

Marxist theories of the firm are generally based on one Marx's 'modes of production'; these contain two general elements, firstly the material forces of production and secondly social relations in production. The material forces include the recognisable factors of production from mainstream thought, land, labour, raw materials; the second element, social relations in production, is concerned with the ownership of the productive forces. Capitalism being the third 'mode of production' where ownership of the forces of production being different from labour power there is conflict over the surpluses generated in production. Theories of the firm, therefore, evolve around conflict between classes over the allocation of surpluses from production. Whilst Marxism often provides a more open organic structure to theory that goes beyond simple mechanistic relationships, there has been a tendency to be dogmatic in the application of class systems in some areas of research.

Post-Keynesian economics as its name suggests draws much of its early influences from John Maynard Keynes (Dow, 1991 p176). Many of those who were contemporaries of Keynes such as Joan Robinson, Michel Kalecki, Nicholas Kaldor and Sidney Weintraub all made significant contributions to the development of the school (ibid. p178-9). Whilst most of the early proponents were concerned with predominantly macro issues Keynes first outlined many of the key elements of the micro theories developed later, such as the idea of fundamental uncertainty. The first clearly defined theory of the firm owed much to Kaleckian roots and was developed by Alfred Eichner (1976). The choice of methodology chosen by post-Keynesians is reflected in their 'open systems' ontology, which places the emphasis on

understanding causal mechanisms. Theories tend to emphasis the importance of historical time, uncertainty, income and wealth distribution and the role of conventions of habits in behaviour (Dow, 1991 p203-6).

**Chapter Three**

**Housing Research: Methodology and Method**


**1.     Introduction**


The stated aim of this research is to investigate the spatial variations in market sector housing production in England. This will be achieved by extending the theoretical understanding of the production decision making processes and identifying the factors that influence these decisions. The previous chapter discussed the key literature on residential development and related areas. From this the existing theoretical and empirical approaches were discerned; however, the focus of this research will be to develop a novel approach to this question. This will necessitate the development of an ontological and epistemological framework that can guide and structure the investigation. As J. Lawson advocates: "*Rather than theory imposition, the explanatory process can begin with the object of study*" (2001a, p22).


This 'methodological' structure will form the research approach used by this project and with which the research outcome can be evaluated. In the context of this research project the term 'methodology' will be used to denote the "*examination of scientific theories and their particular methods of investigation*" (Torrance, 1991 p22). This 'broader' definition of the term will include both ontological and epistemological issues. The narrower term 'method' will be used to represent the methods used to undertake a scientific investigation.


The next section will consider the existing methodological approaches and discuss how these have influenced the understanding of the behaviour of firms generally and more specifically within the residential development industry. The third section will then introduce the methodological approach chosen for this research project and the key theoretical arguments supporting this. The methods used to undertake the research will then be set out in section four. It will also include a discussion of the *a priori* expectations in terms of the benefits and limitations of the methods employed.

## 2. Existing methodological approaches and methods

**Economics based approaches** – Since the development of economics as a distinct discipline a number of 'schools of thought' have evolved. At different points during this period the pre-eminence of each of these has changed dependant on the issues such as the prevailing political and economic climates. The compatibility of the prescribed policies of any particular 'school' with the incumbent political regime or its ability to diagnose and supply practical remedies for current economic issues has often promoted one over another. In recent decades the neo-classical and Chicago schools of thought have emerged as the 'orthodoxy' within economics. Following this, research in many fields has accepted the methodological tenets of this school and developed research around this nucleus.

Research within housing economics is little different in this respect, with much of the received wisdom being developed from neo-classical principles (Guy and Henneberry, 2000). The neo-classical 'world view' is one of an individualistic, atomistic society where unencumbered markets will efficiently coordinate the allocation of resources according to the given preferences and resources of individuals. Methodologically, the neo-classical school employs deductive reasoning and abstract models, which it then endeavours to confirm using mathematical techniques, predominantly 'econometrics', on historic data (Gee, 1991). The declared aim of the neo-classical school is "*the development of a 'theory' or 'hypothesis' that yields valid and meaningful predictions about phenomena*" (Friedman, 1953 p26); no attempt is made to explain phenomena, as the explanation is within the axioms of the underlying deductive reasoning.

This has led, for example, to a 'black box' theory of the firm in which the internal processes of the firm are reduced to a single 'profit maximisation' motivation, where the output of the firm is determined by the intersection of the marginal revenue and marginal cost curves. The failure of this theory to explain much of economic activity has led to many theorists both within and outside the mainstream to seek more expansive or alternative theories.

In recent analyses there has been a resurgence of interest in *institutionalism*. However, institutionalism can be divided into two forms; firstly *old* institutionalism, which grew out of the work of Thorstein Veblen (Foster, 1991 p209) working in the United States of America at the turn of the twentieth century. Old institutionalism grew as a reaction to the development of neo-classical economics; Veblen saw the "*neoclassical economic agent… as …'a lightning calculator of pleasures and pains' who operated in a static timeless world*" (Foster, 1991 p209). Old institutionalism has an evolutionary perspective; it sees the world as organic where economic outcomes are governed by the changing institutional structures, in particular the developing power relations between the structures. They eschew formal mathematical modelling and static equilibrium methods because they fail to explain the nature of social reality. Given what they see as the open nature of society they do not regard prediction as achievable, and restrict themselves to descriptive analyses (Weston, 2003 p132-133).

New institutionalism by comparison is based on the same individual maximising behaviour of neo-classical economics. Much of new institutionalist thinking is based on Oliver Williamson's *The Economic Institutions of Capitalism* (1985) (Foster, 1001 p208) and through this the earlier work of Ronald Coase (1937) (Foster, 1991 p225). In trying to understand the co-existence of firms with vertical hierarchical structures and external markets, Williamson fell back on Coase's paper; *The nature of the firm* (1937). This paper argued that the existence of such firms was due to the presence of 'transactions costs', which were overcome by the internalisation of markets. This has been seen as a significant move from the more rigid analyses of neo-classical economics allowing some discussion between the two schools (Foster, 1991). It is this 'new' institutional economics that has recently emerged within housing economics.

Guy and Henneberry (2000) explore the potential for combining the economic (neo-classical) and the social (institutionalist) approaches to property research (see also Kauko, 2001). They argue, "*behaviour which within a narrow economic perspective is considered irrational can be explained by a wider logic. This logic is economically and socially constructed*" (Guy and Henneberry, 2000 p 2407). By adopting this approach they conclude that a deeper understanding of the dynamic nature of the

property development process is attainable. This approached has been criticised by Ball who defends mainstream economic analysis by arguing "*that through abstraction, modelling and working through the consequences of competitive market processes can both help to structure analysis and lead to important conclusions*" (Ball, 2002 p1455). However, it would appear that Ball misreads Guy and Hennebury's argument, which is not to abandon mainstream approaches in favour of, as Ball interprets it, "*an undefined set of entities called institutions and an undefined social*" (Ball, 2002 p1456), but to 'blend' the economic and institutional approaches to property research (Guy and Henneberry, 2002 p1472). Ball's (2002) seems to contradict his earlier exposition of his SHP thesis. The examples of 'important conclusions' he offers are based on exactly the postulates that he eschews in Ball and Harloe (1992 p4).

**Model based approaches** – Gore and Nicholson (1991) categorise models of land development into four main 'types', 'sequential or descriptive', 'behavioural or decision-making', 'production based' and 'structures of provision'. Sequential and descriptive approaches can range from brief synopses of the key stages of the development process to linear flow diagrams to the more complex circular models (see for example Barrett *et al*, 1978; Cadman and Austin-Crowe, 1978; and Ratcliffe, 1978). Whilst concluding that the simplest of these models offer little more than a useful introduction to the development process, the 'cyclical flow type' models are better able to capture the dynamic nature of the process. However, even these, they conclude, fail to portray the full complexity of the process and the interlinking external relationships (Gore and Nicholson, 1991 p711).

Behavioural and decision-making approaches by comparison focus on the actors within the development process and the consequences of their decisions (see for example Ambrose, 1986; Bryant *et al*, 1982; and Goodchild and Munton, 1985). Again these vary in complexity, from the less sophisticated tabular models considering the possible actions and interactions at each stage of the process to sometimes quite intricate and detailed flow diagrams. Whilst these are generally an advance on the sequential or descriptive approaches Gore and Nicholson conclude that they often see the interrelationships as unproblematic failing to allow changes in

context and therefore capturing the potential for conflict between actors (1991, p721).

The third type of approach, production-based, is quite distinct from the previous two in that the focus is on 'capital circuits' (see for example Boddy, 1981; and Harvey, 1978). It is allied to Marxist analyses of capital accumulation and the allocation of surpluses. Little or no attempt is made to integrate the actual events or actors within the development process. These models are generalised to an extent to which they could be applied to almost any manufacturing process. However, this extreme generalisation prevents the models being either tested against, or used to explain, real world events. Many of the criticisms of neo-classical based theory could be applied to this approach.

In Healey 1991 and 1992 an 'institutional' model of the development process is argued for and put forward. The aim is to develop a model of the development process that captured "*the detail of the social relations of a development project, while linking this to broader issues at the level of macro economic and political organisation, without overformalizing the highly variable circumstances of specific projects and agencies*" (Healey, 1992 p43). However, Hooper (1992) expresses concerns over the approach, apart from a number of definitional issues, he questions the possibility of an overarching theory whilst focussing on the specific (1992, p45).

**Structure of Housing Provision** – Ball has developed and refined the Structure of Housing Provision (SHP) thesis since the early 1980's, and at its simplest it can be defined as "*a series of relations between social agents*" concerned with the provision of housing (Ball, 1983 p18). Ball's main purpose was to establish a framework within which housing provision could be examined as a complete entity rather than in isolation, as is more often the case, on one of the "*spheres of consumption, exchange and production*" (Ball and Harloe, 1992 p6).

The concept of a SHP is theoretical and for that reason abstract, "*because it tries to encompass the principle features observed into a relatively simple organising framework*" (Ball and Harloe, 1992 p4). The SHP thesis is based on the contention that spheres of housing provision, such as owner-occupied housing, are composed of

sets of *social agents* who are active in the *physical processes* of housing provision. These social relations include, for example, the relationships between "*landowners with housebuilders, housebuilders with construction workers and housebuilders with the state land-use planning system*" (Ball, 1983 p121). In order to delineate a SHP the key relationships that have a significant impact on the outcome of housing provision within a particular sphere must be identified (Ball and Harloe, 1992 p4). The importance of establishing the key relationships is "*to show that it* [the SHP] *does have an internal dynamic ... and to avoid collapsing into explanations that have to bring in the whole world*" (Ball, 1986a p160). However, that is not to deny that the SHPs will have both internal and external influences, but without the abstraction of these key relationships (and processes) they would collapse into little more than case studies.

As frameworks within which housing provision can be examined, SHPs "*must be combined with wider social theories, methodologies of empirical investigation and where necessary statistical analysis*" (Ball and Harloe, 1992 p4). SHPs are intermediary 'models' and it is only when they are combined with the appropriate methods that they can be used to develop robust explanations of housing provision (ibid. p4). Importantly, Ball does not claim that a SHP is "*a theory of housing which produces from postulates a set of results claimed to have universal empirical generality*" (ibid. p4), therefore this is not a deductivist approach. Nor can it be claimed to be inductivist, as although it is explicitly empirical it is not "*an attempt to erect a general theory of housing*" (ibid. p3). Instead Ball argues that a SHP "*describes a historically given process of providing and reproducing the physical entity, housing; focusing on the social agents essential to that process and the relationships between them*" (Ball, 1986a p158). As such it is more closely allied to T. Lawson's conception of 'retroduction', where the aim is to explain past events based on empirical observation and the uncovering of causal mechanisms (T. Lawson, 1997).

The 'open' perspective of the SHP thesis is further emphasised by the recognition that the social and physical processes that constitute a SHP are continuous, i.e. they are processes rather than events, and that they evolve over time. As such the thesis "*recognises that the world is dynamic and posits institutional change as a key*

*empirical question for housing-related research*" (Ball and Harloe, 1992 p3). It also recognises that institutional structures are not fixed temporally. They are transformed, over time, by both interactions with agents within housing provision, house-builders, planners, etc., and by external agents, government, financial institutions, for example (ibid, p7).

The initial specification of a SHP is dependant "*on prior theoretical understandings of the likely combinations and results, previous experience, research objectives and judgement*" (Ball and Harloe, 1992 p5). This may then be adapted based on the uncovering of further relations, problems in the original specification, or real changes in house provision. "*This procedure is not empiricist as it explicitly recognises the interaction between observation, theory and individual judgement*" (ibid. p5). However, whilst SHPs are context dependant and cannot be analysed separate from their environment, it is not necessary to study the whole of the SHP only to do so in context (Ball, 1986a p163).

The structures of provision approach rather than being a fully specified model of the development process is a set of key presuppositions around which a context specific, both temporal and spatial, explanation of the development process is formed. As such it is difficult to offer a criticism of the 'model' and it is perhaps somewhat unfair as well as contradictory to compare it with other approaches directly. The synergies between the SHP thesis and the research approach adopted by this thesis will be examined in the next section.

## 3. Research methodology used in this thesis

What is apparent from the discussion in the previous section is that there is a conflict between developing a general theory, approach or model that is capable of universal application with the use of the theory, approach or model to explain real events. The major obstacle to developing a theory, approach or model is the conceptualisation of 'time'. The development process as with other manufacturing processes occurs 'through time'. As a consequence of this extended production period (Lee, 1999) many of the events occurring concurrently as well as consecutively. Any attempt to explain this empirically will to some extent be static. Even the use of temporal data is

either a 'snap-shot' at a point in time or an artificially constructed aggregate. Whilst individual developments may 'begin' and 'finish' the process is continual. As Ball and Harloe state: "*housing provision should not be seen as such a static linear process. Instead it is a dynamic one in which the nature of current consumption affects future consumption possibilities and with them the exchange and production aspects of provision as well*" (1992, p7). At the same time the process and the actors within it are evolving, therefore the context, particularly the institutional structures, are changing. It is likely therefore that any attempt to explain or understand the development process, in this case private sector house building, will have to go beyond solely reference to the empirical.

There has been growing discussion recently about the validity of the methodological approach of mainstream of economics. Increasingly mainstream economists have come to acknowledge what has been discussed by those 'outside' for many years. The lack of consistency between theory and practice (Blaug, 1992; McCloskey, 1983 and 1985) and the over-reliance on 'formalistic' model building based on arbitrary assumptions (T. Lawson, 1997) that have led to increasing irrelevant or erroneous conclusions have been the main thrusts of these arguments. According to T. Lawson (1997) the source of these issues is the lack of ontological rigor in theory building. He suggests that the way forward is to develop a new process of 'social explanation' based on the "*identifying social structures and conditions which govern, facilitate, or some way produce, actual social events and states of affairs of interest*" (T. Lawson, 1997 p192). This has analogies with Ball's description of a SHP (Ball, 1986a p158).

T. Lawson along with others such as Sayer and Maki, argue that the adoption of a 'realist' philosophy will enable (economic) science to develop more appropriate methodological approaches to understanding social phenomena. The adoption of a realist philosophy ensures that the appropriate ontological rigor is applied. As Sayer argues:

> "*Methods must be appropriate to the nature of the object we study and the purpose and expectation of our inquiry, … If we imagine a triangle whose corners are method, object and purpose, each corner needs to be considered in relation to the other two.*" (1992, p4)

This debate has also emerged within housing research in recent years. Somerville (1994, p212) argues that a number of general perspectives in housing theory development can be identified from the literature. Which can be grouped according to the "*conception[s] of the primary purpose of explanation in social science*". These purposes he defines as:

> "*ontological, epistemological, and methodological: ontological because explanations make assumptions about the nature of what is to be explained; epistemological, because explanations need to be clear about the nature of the knowledge they are seeking; and methodological, because explanations need to be explicit about ways in which such knowledge is to be acquired.* (Somerville, 1994 p212)

Somerville (1994, p212) identifies four 'types' of explanation of housing policy; 'systems of actors', 'hypothetico-deductive', 'realist' and 'cultural'. Later he reduces the focus of his analysis of housing theories to two: 'socialogical (or objectivist) realism' and 'social constructionism', going on to propose a third, 'contextualised rational action' (Somerville and Bengtsson, 2002). All of these approaches might be categorised within a continuum between 'positive' and 'non-positive' theories; where positive theories claim to hold a wholly 'objective' understanding or explanation of the world and non-positive a completely 'subjective' one. Hypothetico-deductive and sociological realism theories sit at the positive end of the spectrum, the cultural and social constructionism at the non-positive end, with realist and contextualised rational action somewhere between the two. The systems of actors approach is considered to operate at a different level to the other three and so may be consistent with all of the other three (Somerville, 1994 p227). In the earlier paper Somerville finds weaknesses with all four approaches although appears to favour cultural explanations but in the later paper with Bengtsson he moves towards the middle ground with the proposed contextualised rational action.

Both Sayer (1992) and T. Lawson (1997) conclude that the social world is characterised by 'strata' or 'domains', although there is some difference in the conceptualisation of these. T. Lawson depicts these as "*the empirical (experience*

*and impression), the actual (actual events and states of affairs) and the real (structures, powers, mechanisms and tendencies).*"

Fitzpatrick (2002), Franklin (2002) and J. Lawson (2002) all identify Somerville and Bengtsson's contextualised rational action as sharing strong ontological links with Critical Realism. Both Fitzpatrick (2002, p137) and J. Lawson (2002, p142) challenge the Somerville and Bengtsson's assertion of an 'objectivist fallacy'; citing alternative interpretations of the Realism's 'layers of reality'. For Fitzpatrick (2002, p137) it is Stones (2001) 'historical context' explanation where past structures guide current actions, which themselves create future structures. For J. Lawson it is the interdependency and temporal dynamics of Bhaskar's (1975) "*multi-dimensional notion of reality, flows of causality and the reproduction of social structures*" (2002, p143), which rebuts Somerville and Bengtsson's assertion.

J Lawson (2001b p34-6) sees the potential synergies between a critical realist approach and Ball's SHP thesis. However, Ball remains unconvinced as to its compatibility with the SHP framework (Ball and Harloe, 1992 p14). Although, the concern over the contingency appears misplaced given the realist belief that social reality is complexly structured, with constantly shifting causal mechanisms underlying the phenomena being experienced or observed. This is contrasted with the closed system deductivist modelling followed by mainstream neo-classical economics, where event regularities are expressed as 'covering laws'. These covering laws take the form 'whenever event *x* then event *y*', that is, whenever *x* happens then *y* happens, equally if we observe *y*, *x* must be the cause. This modelling is "*undermined by an ex posteriori recognition that the social world is open and hardly amenable to scientifically interesting closure*" (T. Lawson, 2001 p373).

Sommerville and Bengtsson's 'contextualised rational action' approach shares much with the Critical Realism of T. Lawson, adopted in this thesis. It accepts "*that the real world exists independently of our knowledge of it*" and "*our knowledge of that world is wholly fallible*" (Sommerville and Bengtsson, 2002 p124). They reject the objectivist position of perfect rationality in favour of 'thin rationality', thus avoiding the reductionism of the objectivist approach where all motives are reduced to simple one-dimensional goals. The purpose of this approach is not to construct idealised

models of collective actions, *but to explain and understand real-life social behaviour*" (ibid. p124). The approach enables the researcher to identify the 'driving forces' (T. Lawson's 'real' strata) through the empirical observation of 'outcomes' (T. Lawson's empirical strata). As with Lawson they see the open nature of this as conflicting with the purpose of exposing "*general social laws of the type 'if a then always b'*" (ibid. p124). The empirical nature of the realist investigation reflects Ball's key argument that the nature of SHPs is an empirical question.

The aim of the realist approach is to uncover and understand the causal mechanisms that regulate, shape or otherwise change the phenomena of interest. T. Lawson argues that in spite of the open and dynamic nature of the social world it is possible to distinguish the causal mechanisms of interest. This is done through the use of 'contrastives', 'demi-regularities' and 'relative explanatory power'. "*Contrastives are the descriptive statements taking the form 'this rather than that'*" (T. Lawson, 2001 p383). That is, they are an observation that is different from that which might have been expected *a priori*. This difference may be between two groups at a certain point in time or the same group at different points in time. It is the existence of these contrastives that alert us to the existence of something that may be worthy of investigation and explanation.

Our ability to theorise upon and undertake research into our environment depends on the existence of relatively stable underlying mechanisms or processes. Even in an open social world these mechanisms or processes form observable partial or demi (but not fixed or constant) regularities which are identifiable. It is these demi-regularities (demi-regs) that draw our attention to the existence of the underlying social mechanisms, processes or structures. Without them it would be impossible to verify theories, and if they could be verified, it may not be useful. It may not always be possible to observe these demi-regs as the influence of the underlying mechanism will vary through time and may be obscured by other countervailing mechanisms. They are not, however, deterministic or probabilistic occurrences that lend themselves to formalistic modelling (T. Lawson, 2001 p387).

There may be many hypotheses suggested to explain a particular contrastive demi-reg. The method of selection amongst the competing hypotheses will be on the basis

of relative explanatory power. The hypothesis that best explains the observation is accepted temporarily. This is an epistemological relativist position that accepts that knowledge is incomplete, imperfect and context dependent; therefore a hypothesis that was accepted yesterday may not be sufficient today because of changes in knowledge or context.

This research will adopt the Critical Realist ontology discussed above. Critical Realism accepts the use of, or need for, multiple methods, which correspond with Ball's espousal of non-deterministic methodology to include methods "*of empirical investigation and where necessary statistical analysis*" (Ball and Harloe, 1992 p4). As argued earlier the chosen method must be appropriate to the object of study and can be discerned by triangulation of method, object and purpose. However, far from being an 'anything goes' philosophy, by ensuring that methods and theories are based on ontological realism there is some basis for their evaluation.

This research will use a 'grounded theory' as the method of enquiry to develop a theory of housing production for the market sector. It will be grounded in empirical observation of all forms of data, both qualitative and quantitative, rather than constructed using hypothetico-deductive processes. It will be subject to the constant comparative method, which

> "*requires continual revision, modification, and amendment until all new units can be placed into an appropriate category and the inclusion of additional units into a category provides no new information,*" (Conceição Carvalho and Hudson, 1998 p4).

The method of grounded theory, when used to explain observed events, is "*to identify and delineate the structures, causal mechanisms and causal processes producing them*" (Lee, 2001 p8). The first step is to review the relevant theoretical, empirical and historical literature. Data is then collected on the phenomena and from any related or associated area. From this data categories or concepts are identified, and relationships between them defined. From these, core categories are identified from which a theory is developed. Patterns and/or tendencies in the data can be formally tested, and the results triangulated with other sources of data to support the

developing hypotheses. There is no attempt to simplify or omit data (i.e. a holistic approach); the realist explanation attempts to capture the complexity of the data, and as much as is practicable is incorporated into the theory, so that it provides the best possible explanation of the structures and causal mechanisms. Having constructed a theory it is tested against further observation in order to evaluate its ability to explain the observed events. Again this method is shared with Ball and Harloe's espousal of the method by which a SHP if developed (1992 p5).

**Schema of the Grounded Theory Method**

Pre-existing ideas or concepts

↓

Data collected with constant comparisons

↓

Conceptual categories identified from the data

↓

Core categories identified

↓

Substantive theory/basic social process

↓

Formal theory
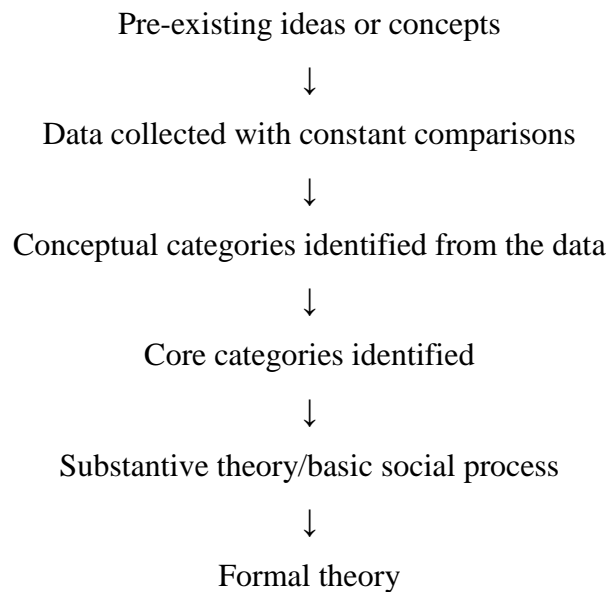
(*Source: Lee, 2001 p10*)

The aim here is to develop an open system theory that provides a logical explanation of market housing production. Initial observations of secondary data were used to form initial hypotheses. These were, and will be, continually revised and developed as the research progresses, uncovering the causal factors that best explain the spatial variation in production. There is no expectation that these causal factors will necessarily be constant or unchanging through time, only that they provide the best explanation for the period being researched.

# 4.     Method and explanation

The first stage of the research was to identify the phenomena of interest. Existing secondary data on the volume of housing building in England was examined to identify the most appropriate measure. Housing has two main measures of output, starts and completions (Gillen, 1994b p2), due to the extended and fluctuating period between the two (Gillen, 1994a p11). Data on starts and completions are published in two sources, ODPM (responsibility for housing is now with the Department for Communities and Local Government) and the National House Building Council. However, due to differences in the definitions and methods of data capture the two sets are not equivalent (Gillen, 1994b p3-7). This thesis has chosen to use the ODPM data as this source is used for other secondary data, and it is hoped that will give greater consistency and accuracy in the analyses. Gillen (1994b p9) also notes that NHBC membership accounts for around 90 per cent of the new build market and son may represent an underestimate of the actual levels of output. For ODPM data starts are recorded on the commencement of construction work, i.e. the foundations are laid, and completions when the dwelling is recorded as ready for occupation (Gillen, 1994b p3-4). However, to avoid paying council tax on complete but unsold properties house builders may be tempted to delay the process until the property is sold (Gillen, 1994b p5).

Recent research conducted by the London Research Centre (LRC) for the Department of the Environment, Transport and the Regions (the Department responsible for housing at the time) commented that "*there are undoubtedly problems in the data collected by the DETR from local authorities on residential development in terms of completeness, timelines and accuracy*" (DETR, 2000 p11). A survey of the local authority officers, who were responsible for completing returns to the DETR, noted a concern about the lag between completion of a dwelling and its' recording within the system. In particular they were concerned that building control officers did not always issue completion certificates (DETR, 2000 p12).

Around 370 local authorities collate and report the data on starts and completions. Due to the problems of late returns, non-returns and poorly completed forms the published figures are estimated to be between 3 and 5 per cent less than the actual

level of output. However, these are updated late and non-returns are received up to two years after the original date, which strengthens the case for the use of this source (Gillen, 1994b p9). The 2003 published figures were used, which should have included the majority of late returns for the last year of the study period (1995-2002).

Overall LRC concluded that the main problems with the data and current systems for collection was completeness as no single source records all of the changes to the dwelling stock (DETR, 2000 p57): new-build, conversions, demolitions, change of use, etc. "*For new dwellings, there was general acceptance that significant proportions of dwellings did not finally reach completion, in building control terms, until well after the dwellings were largely habitable or indeed occupied*" (ibid, p57). There were also a number of problems with conversions of existing dwellings as some developments take place without planning permission, whilst others do not require planning permission (ibid, p57). The collection and recording of data on the number of demolitions was also inconsistent (ibid p58). The consequence of these collection and recording issues is that the data on development activity are likely to be lower than the actual, and therefore the estimates of growth in the housing stock are likely to be underestimates (ibid. p59).

Data on the number of starts and completions for each of the English regions was considered, both in absolute and relative terms, new construction alone and as a proportion of total housing transactions. The indicator was used to provide a contrastive against which a realist theory of residential developer behaviour could be developed and from this the variation in market sector housing output is explained. The choice of 'indicator' was in the end a subjective one, but it was felt that the measure chosen offered would facilitate a deeper understanding of the actions of residential developers and subsequently variations in output.

The second stage of the research was to conduct a survey of residential developers (see Appendix One). There are two main types of data; primary data, which is collected specifically for the purposes of the research, and secondary data, which is data that has been collected by third parties for other purposes. Whilst secondary data needs only to be extracted from the source primary data has to be gathered using one or more of a number of methods (Kumar, 2005 p118). Secondary sources include

documents such as Government publications, earlier research, Census data, etc. Primary data can be collected through three main approaches: observation, face to face or telephone interviews and questionnaire surveys. Each of these can be subdivided further: observation into participant and non-participant, interviews into structured and non-structured, and questionnaires into mailed and collective. One or more of these can be used dependant upon the purpose of the study and the available resources (Kumar, 2005 p119). Observation is suitable for the detailed study of small groups or individuals to record behaviour or interaction and was therefore considered inappropriate for this research. The remaining two survey instruments, interview and questionnaire are considered below.

Interviews can range from the rigidly structured, with a predetermined set of questions, to the completely unstructured, where the respondent determines the content rather than being interviewer led. They can be one-to-one, involving just the researcher and the interviewee, or they can involve larger focus groups. Both of these can range from formal to informal in structure, however, for in-depth interviews the one-to-one format is usual, particularly if information is required in some detail of the information is complex. Focus groups are useful for gathering information on a wider range of issues particularly when the group have some common experience or perspective; they are particularly apposite when eliciting opinions and ideas about a topic. There is also the opportunity to explain questions in more detail to the respondent or for the moderator to make an introductory presentation to a focus group. It is also possible to gather supplementary information using these methods (Kumar, 2005 p124-132).

Questionnaires differ from interviews in that the respondent records the responses to questions; there is no opportunity for the researcher to interpret the questions. Questionnaires, as with interviews, can be administered in a number of ways: postal, collective administration and administration in a public place. Postal distribution is where the questionnaire is sent directly to the respondent by post (or email). For collective administration the questionnaire is distributed to a 'captive' audience, for example at a function attended by the target group. Finally the questionnaire can be administered in a public place, i.e. where the questionnaire is distributed, for example, in a shopping centre. The last of these were not suitable for this research

project, and the second would rely on the support of a third party, i.e. the function organisers, which may have put some restrictions or limits on the questionnaire and its distribution, so were not considered further. The application of questionnaires has two distinct advantages: firstly, it is less expensive than face-to-face interviews, particularly if the respondents are dispersed geographically. Secondly, the use of questionnaires offers greater anonymity to respondents if the information is sensitive (Kumar, 2005 p129-130).

The selection of either interviews or questionnaires to collect data should be based on the three criteria: the nature of the investigation, the geographical distribution of the study population and the type of study population (Kumar, 2005 p127). Both methods have the potential to introduce bias; interviews through the researcher or interviewer in the way questions are presented, and questionnaires through self-selection of the respondents. In selecting to undertake a questionnaire survey rather than interviews the geographical dispersion was critical. Although interviews have been used in other studies, Wellings (2006) is a good example; however, this was undertaken over and an extended period and access to the respondents was based on an established position within the industry and familiarity with the respondents. The second issue was sample size; it was considered unlikely that respondents who were prepared to complete a questionnaire would not be prepared to participate in a more time-consuming interview. Thirdly it is also contended that the type of data required for the analysis could reasonably and accurately be gathered by questionnaire. Finally, some of the information requested was potentially commercially sensitive and questionnaires can offer greater anonymity (Kumar, 2005 p130).

House-building firms or companies can be classified into two types, 'speculative' or 'contract'. Speculative house-builders are involved in all aspects of the development process from the identification and purchase of the land, through planning and development to the sale of the housing. Whereas contract house-builders are normally only 'contacted' to build a specified number of dwellings, although the precise level of involvement may vary from project to project (Gillen, 1994a p1). In some instances where there involvement is significant there are often referred to as 'partnership'. The house-building firm or company may also be involved within the wider construction industry, either directly or through and associated or parent

company, although Wellings observes a trend towards specialisation in house building (2006, p246). Even those who specialise in house building may only cater for particular sectors of the market such as retirement or executive homes (Gillen, 1994a p3).

There is also the issue of the classification of house-builders by size; what constitutes a small, medium or large house-builder? Annual turnover, employee numbers, starts and completions have all been the subject of analysis**.** Whilst annual turnover would offer the most accurate measure of a firm's or company's size, "*its use is problematic in that many of the larger housebuilders operate as part of major conglomerates*" and the turnover from house-building operations "*is often embodied within the larger groups accounts*" (Gillen, 1994a p8). Ball (1983), Gillen (1994a), Nicol and Hooper (1999) and Wellings (2006) all conclude that whilst 'unit volumes' provide the most consistent measure they are still not without problems, not least the physical heterogeneity of housing.

Ball (1983) categorises firms into five groupings, 'petty capitalist housebuilders', 'small family capital housebuilders', 'non-speculative housebuilding capital', 'large capital housebuilding firms' and 'major housebuilders'. Ball provides indicative annual output figures for each of these (500 for major house-builders), although these were indicative rather than prescriptive. His main aim in giving descriptive titles to each type is to capture the main financing and management structures and from this to identify the affects on firm behaviour. Other studies have used different thresholds: Bather (1976), 500; Cullen (1979), 2500; Fielding (1982) 250; Fleming (1984), 100; Hake (1993), 5000; and Lambert (1990), 2000. However, each of these had different hypotheses to expound and so chose appropriate measures to illustrate them. As Wellings concludes: "*a line has to drawn, and it is only by an insignificant margin that a company is put on one side of the line or another*" (2006, p33).

Increasingly the larger volume house-builders are dominating the output of the house-building industry (Gillen, 1994a p6). It is the belief of this thesis that the behaviour and actions of these dominant house-builders impacts the output of the industry as a whole, a hypothesis that is developed in chapter eight. As Gillen observes: "*very few studies … have concentrated on the degree of monopoly power*

*within the housebuilding industry*", and where they have the "*actual or potential implications are not addressed*" (1994a, p7). It was therefore decided to target the questionnaire survey at the volume house-builders. However, rather than set an arbitrary production threshold the data gathered would be explored to determine where (if at all) a behavioural difference occurred. Between 2000 and 2006 Wellings edited the *Private Housebuilder Annual*. It contains financial, output and other details of the largest UK based house-builders. As such it offered the most authoritative source of data on these firms. The sample frame for the questionnaire survey was taken from the *Credit Lyonnaise Private Housebuilding Annual 2000*. The sample frame consisted of all seventy-five firms listed in that years review. This provided the population base for the collection and analysis of data; in reality there were no other manageable approaches to achieve the intended outcome.

The first section of the questionnaire captured 'control variables', which were used to allow comparisons to be made between population and sample, and to identify sub-groups; for example, identifying differences in behaviour between firms of relative different sizes or those that traded predominantly in the north or south of the country. The following four sections were designed to capture the key behavioural attributes and perceptions of residential developers in making production decisions. It helped to identify the factors that were considered key in the determination of demand and supply.

The judgement concerning the relative benefits of data collected as 'stated' preference, for example from questionnaires and interviews, over 'revealed' preference data, where data on observed outcomes are gathered, is subjective. There is the possibility with data generated from the use of questionnaires and interviews that the responses become biased in favour of those that the respondent believes the surveyor or peers expect, i.e. they will state what they think is the 'correct' answer should be rather than one which reveals their 'true' motivations or rationale for their actions. For revealed preference there is the opposite problem, in that the data may not represent the outcome that the firm or individual intended in making their choices, i.e. the actions taken by the firm or individual did not have the intended consequence and therefore again the outcome will not necessarily reveal the motivations or rationale for their actions. There are also significant data collection,

recording and reporting issues; these are discussed in more detail in chapter four. It is argued here that the use of mixed methods provides a 'check' and will help to identify any discrepancies from either method. There is a danger that if there is a significant discrepancy between the stated or revealed datasets it will be impractical to determine which is in error. The choice of one over the other must then be based on the 'weight of probability'; however, this it is argued is no worse than the choice to use a single method alone. The responses to the survey questionnaire were interrogated using the appropriate parametric and non-parametric tests. These were used to confirm or reject preliminary hypotheses on the key behavioural characteristics of house building firms. These findings were then used to develop a conceptual model of house builder behaviour with regard to output decisions.

The third stage of the research involved interrogating secondary data, the choice of which has been guided mainly by the responses to the survey questionnaire in the previous stage of the research, but also with reference to other theories and research identified in the literature review. As with the collection and use of primary data, secondary data must be employed with caution and the usual caveats applied to any findings.

The initial investigation of the secondary data was limited to descriptive analysis; observations were made on the spatial tendencies within the data. These opening investigations were used to develop initial hypotheses regarding the observed spatial variations in output. The later stages involved interrogating the data using bivariate correlation to identify possible associations between the measure of output and the factors hypothesised to determine output. This analysis was then extended to develop a 'causal chain' in which the main forces were delineated. When this analysis was combined with the model of house builder behaviour was then used to develop a broader understanding of the development process more fully the spatial variations in the supply of new housing for owner occupation.

In summary this research will develop a realist approach to investigating the house building firm and industry. This will guide and structure the investigation; denote a set of criteria by which the research can be assessed. It will use multiple methods gathering both qualitative and quantitative data; this thesis argues that this will

strengthen rather than weaken the results of the analysis. By using research 'grounded' in empirical investigation it will ensure that the research develops a theory of output, firm and industry, that accords with reality and that the conclusions are relevant to practitioners and policy makers. The next chapter explores the English housing market; firstly to develop an understanding of the context of the research and secondly to identify the specific measure of output to be investigated by the research.

**Chapter Four**

**The English Housing Market**

## 1. Introduction

The purpose of this chapter is to develop and define the question to be examined and answered by the research by examining various aspects of the English housing market. The chapter is divided into seven sections. The next section deals with definitional and data issues. It sets out the definitions of the terms used in the research question as applied in the research. At the same time it considers some of the problems with the data used both in framing the questions and developing the arguments. The primary concern of section three, four and five is to establish any significant differences between regional housing markets in general and more specifically regional production levels, both in terms of relative overall output and the composition of production, i.e. type of dwelling (detached, semi, terraced, etc.). Section three takes a general look at the English housing market; the data presented looks at changes in the English market between 1995 and 2002. The next section examines various aspects of the differences between the English regional housing markets, comparing and contrasting the average differences between the regional housing markets over the same period. The next section presents more detailed case studies of the North West and the East of England. The case studies will be used to highlight the differences in production and to examine them in more detail. The sixth section takes a look at the private sector house building industry in England. An examination of the structure of the industry and the nature of house building are undertaken. The final section summarises the main characteristics of regional housing markets and house building in England and then sets out the 'measure' of housing output to be explained by the research and the arguments supporting the choice made.

## 2. Definitions and data issues

In this section the main terms used in the research question, *spatial, market, housing* and *production* are defined. As definitions are often a matter of interpretation those

used here are not claimed to be definitive but are working definitions as used for the purposes of this research.

The term *market* can be defined in a number of ways; within the context "*The English Housing Market*" the most appropriate definition is "*the trade in a specified commodity*" (Oxford University Press, 1995 p834), housing being the specified commodity.

The term 'housing' is used to capture all types of dwelling, for example, detached houses, semi-detached houses, flats, maisonettes etc. The simplified Census definition is worthy of inclusion here as it is used as an additional check on the data published by the ODPM; it defines housing as a "*self-contained unit of accommodation. Self-containment is where all the rooms (in particular the basic facilities i.e. kitchen, bathroom and toilet) are behind a door that only a household can use*" (ODPM, 2004: p156). The data reported in *House Building Statistics* generally only include permanent dwellings, which must satisfy one of several criteria relating to construction materials, size and expected lifespan (ODPM, 2004: p156).

Housing markets can be divided at a number of different spatial scales, international, national, regional, local authority, etc. In most cases of empirical research they are normally defined by artificially imposed administrative boundaries. These often

> "*have only limited significance ... for example inter-regional migration, which is often considered as a measure of long-distance population movement, may, in practice, represent only short distance flows as individuals cross either side of arbitrary administrative boundaries.*" (Meen, 2001: p3-4)

Jones further suggests that these boundaries "*are subject to arbitrary change and may not have any functional meaning within the housing system*" (2002: p549). There is still considerable debate as to the best way to define Housing Market Areas (HMA) and doing so is likely to be a substantial project in itself. Whilst recognizing the limitations of data aggregated to administrative rather than housing-market areas it was decided to proceed using data based on administrative boundaries, in this case

Government Office Regions (GOR). HMAs are defined in the latest ODPM guidance as:

> "*wherever willing buyers and willing sellers are in contact with one another ... and ... are limited because most people seeking ... a house will choose between houses within a fairly limited geographical area. These areas within which people are willing to search for housing (search areas) are determined by such factors as proximity to family, friends and access to employment, education and other facilities. It is the overlapping of the search areas of substantial numbers of households which create local housing markets.*" (ODPM, 2004 p26)

It is contended that, previous comments aside, the use of the GOR data will provide two benefits. Firstly, the ODPM publish secondary data on most aspects of housing and households at a regional level; by using data predominantly from one source it is expected that this will give some consistency with the geographical areas covered and the methods of collection, therefore reducing problems when comparing variables. Secondly, it is argued that the 'migration' problem noted by Meen will not substantively impact upon the findings of this research project, where the effects of any 'local' migration will be offset, at least to some degree, by similar movements in the opposite direction.

The research will attempt to explain regional (based on GOR) difference in housing output for the period 1995 – 2002. Hereafter all references to regions or regional can be taken as referring to government office regions unless otherwise stated.

The research has also used data on average dwelling prices and sales transactions reported by HM Land Registry (HMLR). HMLR report its data based on Standard Statistical Regions (SSR), whereas that reported by the ODPM is aggregated by GORs. This difference and its consequences will be considered in more detail later; essentially for SSRs the North East becomes the 'North' and includes Cumbria (which is in the North West for GORs). East Anglia (SSR) loses Bedfordshire, Hertfordshire, Essex and the unitary authorities of Luton, Thurrock and Southend-on-Sea to the South East (SSR) compared to the GORs of the East and South East. Although the ODPM publishes house price data that is based on GORs and 'mix adjusted' so that the typical dwelling for each classification remains constant it was

felt that the 'all sales' sample produced by the HMLR offered significant advantages over the '5%' sample method employed by ODPM.

Market (or private sector) housing is in the main developed for owner occupation, but may also be for either private sector rental (i.e. non-subsidised) or second homes. Private sector house building in England represents around 80% of the total supply of new dwellings. As ODPM data is being used it is useful here to repeat the definition used for private sector housing.

> "*Where the term 'private sector' is used in ... housing statistics, it is generally meant 'private housing' sector ... i.e. owner-occupied dwellings and those rented privately including those that go with job or business*" (ODPM, 2004, p158).

Production here refers to the output of all residential developers and house builders in England. It is only on this point that the aims of the research are not matched by the data reported by ODPM. The 'starts' and 'completions' data reported in *Housing Statistics* does not include the conversion of other previously non-residential properties, for example, old textile mills and office buildings, to residential use. The figures reported are 'new build' only, which may be either greenfield or brownfield developments. Further investigations have been unable to discover any published source of the number of conversions. It is collected on planning returns by the regional planning bodies and conversions are now identified on Housing Flows Reconciliation returns (HFR), but as yet these are not published consistently across all regions. As conversions contribute to the supply of dwellings, i.e. they increase the total available stock, there is an effect on the demand for other new housing and they are in the main undertaken by 'mainstream' house builders. The research will have, at the appropriate stages, to make allowance for the discrepancy. The data also come with a further *caveat*:

> "*For house building starts and completions data, especially the former, there is a small possibility that some dwellings built for RSLs/HAs* [Registered Social Landlords/Housing Associations] *could have been counted as 'private enterprise' and vice versa. This is because sometimes the builders themselves*

*are not sure of the precise ownership or the ownership may keep evolving and it is not final until it was sold.*" (ODPM, 2004 p158)

The level of private sector output can be expressed in a number of different ways, the choice of which will be influenced by two factors. Firstly it will reflect a particular set of beliefs about the operation of, and influences on, private sector house building. Secondly, it will depend upon the question for which the data is being used to resolve. Output can be expressed: i) as an absolute value, e.g. 15,000 completions in region 'A', ii) as a relative value, e.g. 2.5 completions per thousand head of population in region 'B', or iii) as a proportionate value, e.g. 80% of the total new housing supply (includes the social sector) or 15% of all dwelling sales (includes second-hand) in region 'C'.

"*The use of absolute values can be adopted where it is believed that there are few constraints on the activities of a particular sector*" (Golland, 1996: p 20), that is, in this case, it would be assumed that the private sector operates independently of government influence and the output of other sectors. The use of proportionate values is the antithesis of this view, where it is assumed that either government policy or the activities of other sectors has an effect on private sector output. Relative values may be used where comparisons between two countries or regions are being made. They are especially useful where they differ in size, by geographic area or population for example, as they 'scale' the values giving a more effective comparison.

## 3. The English housing market

This section examines the general trends in housing output and the housing market in England from 1995 to 2002. A general picture is presented against which the regional variations in housing output can be compared. It will look at the trends in output in both the private and social sectors, together with the proportion of new to second-hand dwelling sales. The aim is to assist in defining the research question in precise terms and to identify any potential links between these variables for examination later in the research.

The total supply of new housing has fallen steadily between 1995 and 2001 (figure 4.1), rising again in 2002 to just above the level in 2000. Over the period there has been a fall of just below 15 percent in the total number of completions, including private sector, registered social landlords (RSLs) and local authority (LA). The fall has been due to the significant fall in the supply of new social sector housing (RSLs and LA), which has fallen by over half from 32,000 completions per annum in 1995 to 14,000 in 2002. The number of private sector completions was on average lower in the second half of the period, although the number rose again in 2002. This resulted in an increase in the total number of new dwellings as the increase exceeded the fall in social sector completions for the first time during the period.

**Figure 4.1 All sector new dwelling completions**
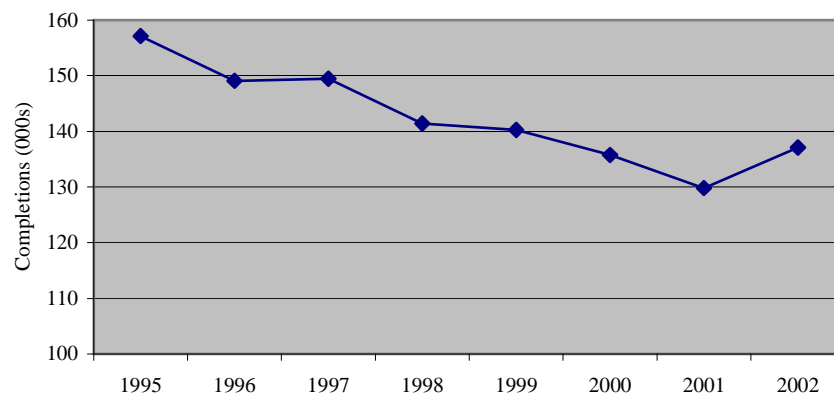


*Source: ODPM (2003)*

As a result of the falling number of social sector completions the proportion of new supply coming from the private sector rose steadily between 1995 and 2002, rising from 80 percent in 1995 to 90 percent in 2002. These figures would seem to indicate that private sector housing is not to any significant extent replacing the lost social sector production. This may be for a number of reasons; there are insufficient resources (i.e. the factors of production: land, labour and capital) for them to increase production. There may be no overlap or competition between the sectors, i.e. neither set of consumers are active in the other 'market', for example social sector consumers may be constrained by the availability of finance and are therefore unable to create effective demand for private sector dwellings. Alternatively it may be that the house builders are consciously choosing not to increase production, for strategic or other reasons. These alternatives will be considered later in more detail.

**Figure 4.2 Private sector annual net starts**
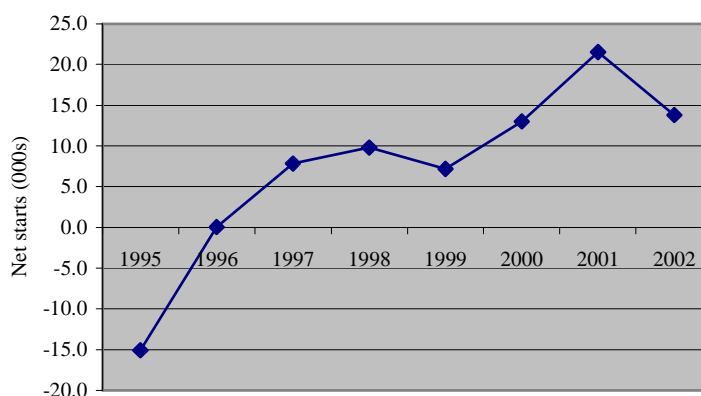


*Source: ODPM (2003)*

From the gradual fall in the number of private sector completions there appears to be an expectation of lower future demand on the part of house builders, assuming that there are sufficient resources for them to at least maintain current levels of output. An alternative picture emerges when the number of 'net starts' is examined (that is, the number of starts minus the number of completions for a given period). Figure 4.2 shows the number of net starts for the private sector. Ball first proposed the use of net starts as an "*improvement on using either starts or completions*" (1983 p106-7). The choice of measure will depend on the question the research is investigating; however, net starts are a good "*indicator of new commitments of capital to housebuilding*" (ibid. p106). Only in 1995 did the number of completions exceed the number of starts, all other years saw the number of starts exceeding completions (although in 1996 this was marginal). The number of dwellings under construction was almost sixty thousand higher in 2002 than in 1995, which may indicate increasing levels of confidence amongst house builders.

**Table 4.1 Number of dwelling transactions (000s)**

| Year | Second-hand | New |
|------|-------------|-----|
| 1995 | 664 | 103 |
| 1996 | 815 | 111 |
| 1997 | 931 | 117 |
| 1998 | 889 | 106 |
| 1999 | 1034 | 115 |
| 2000 | 927 | 111 |
| 2001 | 930 | 112 |
| 2002 | 1186 | 108 |

*Source: HM Land Registry (Bespoke data set)*

Table 4.1 shows the number of second-hand and new dwelling sales. There has been a general upward trend in the number of second-hand sales between 1995 and 2002, whilst the number of new sales has remained relatively stable. This has resulted in new dwellings forming a smaller proportion of the total 'supply', falling from 13 percent in 1995 to 8 percent in 2002 (as shown in table 4.2). The difference in activity between the new and second-hand markets may be an indicator of a constraint on new house building, alternatively it may be that activity in the two markets are driven by a different set of factors.

**Table 4.2 Proportion of new sales**

| Year | Proportion new |
|------|----------------|
| 1995 | 13% |
| 1996 | 12% |
| 1997 | 11% |
| 1998 | 11% |
| 1999 | 10% |
| 2000 | 11% |
| 2001 | 11% |
| 2002 | 8% |

*Source: HM Land Registry (Bespoke data set)*

## 4.      The regional housing markets

Regional levels of output for the period 1995 – 2002 are shown in figure 4.3. The average numbers of private sector completions per 1000 head of population together with the output range are shown. There is a significant regional variation in the level of output, ranging from an average of just 1.4 in London to 3.3 in the East Midlands. London, here and in the following analysis, displays appreciably different characteristics to the other eight regions. This probably has more to do with its status as capital city and as a 'city region' as much as the other factors that are likely to cause differences in output between the other English regions.

London aside, the regions can be separated into two groups along a line from the Humber to the Bristol Channel: the 'south-eastern' regions of the East Midlands, East, South West and South East with average completion rates between 2.6 and 3.6, and the 'north-western' regions of Yorkshire & Humber, the North West, North East and West Midlands with rates between 2.3 and 2.5, reflecting the north/south divide often discussed in relation to housing.

**Figure 4.3 Average annual private sector completions**
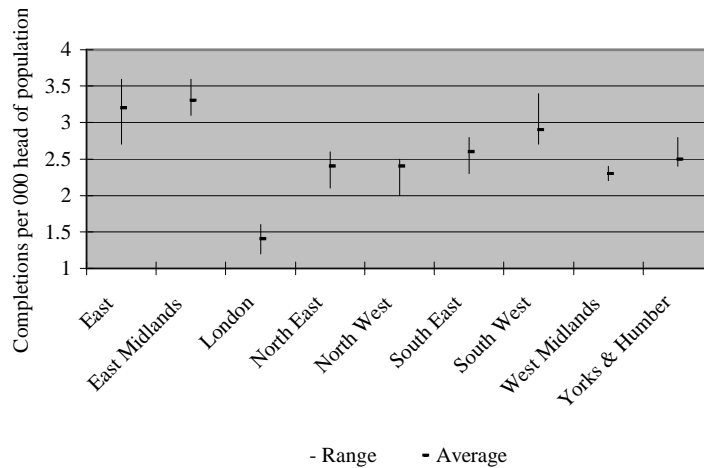


Source: ODPM (2003)

This difference in output rates is more significant when considering the effect of the East Midlands having a population equivalent to the South East. The difference in production rates would have meant that over 20,000 more dwellings would have been built in the East Midlands than the South East over the eight years 1995-2002. There has also been a greater fluctuation in output in some regions. The East and South West have shown the greatest variation in output with ranges of 0.9 and 0.8 respectively, whereas output in the West Midlands has been relatively stable with a range of just 0.2. The remaining regions have ranges of between 0.4 and 0.5.

**Figure 4.4 Net starts as a proportion of starts 1995-2002**
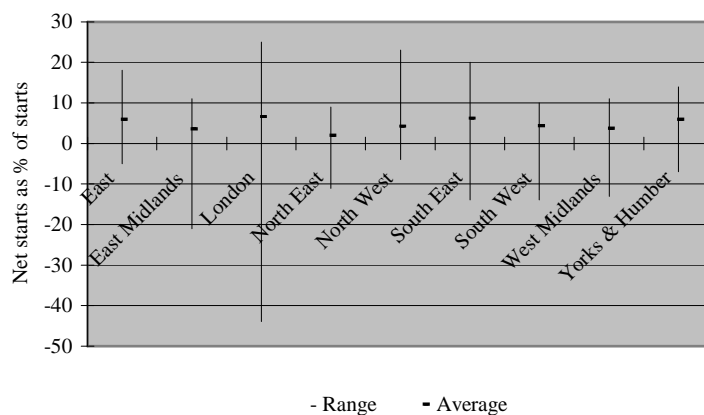


Source: ODPM (2003)

Figure 4.4 shows the average net starts (starts minus completions) as a proportion of the average number of starts for the period 1995 – 2002. This is a good measure of

the changes in the amount of work-in-progress: positive values (starts exceeding completions) indicating an increase in the number of dwellings under construction and negative values indicating the reverse. As such positive and negative values might be taken as an indication of general 'expectations' or confidence in the market. In 1995 all regions showed negative net starts; by 1999 all regions were showing positive values for cumulative net starts. By 2002 the level of work-in-progress had increased significantly in most regions, the increases ranged from just over 1,200 in the North East to almost 12,000 in the South East, not adjusted for differences in relative population and size. From figure 4.4 we can see that the picture is significantly different from that presented in figure 4.3. London had a significant fall in the level of work-in-progress for 1995 but showed large increases over the last three years of the period to finish with the highest average increase at 9.7 percent. The North East had the weakest growth at 2.5 percent, with the other regions ranging between 4.2 and 6.7 percent. Interestingly the East Midlands, which showed the strongest output levels in figure 4.3, was one of the weakest here. This suggests that the level of output has been relatively strong and stable compared to other regions.

Figure 4.5 shows output in terms of the annual additions to stock. This presents a similar picture to figure 4.3 with the East and East Midlands showing the highest 'on average' relative output by this measure, with 0.916% and 0.966% respectively. London aside the other regions have very similar rates of growth at around 0.75% per annum.



**Figure 4.5 Average annual additions to the stock**
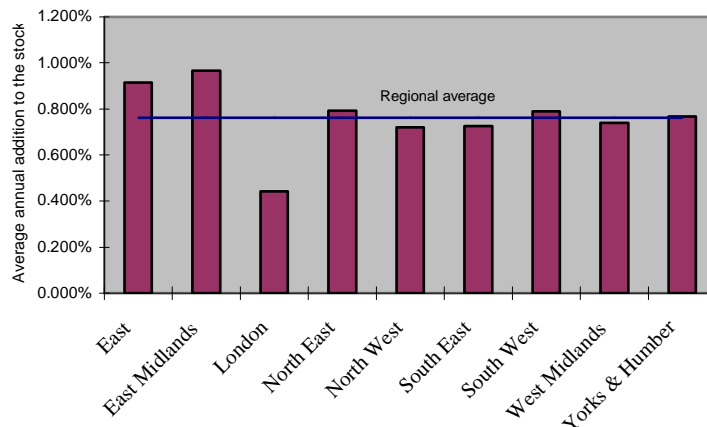
*Source: ODPM (2003)*

The composition of output by dwelling type for the nine regions is shown in figure 4.6. Again, here it is the East and East Midlands that display significant, and potentially important, differences to the other regions. Whilst these two regions appear to have similar proportions of semi-detached and terraced dwellings to the other regions, they have, on average, higher proportions of detached houses (and subsequently lower levels of flats and maisonettes) than the other regions. Their higher levels of output may be linked to this given consumers preference for detached houses (Hooper, 2002 p113), alternatively may reflect differing urban/rural proportions. As before London displays dramatically different output characteristics to the other regions, over 70% of new build was flats and maisonettes, this is not surprising given that it is a city region where space is at a premium.

**Figure 4.6 Composition of new dwelling sales by type**
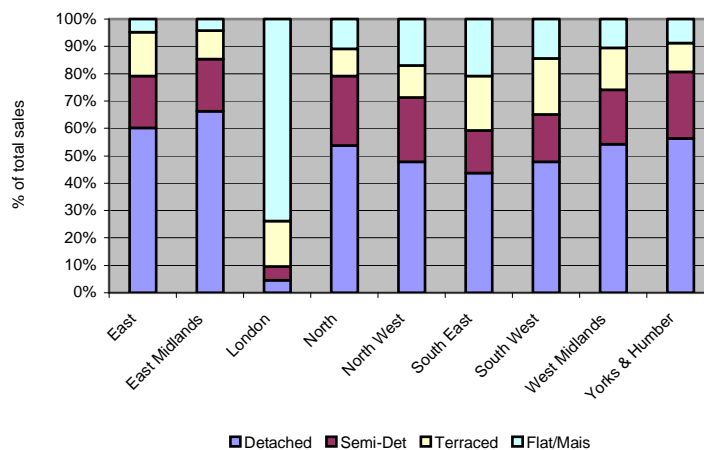


*Source: HM Land Registry (Bespoke data set)*

## 5.      The East and North West of England

In this section data contrasting housing production and other housing related variables for the East of England and the North West are presented. The process of contrasting these two regions will be carried through the research project in chapters 5, 6, 7 and 9, which examine the primary and secondary data.

The East and North West regions were chosen to provide a useful contrast against which the hypotheses of the research could be considered and the strength of its conclusions assessed. Several aspects of the two regions provided valuable contrasts

for this project. Firstly, the proximity of the East of England to the major English growth areas of London and the South East contrasts with the geographically more distant North West. Secondly, the research can look for evidence of the effects of the 'ripple effect' and the 'north/south' divide. In terms of landscape 9.1 percent of the North West is covered by built up areas, which is slightly above the English average of 8.8. The East of England by contrast is significantly below the national average at 7.9 percent. The population of the North West is around 25 percent higher at 6.7 million against 5.4 million in the East of England. The most significant contrast emerges when the population density is examined. The East of England covers approximately twelve thousand square kilometres giving a ratio of 0.45 head of population per square kilometre. The North West covering a little over six thousand square kilometres has a ratio of over double at 1.06 head of population per square kilometre. This higher population density is emphasised by the concentration of a significant proportion of the North West's population in the eighteen unitary authorities that form the Merseyside/Manchester conurbation.

**Figure 4.7 Private sector completions**
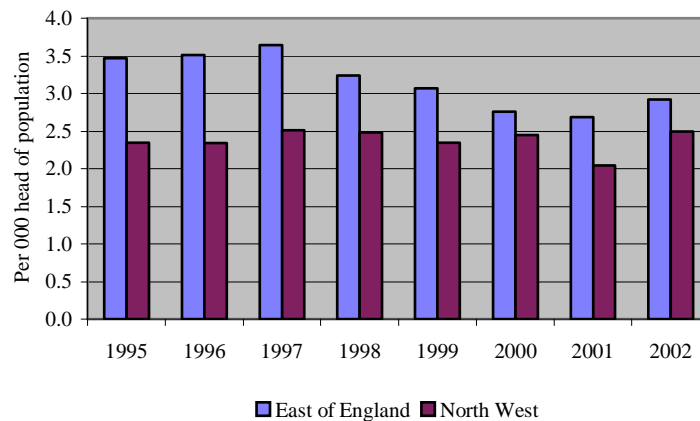


*Source: ODPM (2003)*

In the previous section figure 4.3 showed the average annual private sector completions per thousand head of population for the English regions. The East of England had an average of 3.2 whilst the North West averaged 2.4. Figure 4.7 shows in the annual figures for these two regions from 1995 to 2002. The level of completions in the East of England remains above the English regional average of 2.6 during the period whilst the North West does not achieve this level at any point.

The level of completions initially increases in the East of England before falling each year until 2001 and increasing again in 2002. The North West follows a similar trend except for 2000 when it increased falling again in 2001. A question raised here, as the regions seem to trend together but have different proportionate levels of output, is whether there are two sets of factors at work; one affecting the changes over time in the level of output and the other affecting the spatial difference, i.e. between regions. Alternatively is it a single set of factors that affects the regions to different degrees?

In section 2 figure 4.2 illustrated the strong growth in private sector capacity for England as a whole, with annual net starts being positive for all but 1995. Figure 4.8 shows the same data for the East of England and the North West. The two regions demonstrate a slower growth in capacity, both being negative or marginal for the first three years. After this the East of England shows steady growth in the number of net starts. The North West presents a more erratic picture; after marginal growth for a further year in 1998 then two years of lower growth followed by, in 2001, a high peak and falling back the following year. Here then, we do not have the similar trends observed in figure 4.7. As a measure of differences in output, both temporal and spatial, 'net starts' offers an alternative view to completions as a proportion of population and may, as suggested earlier, reflect the general level of confidence in future demand.

**Figure 4.8 Private sector net starts**
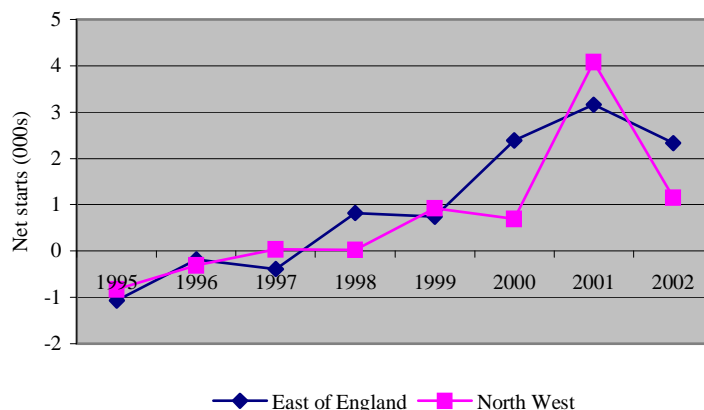


*Source: ODPM (2003)*

Table 4.3 shows the number of new dwelling sales for East Anglia and the North West. The picture is similar to that presented in table 4.1 where the level of new dwelling sales has been relatively stable finishing slightly higher at the end of the period. As with the earlier observation the number of sales generated from the existing stock has risen steadily between 1995 and 2002 resulting in new dwelling sales contributing a progressively smaller proportion of the supply (table 4.4). In 1995 new dwelling sales accounted for over 15 percent of the total in both regions, by 2002 this had fallen to just 9 percent in the North West and 11 percent in East Anglia. This is a fall of similar magnitude to the national one, but in both cases remained higher than the national average of 8 percent.

**Table 4.3 New sales transactions (000s)**

|      | North West | East Anglia |
|------|------------|-------------|
| 1995 | 13.03      | 6.07        |
| 1996 | 13.61      | 6.63        |
| 1997 | 14.00      | 6.96        |
| 1998 | 12.98      | 6.19        |
| 1999 | 12.93      | 6.40        |
| 2000 | 13.59      | 5.94        |
| 2001 | 13.06      | 6.49        |
| 2002 | 13.73      | 6.35        |

*Source: HM Land Registry (Bespoke data set)*

**Table 4.4 Proportion of new sales transactions**

|      | North West | East Anglia |
|------|------------|-------------|
| 1995 | 15%        | 16%         |
| 1996 | 14%        | 15%         |
| 1997 | 13%        | 13%         |
| 1998 | 12%        | 13%         |
| 1999 | 11%        | 11%         |
| 2000 | 11%        | 12%         |
| 2001 | 11%        | 13%         |
| 2002 | 9%         | 11%         |

*Source: HM Land Registry (Bespoke data set)*

Figure 4.6 in the previous section illustrated the composition of new dwelling sales for each of the English regions. A more detailed examination for the North West (figure 4.9) and East Anglia (figure 4.10) has been undertaken. In the North West over the first five years the composition remained comparatively stable, with the proportion of semi-detached houses falling slightly in favour of detached. After 1999, however, the proportion of detached and semi-detached houses fell significantly as the proportion of flats and maisonettes rose from around one in ten up to a third of all sales.

The possible causes for this trend will be considered in more detail later; initial hypotheses are that this is i) a result of Government policies on urban regeneration, e.g. sixty per cent of new housing development on brownfield (previously developed) sites nationally, or ii) as a result of demographic changes, e.g. falling household size, which require smaller dwellings.

**Figure 4.9 Composition of new dwelling sales by type for the North West**
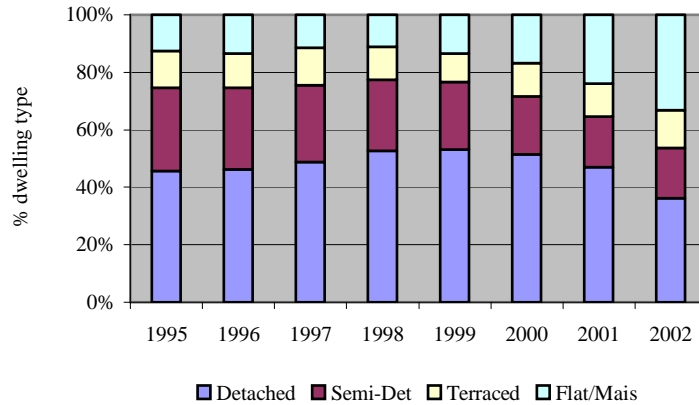


*Source: HM Land Registry (Bespoke data set)*

The picture for East Anglia is again different from that in the North West. The most significant difference is between the proportions of 'detached houses' and 'flats and maisonettes' sold in each region. For East Anglia the proportion of flats and maisonettes is lower and the detached houses higher than in the North West; with the figures for flats and maisonettes falling from 7 percent in 1995 to 3 percent in the middle of the period, rising again to 7 percent in 2002. Detached houses show the opposite trend to this finishing 5 percent higher in 2002 at the expense of semi-detached.

**Figure 4.10 Composition of new dwelling sales by type for East Anglia**
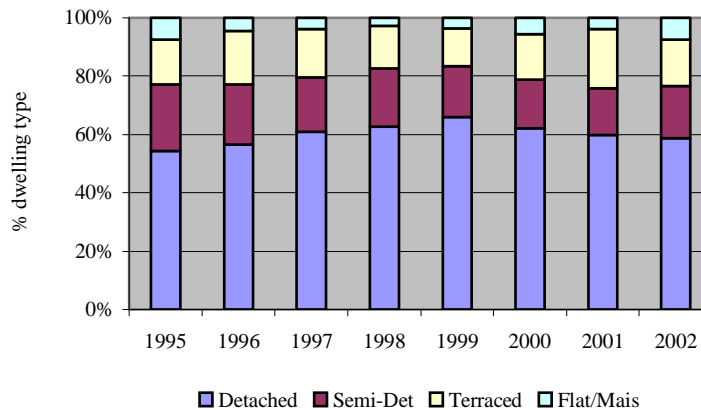


*Source: HM Land Registry (Bespoke data set)*

During the period the North West has, on average, seen higher relative levels of semi-detached houses and flats sold and lower levels of detached and terraced

houses, increasing the size of the 'average' house. Again this difference will be considered in more detail later in the research but initial hypotheses are that i) the North West has greater land constraints and therefore dwellings have to be built at greater densities, or ii) there is a difference in the income and wealth distributions of the households in the two regions leading to a difference in the 'average' dwelling demanded.

## 6. The house building industry

The structure of the house building industry has been described as "*displaying a pyramid composition, with a large number of small house-builders with a low output at its base, completed by a small number of companies with a large output at the top*" (Gillen and Golland, 2004 p80). During the period 1995 to 2002 the number of small and medium sized house builders (500 or less starts per annum) has declined by just over 20 percent compared to a 15 percent fall in the number of large house builders (based on National House Builders Council (NHBC) registrations). Whilst the structure of the industry may not have significantly changed during this period the relative outputs of the two groups have. The distributions for 1995 and 2002 are shown in figure 4.11 together with a 45° line.

**Figure 4.11 Output distribution of NHBC registered house builders**
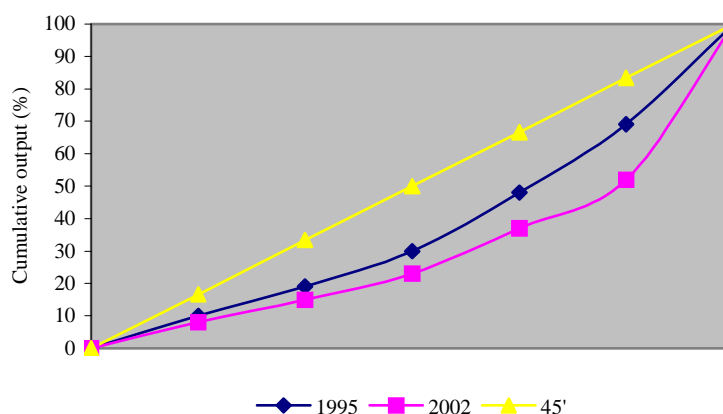


*Source: NHBC (2002)*

The distributions are generated by firstly sorting the firms into size based on NHBC registered starts. The output of the smallest firm is plotted first and then the output of

the two smallest and so on until the cumulative output of all firms is reached. At the 45° line all firms would have equal output, the further we move away from the 45° line the greater the concentration of output, i.e. greater proportion of output produced by a small number of larger firms. The use of percentages enables a comparison to be made when the total number of firms has changed. In fact only the group containing the very largest house builders (2000+ starts per annum) has increased between 1995 and 2002, which is evident from the movement of the 2002 line further from the 45° line showing a greater concentration of output with the largest firms.

Residential development in England is characterised by a significant time delay between the initial investment and confirmed sale for the dwellings, as a consequence "*builders for owner occupation are often called speculative housebuilders because they build for the general market, and face the risk that the homes they build will not sell*" (Ball, 1996: p28). The development of a site for residential use has several definite stages, site identification and purchase, site design and planning approval, development and finally, sale. The last two stages are often combined, dwellings sold *from plan*, to reduce the total development time. However, the development process is still likely to take in excess of twelve months, and probably longer, for the first sale to occur; for larger sites the last dwelling may not be sold for several years. The effects of this 'uncertainty' on the behaviour on house-builders will be discussed later.

## 7.     Summary and defining the question

In this final section the main characteristics of regional housing markets and housebuilding in England are summarised and a few tentative hypotheses are put forward. Finally the measure of housing output to be explained by the research is put forward together with the arguments for its choice.

Total new housing supply in England has fallen every year between 1995 and 2001, rising in 2002 to just above the level in 2000. This fall has been due, for the most part, to a significant fall in the number of social sector (RSL/LA) completions. The number of private sector completions has remained relatively stable. This, as suggested earlier, would seem to indicate that private sector housing is not to any

significant extent replacing the lost social sector production. This may be due to a number of factors; there are insufficient resources for them to increase production, although this seems unlikely in the case of labour and materials, as they were available in the previous years. There is a possibility that planning authorities are not releasing sufficient land for residential development; this is certainly the cry from housebuilders. There may be no competition between the sectors, that is, social sector consumers are demand constrained and are therefore unable to create effective demand for private sector dwellings. Alternatively it may be that the housebuilders are consciously choosing not to increase production. All of these will be examined further in later chapters.

Private sector house building, despite industry claims to the contrary, seems to be in reasonable health. Figure 4.2 showed the number of net starts on a strong positive trend with the number of starts exceeding completions in most years. This increase in capacity means that almost sixty thousand more dwellings were under construction at the end of the period compared to the beginning. The increase in capacity could be seen as indicative of house builders increasing confidence in future demand.

Whilst the sales of new dwellings have remained relatively stable the number of second-hand sales has increased steadily, resulting in new sales making up a smaller proportion of the overall supply. The result of this from the house builders' perspective is a reduction in the influence new housing production has on the general market. The disparity in the responses from the two markets, if they can be characterised as two separate markets, may be indicating some constraint on new house building. Alternatively it may be that activity in the two markets is driven by a different set of factors, or as suggested earlier it may be that the house builders are consciously choosing not to increase production at an equal rate for strategic reasons.

The English regional housing market shows some valuable contrasts, which do not always reflect the north/south divide often proposed as a characterisation. London in particular seems to provide the most distinctive contrasts to the other regions and as suggested earlier this maybe as a result of its 'capital city/city region' status. Of the remaining regions the East and East Midlands are the two that show the most regular differences to the others. London aside the North East is consistently in the group of

regions with the lowest output levels. Sometimes the other 'northern' regions, the North West and Yorkshire and Humberside, join it, but this grouping is not always a useful classification. There appears to be some correlation at the regional level between the overall level of output and the proportion of detached housing built. The East of England and the North West have been used as case studies to examine the regional variations in more detail as they in most cases offer a significant contrast.

Although the East and North West seem to trend together in most cases they do this at differing (proportionate) levels of output. There are two possible hypotheses as to why this may be the case: firstly it may be that there are two sets of factors at work; one affecting the changes over time in the level of output and the other affecting the spatial difference, i.e. between regions. Alternatively it is a single set of factors that affect the regions to different degrees.

There is some debate over the 'best' measure of house building output (Gillen and Golland, 2004), starts as against completions, and with a long and variable lag between the two it may be that a combination, such as net starts, is better than one or the other in isolation. The measure which the research will 'explain' in terms of regional variation and 'use to explain' in terms of the output of the house building industry is 'completions per head of population'. Completions rather than starts have been chosen because as house builders attempt to adjust the rate to match demand, it is hoped that this will give a better guide to the factors that influence house builders' output decisions. The use of completions rather than starts, or a combination of the two does not suggest that they can be considered separately. Starts and completions are two sides of the same coin and therefore any reference to the number of completions must at the very least take account of the level of starts in previous periods.

**Table 4.5 Average private sector completions 1995-2002**

|  | Completions per 000 head population |
|---|---|
| East | 3.2 |
| East Midlands | 3.3 |
| London | 1.4 |
| North East | 2.4 |
| North West | 2.4 |
| South East | 2.6 |
| South West | 2.9 |
| West Midlands | 2.3 |
| Yorkshire & Humberside | 2.5 |

*Source: ODPM (2003)*

There are significant population differences between regions and it would be expected that, other things being equal, the region with the largest population would have the highest level of output. The rate 'per head of population' was therefore used to give relative comparisons between regions. Table 4.5 shows completions per head of population for each of the English regions. It shows again the earlier observed groupings of the East and East Midlands with the highest, on average, levels of completions at 3.2 and 3.3 respectively. The second group contains the remaining regions with the exception of London and have rates ranging between 2.3 in the West Midlands and 2.9 the South West. London has an average rate of 1.4, which is less than half the top group. Here again the East and the North West provide a useful contrast to each other.

The specific measure of *market housing production* that this research will explain is 'completions per thousand head of population'. Spatially this will be done at the regional level, with particular reference to the North West and East regional case studies.

**Chapter Five**

**Questionnaire Evidence of House-builder Behaviour**

**1. Introduction**

This chapter presents the data gathered from questionnaires sent to private house-building firms in England. The questionnaire was primarily designed to identify the important behavioural and institutional aspects of production decisions in private sector house building. However, the investigation of the English housing market in the previous chapter identified a number of interesting characteristics that it was hoped the questionnaire would be able to assist in developing an explanation. The combination of these should provide the basis for a deeper explanation of house-builder behaviour and private sector housing output in England, fulfilling the main aims of the research.

It is worth repeating at this point the primary hypotheses of the research and the additional questions raised in chapter four. The main hypotheses of the research are then: "*that there is a set of factors that affect private sector output, and that; a) the value of the factors may vary for each region; b) the influence (co-efficient) may vary regionally; and c) that the value and influence will vary through time; and it is these variations that explain the variation in regional private sector output*".

In chapter four there were three observations that justify further investigation. Firstly, it was observed that private sector output has not replaced the falling level of social sector output. Four possible explanations of this were offered; i) that there was insufficient resources, i.e. land, labour or capital, for the private sector to increase output; ii) that the overall demand for new housing has fallen in line with the fall in social sector output; iii) that there is no overlap or competition between the private and social sectors, i.e. social and private sector consumers are not active in the other sector; iv) house-builders have made the choice not to increase output. Alternatively it may be combination of the four explanations or some, as yet, unidentified cause.

The second observation noted was that during the period of study the number of second-hand dwelling transactions increased whilst the number of new dwelling

transactions remained relatively stable. Explanations i), ii) and iv) offered in the previous paragraph may explain this lack of increase in private sector output when the level of activity in the second-hand market is increasing. Alternatively the explanation may be that the two markets operate independently, to some extent at least, and are driven by a different combination of factors.

The third observation was that whilst private sector output in the North West and the East of England seem to follow similar trends they do so at differing relative levels. This may be demand driven by different rates of household formation or migration from the north to the south, for example. Alternatively is may be due to supply side factors, for example, by the rate or level of planning consents or a reserve of housing in the stock. Each of these three observations along with the main hypotheses will be addressed, at least in part, by one or more of the questions set by the questionnaire.

## 2.      Framing the questionnaire

The sample frame for this questionnaire survey was taken from the *Credit Lyonnaise Private Housebuilding Annual 2000*. The sample frame consisted of all 75 firms listed in that years review. Each firm was contacted by telephone so that the questionnaires could be personalised being addressed to the financial director; it was expected that in personalising the contact the response rate would be improved. The questionnaire was then sent to the firms, from which 27 completed responses were received, although one was discounted as the firm only operated in Scotland (this research project is limited to England). Four house-builders returned the questionnaire uncompleted as they were unwilling or felt unable to participate in the survey. This left 46 firms who did not respond at all to the questionnaire. This gave a (useable) response rate of 35%, which was considered to be high enough to give valid and significant results.

The questionnaire was divided into six sections (see Appendix One). The first section contains control variables. These served two purposes, firstly to enable comparisons to be made between population and sample and secondly to identify sub-groups or populations, for example, do different groups, large and small firms, behave significantly different in the way they make production decisions? The second

section asked about various long and short-run goals of the firm. It was important to establish the relative importance of these, as they were likely to impact on the behaviour of the firm. For example, firms that focus predominantly on the longer term are less likely to respond to short-term fluctuations in demand or price. The following section contained questions on target setting, for example, the extent to which output decisions are decentralised and whether different factors are considered in different regions when setting production targets. The fourth section related to land holding practices; here important differences were expected. It was expected that larger firms would show clear differences in land holding practices; this is likely to contribute to differences in the behaviour of housebuilding firms of differing sizes. The fifth section asked about the flexibility of and likely changes to output levels in response to different stimuli. The factors that are perceived to limit the ability to adjust production levels are likely to reveal interesting differences between firms both in terms of the enforced and discretionary responses to changing market conditions. The last section contains two more general questions, which it was considered might reveal any other significant factors not captured in previous questions. One of these specifically related to the differences in relative output noted between the North West and East of England in chapter four.

### 3.     Questionnaire responses

**The respondents –** The relative size of the respondents to the questionnaire ranged from 60 to 13,500 completions per annum, and geographically they varied from those trading in a single English region to national coverage. Table 5.1 compares the number of National House-Builders Council (NHBC) registered firms with the sample frame and sample using the NHBC categories. The first two of the NHBC categories are not represented in the sample frame and the first three in the sample. However, although these categories represent the vast majority of registered builders, two-thirds produce no output (0 units category) and the other two categories (1-10 and 11-30 units) have suffered a declining market share in recent decades (Gillen, 1994a p20; Gillen and Golland, 2004 p81). In the 1990s the combined output of house-building firms in the 501-2,000 and 2,000+ categories exceeded 50% of the total industry output (Gillen and Golland, 2004 p88), with the top ten house-builders responsible for 44% of the industry's output in 2000 (Wellings, 2006 p93). This is

strong evidence to support a hypothesis that the new house-building industry in England is oligopolistic (Ball, 1996 p31).

**Table 5.1: Comparison of population, sample frame and sample**

|  | NHBC registered | Sample frame | Sample |
| --- | --- | --- | --- |
| 0 units | 10517 | 0 | 0 |
| 1-10 units | 4313 | 0 | 0 |
| 11-30 units | 559 | 1 | 0 |
| 31-100 units | 205 | 3 | 3 |
| 101-500 units | 101 | 33 | 15 |
| 501-2,000 units | 22 | 25 | 3 |
| 2,000+ units | 15 | 15 | 5 |

Over two-thirds of the respondents were either public limited companies (PLCs) or subsidiaries of PLCs; with the remaining respondents being private limited companies. Two-thirds of the respondents were 'pure' house-builders, i.e. they are only involved in the house-building industry (Gillen, 1994a p3); the remaining third were directly or indirectly through subsidiary or parent companies active in the commercial construction sector. Around a fifth of them were involved in contract building to some extent, and three were involved or operated solely in specialist markets such as executive or retirement homes.

The sample, in comparison to the sample frame, shows a bias in favour of the 31-100 and 101-500 categories at the expense of the 501-2,000 category. To match the distribution in the sample frame would require 1, 11 and 8 responses in the respective categories. Both the sample and sample frame show a strong bias towards the larger firms in terms of the numbers of firms in each category. However, with reference to total industry output the sample shows a greater degree of representation with 80-85% of the total output from the four 31-units plus categories (Gillen and Golland, 2004 p88). The preceding analysis aside, it is also important to think of representativeness not just in terms of the sample profile approximating the population profile, although this is of importance in the statistical analysis of qualitative data, but, particularly in the case of qualitative data, it is also important that the responses are representative of the 'norm', i.e. are the responses from the 501-2000 category representative of this size of firm even though the sample size is small? The issue of representativeness of responses will be examined further in Chapter Six.

An analysis of the geographical coverage of the respondents (shown in Table 5.2) shows a bias towards the South East, with sixteen of the firms trading in the region. East Anglia and the North East had the lowest number of respondents trading in the region at five and four respectively. There were between seven and ten respondents active within the remaining six regions. This distribution shows a strong correlation with the distribution of new dwelling sales over the period of investigation, 1995-2002.

**Table 5.2: Geographical distribution of respondents**

|  | Number of firms |
|---|---|
| East Anglia | 5 |
| East Midlands | 10 |
| London | 7 |
| North East | 4 |
| North West | 7 |
| South East | 16 |
| South West | 8 |
| West Midlands | 8 |
| Yorks. & Humber | 8 |

Of the ten respondents that were active in just one region the number of annual completions ranged between 100 and 370 apart from one at 800. Four of the firms traded in the South East, and one in each of the remaining regions except East Anglia and London. Annual completions for the respondent active in two regions ranged between 60 and 400. Four of the eight firms traded in London and the South East, with the other four active in neighbouring regions; the South East and South West, the East and West Midlands, East Anglia and the East Midlands, and the North East and Yorkshire & Humber. The geographical coverage was similar for those active in three regions; one covering the North East, Yorkshire & Humber and the East Midlands and the other South east, South West and East Anglia. The output of these firms was 630 and 300 respectively.

The remaining respondents show a shift in output levels and geographical coverage. The two firms active in five and six regions had outputs of 4,000 and 1,400 completions per annum respectively. Neither was active in the North East or East Anglia. The firms trading in seven regions had output levels ranging from 2,500 to 3,600 completions per annum. Again, none of the respondents were active in the North East; two were not active in London and the other in East Anglia. There was

one firm that was active in all nine English regions, which had an output of 13,500 completions per annum. This would make it a major house-builder in all regions.

Table 5.3 shows the geographical size of the sample firms. The sample has a predominance of firms that operate in just one or two English regions, with only four of the firms having or approaching full national coverage. Again the sample distribution reflects the pyramidal industry structure noted in chapter four with a small number of large firms at the top and a large number of smaller firms at the bottom. These smaller firms, however, may in some cases still produce significant levels of output and have large land holdings within their local areas. It may also be these firms that are in the main responsible for the changes in total regional output if they are quicker to respond to changes in demand or price.

**Table 5.3 Geographical size of respondent firms**

| Number of English regions in which the firm is active | Number of firms |
|:---:|:---:|
| 1 | 13 |
| 2 | 7 |
| 3 | 1 |
| 5 | 1 |
| 6 | 1 |
| 7 | 3 |
| 9 | 1 |

The average regional output per annum of firms trading in a single region (total firm output by definition) was 248; for firms trading in more than one region the average annual number of completions was 359 per region.

**Goals of the firm** – The questionnaire asked respondents to rank various long and short-term goals in terms of their importance to the firm. As a stronger focus on the long or short run was likely to have a significant effect on the behaviour of firms the responses to these questions are important. Firms with a longer-term focus are likely to behave differently to those with a short-term focus when faced by phenomena that are, or at least perceived to be, short-run. Table 5.4 shows the importance attached to each of the goals; the shaded cells show the responses that have the highest percentage for each of the goals. In all except the case of *sales revenue* the long-run goals were, on average, rated 'more important' than the short-run.

**Table 5.4 Relative importance of 'goals of the firm'**

| Importance of | % Response | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Growth of the firm | 42.3 (46.2) | 38.5 (34.6) | 15.4 | 3.8 | 0.0 |
| Long-run market share | 3.8 (7.7) | 11.5 (7.7) | 30.8 | 26.9 | 26.9 |
| Long-run profit | 74.1 (81.5) | 14.8 (18.5) | 0.0 | 3.7 (0.0) | 7.4 (0.0) |
| Long-run sales revenue | 14.8 (18.5) | 25.9 (33.3) | 37.0 | 11.1 (7.4) | 11.1 (3.7) |
| Long-run volume | 11.5 (15.4) | 15.4 (11.5) | 46.2 | 11.5 (15.4) | 15.4 (11.5) |
| Short-run market share | 0.0 (3.7) | 16.0 (14.8) | 20.0 (18.5) | 24.0 (18.5) | 40.0 (44.4) |
| Short-run profit | 36.0 (33.3) | 40.0 (37.0) | 12.0 (11.1) | 8.0 (11.1) | 4.0 (7.4) |
| Short-run sales revenue | 12.0 (11.1) | 28.0 (22.2) | 28.0 (25.9) | 20.0 (25.9) | 12.0 (14.8) |
| Short-run volume | 8.0 (7.4) | 24.0 (18.5) | 20.0 (18.5) | 32.0 (33.3) | 16.0 (22.2) |
| Where 1 = 'very important' and 5 = 'unimportant' | | | | | |

Three of the returned questionnaires had responses for long and short-run profit that did not match expectations. In these three cases both were rated 4 or 5 (5 being unimportant). It was considered very unlikely that this was the intended response of the respondent and that some confusion had arisen in completing the questionnaire. The responses for these three questionnaires were transposed and the amended figures are shown in brackets in Table 5.4.

Interestingly it appears that *growth of the firm* and *long-run profit* were, on average, rated more important than *short-run profit*. These findings will be investigated in more detail in later chapters, as it is likely to have significant implications for the understanding of house-builder behaviour.

**Target setting and strategic control** – The geographical level of target setting in budgets and the degree to which the decisions on targets are devolved will offer useful insights into the variations in regional output. In particular this information should assist in providing an explanation of the difference in relative outputs between the North West and the East of England. This section of the questionnaire asked questions on this. Table 5.5 shows the response to the question "*Are separate annual production targets set for each region in which the company operates?*" Of the nine firms that responded 'no' five operate in just one region making the responses equivalently 'yes'. The remaining four are active in just two regions and have average outputs of 350 completions per year or less and therefore are likely to be able to administer the firm with smaller management structures.

**Table 5.5 Separate targets for each region?**

|       | % Response |
|-------|------------|
| Yes   | 66.7       |
| No    | 33.3       |

Table 5.6 shows the response to the question "*Do regional offices submit targets or are they set nationally?*" the answers to these questions will give an indication of the geographical structures of the firms and whether output decisions are generally made *top-down* or *bottom-up*.

**Table 5.6 Targets set regionally or nationally?**

|                    | % Response |
|--------------------|------------|
| Regional submitted | 66.7       |
| Nationally set     | 33.3       |

Only four of the fourteen firms that operate in more than one region do not have separate targets for each region, and only two of the firms set targets at a national level. All of these firms operate in only two regions. Given this it is reasonable to suggest that firms do not adhere strictly to the regional administrative boundaries used by government but do limit their management structures to geographical areas of a similar size (Gillen, 1997 p11-15). The degree of strategic control here appears to be more consistent (by size of firm) than that observed by Hooper and Nicol (2000) in their survey of house builders.

The results from both of these questions support the hypothesis of Ball (2003) that the benefits of size (economies of scale) over 'management diseconomies of scale' reach its limit at the regional level, i.e. administratively this is the limit to management efficiency. An alternative hypothesis is that this is the area that developers see as a Housing Market Area (HMA) and therefore structure the firm accordingly.

The respondents were also asked, "*Are production targets set for profit, units or both*". The replies to this question will also help to explain output decisions in response to changes in demand and price. We can see from table 5.7 that the majority of the respondents set budget targets for both profit and units. The four firms that target for profit only produce 250 units per annum or less. One possible explanation of why smaller firms target profit only may be that they are limited in their ability to secure sufficient land (this may be in terms of physical availability and the financial

demands in places on the firm), this may serve, to some extent, to focus the planning on financial areas and therefore seek to 'maximise' the profit generated from limited output.

**Table 5.7 Target setting for profit or units**

|        | % Response |
|--------|------------|
| Profit | 15.4       |
| Units  | 3.8        |
| Both   | 80.8       |

Table 5.8 shows the response to the question "*Are production targets informed by a longer-term strategic plan?*" Again this question was aimed at understanding the decision making process and whether firms tend to have a long or short-term focus. We can see that most firms have a longer-term strategic plan that guides the target setting process and therefore output decisions. Again this emphasises the importance of long-run over short-run seen earlier, as well as giving the impression that firms expect to be 'in-business' in the future. Again this seems to contradict the assumption of the hit-and-run, price-taking, profit-maximising firm of orthodox economic theory. The three firms that do not have a long-term strategic plan produce 250 units per annum or less; this may be as a result of the lack of surplus management capacity and being too busy *getting on with it* to be able to develop more formal long-term plans.

**Table 5.8 Long-term strategic plan?**

|     | % Response |
|-----|------------|
| Yes | 88.9       |
| No  | 11.1       |

The responses to the question "*Are production targets informed by formal market research?*" show that just over half the sample undertakes some form of formal market research. When the sample is sub-divided into firms that have an average of less than 350 completions per annum and those that average 350 or more we see a different pattern (Table 5.9). Two-thirds or firms producing less than 350 units per annum do not undertake formal market research, whereas over 80% of firms producing 350 or more do. This may be related to the responses to the previous question where there appears to be a shorter-term focus with output influenced more by current demand.

**Table 5.9 Undertake market research?**

| | % Response | |
|---|---|---|
| | 350 or more | Less than 350 |
| Yes | 83.3 | 33.3 |
| No | 16.7 | 66.7 |

The next two questions were open. They asked which long and short-term variables firms considered when setting production targets. The responses have been grouped into two groups; those with an average of 350 or more annual completions and those with an average of less than 350. The groups for convenience are referred to as:

Group 1 – an average of 350 or more completions per annum;

Group 2 – an average of less than 350 completions per annum.

In response to the question "*What long-term variables are considered when setting production targets*?" all of the respondents in group 1 and almost two-thirds of those in group 2, identified land-supply/availability as a key issue. It is difficult to separate the issues of land supply and planning restrictions. However, as many respondents identify both land supply/availability and planning separately, it is assumed that when respondents say land supply/availability they are not referring to planning issues, and vice versa, i.e. they are seen as separate issues by developers.

On planning issues only one of group 1 specifically identified it as a factor whereas almost half of group 2 did. 'Planning' can be referring to any of three effects; firstly planning may limit the total land available to developers, secondly it may affect the speed at which a site is taken through from the initial purchase of the land to the sale of the completed dwellings, and thirdly it may influence the density or mix of dwellings (the number and type of dwellings built on a site). In all cases this has the potential to increase costs and uncertainty for developers. The first effect has been the subject of debate since the introduction of development controls (Town and Country Planning Act: 1947). It could be argued, however, that the planning 'system' releases sufficient land to meet demographic needs, but individual developers would like a larger proportion of the available land; i.e. the cake is big enough but some/most developers would like a larger slice.

The second effect, a delay in the development process, is monitored by national government. All local planning authorities' performance in processing planning applications is monitored against two benchmarks, 8 weeks and 13 weeks. Delays in the development process impose an additional cost on developers as it increases the time between the initial investment and the return on the investment. It also increases the uncertainty faced by house-builders as the additional time taken for development increases the possibility that the level of demand will have fallen. This may leave unsold stock on which additional financial penalties may be incurred. House-builders will be aware of these potential delays and additional cost and therefore are likely to adapt their strategies to minimise the impact. The performance of planning authorities against these targets will be examined in chapter seven as any explanation of housing output will have to either discount or include the effects of planning delays.

All bar one of the group 1 respondents and over two-thirds of group 2 identified demand-side factors as important in setting production targets. Demand factors are a potentially large group of variables. It may include economic outlook, interest rates, current demand/sales and recent demographic trends in the market, in addition developers future expectations of these. The correspondence of these factors with changes in output will again be examined in chapter seven.

Just over a third of both groups named financial issues as important. Financial issues are, again, a potentially large group of variables, including cash flow, profit targets, shareholder behaviour and access to sources of additional finance. The potential impact of these on output will be considered mainly in chapter nine rather than chapter seven, as most are difficult to quantify or data is not published.

A third of group 1 respondents named labour supply as an important factor; it was not cited by any of the other group.

The responses to the second open question "*What short-term variables are considered when setting production targets*?" generally identified the same variables as those for the long-term but in slightly differing proportions. One interesting change was for group 1 where the importance of planning issues diminished but

labour supply, not seen as a long-term issue, became more important. Demand-side factors were named by at least half of both groups with just fewer than half citing land supply/availability.

Table 5.10 shows the response to the question "*Do variables under consideration vary between regions?*" Most of the firms producing less than 350 units per annum did not answer this question, which is unsurprising given that the indication is that the majority trade in only one region. The split between yes/no for those that did respond was 50/50 for both groups.

**Table 5.10 Regional variations in variables**

|  | % Response |
| --- | --- |
| Yes | 50% |
| No | 50% |

A point of clarification may be needed here; is it that the variables vary between regions or that the value of the variables varies between regions? This will be considered in further detail in chapters seven and eight when the correlation of various secondary data with housing output will be explored.

A further 'open' question was asked at the end of this section to allow for any factors that were considered important by developers but had not been directly addressed by the other questions in this section. There were few consistencies in the responses, which might be expected given the general nature of the question, but there are several points worthy of note. One of the two responses from group 1 "*Work in progress must be kept at a level which satisfies demand but allows a proper return on capital employed*" demonstrates the often-conflicting goals of the firms. This is further supported by a response from one of the group 2 respondents who states, "*Targets are driven by … overall company profitability target short term*", which may conflict with other goals of the firm. This issue will again be developed in later chapters.

There appeared to be some conflict in the responses from group 2, with two of the responses indicating the need for flexibility in production, whilst two other suggesting a lack of flexibility in output. The first two are marginally larger than the second two; potentially this may have some bearing on the differences. Again the effect of firm size on behaviour will be considered in more detail later.

**Land holding** – This section explores differences in land holding practices. As suggested in the introduction some important differences were expected. It was expected that larger firms would hold, relative to their output, greater quantities both in terms of long and short-term holdings (Hooper, 1994 p10). This is likely to significantly contribute to differences in the behaviour of housebuilding firms of differing sizes.

In response to the question "*What proportion of your production takes place on land purchased with a view to starting construction as soon as possible (rather than land drawn from your land bank)?*" of the total sample almost two thirds answered "*more than 75%*" and just under a third answering "*less than 50%*". However, when the responses are sub-divided between those having 350 or more average annual completions and those with less than 350 there appears to be a clear difference in behaviour. Table 5.11 shows the responses from the sub-groups. We can see that there is a much greater tendency for smaller firms, i.e. those with less than 350 completions per annum, to develop land as soon as possible after purchase.

**Table 5.11 Development land turnover**

|  | Average number of regional completions pa | |
| --- | --- | --- |
|  | 350 or more | Less than 350 |
| <50% | 50.0 | 13.3 |
| 50-75% | 16.7 | 0.0 |
| >75% | 33.3 | 86.7 |

The next question asked about the size of the firms land holding as a ratio of its annual output, i.e. 'relative' land holdings. As with the previous question the more interesting results are generated when the sample is sub-divided. The responses were again divided by firm size with the split at 350 units per annum; the breakdown is shown in table 5.12.

**Table 5.12 Size of land bank compared to annual output**

|  | Average number of regional completions pa | |
| --- | --- | --- |
| Size of land bank | 350 or more | Less than 350 |
| 1-2 years | 16.7% | 60% |
| 2-3 years | 16.7% | 26.7% |
| 3-4 years | 66.7% | 6.7% |
| Over 4 years | 0% | 6.7% |

We can see that there is a significant difference in the land holding practices of the two groups. It is unsurprising in the light of the response to the previous question to find that the smaller firms on average have much smaller land banks, almost two-thirds having less than two years supply. All the larger firms have over two years supply and the majority have between 3 and 4 years supply of land.

The questionnaire also asked what proportion of the firm's land bank had current planning permission (flexibility of production). Table 5.13 shows the responses again split into the two groups. Whilst there seems to be an even spread of responses from the '*Less than 350*' group, over 80% of the larger firms indicated that at least 60% of their current land bank had planning permission. This appears to give larger firms significant advantage in production flexibility when considered in conjunction with the size of their land holding. It was not established, unfortunately, what proportions had outline as against full planning permission. This may lead to some weakness in the final analysis.

**Table 5.13 Proportion of land holding with planning permission**

|  | Average number of completions pa | |
|---|---|---|
|  | 350 or more | Less than 350 |
| <40% | 9.1% | 26.7% |
| 40% - 60% | 9.1% | 20% |
| 60% - 80% | 54.4% | 26.7% |
| >80% | 27.3% | 26.7% |

An additional source of land holding and therefore flexibility in production comes from the use of *options* or *conditional contracts*[i] (Hooper, 1994 p10-12). The next question, "*What proportion is held on 'options' or 'conditional contracts'?*" sought to establish the extent to which these are used by house-builders. The responses are summarised in table 5.14. They are not split into the two groups as before as there was little difference between the responses of the groups; if anything it would appear the larger firms hold slightly less land using these arrangements.

**Table 5.14 Use of Options and Conditional Contracts**

|  | % Response |
|---|---|
| <25% | 61.5 |
| 25% - 50% | 23.1 |
| 50% - 70% | 7.7 |
| >70% | 7.7 |

The final question in this section asked, "*What types of site, if any does your company prefer to develop?*" with the following options:

- Small brown-field (10 units or less),
- Small green-field (10 units or less),
- Large brown-field,
- Large green-field.

Table 5.15 shows the responses, the columns and rows will not sum to 100% as often more than one option was selected. When the responses are split there appears to be a slightly higher preference for large green and brown field site amongst the larger firms, although this difference is not as evident as with some of the other responses.

**Table 5.15 Site type preferences**

|  | % Response | |
| --- | --- | --- |
|  | Greenfield | Brownfield |
| Small | 33.3 | 29.6 |
| Large | 59.3 | 59.3 |

**Production flexibility** – This section of the questionnaire asked a number of questions about the firm's decision-making processes and likely responses to different stimuli and its likely effect on the ability of firms to alter production rates. It was expected that the factors that are perceived to limit the ability to adjust production levels are likely to reveal interesting differences between firms both in terms of the enforced and discretionary responses to changing market conditions.

The first question asked whether the decision to adjust production levels is taken at national or regional level. It was assumed that this was at 'board' level in either case. It is easier to make sense of the responses if they are separated into firms that operate in a single English region and those that operate in multiple regions. Tables 5.16 and 5.17 below show the responses on this basis. Table 5.16 shows the responses from the 'single region' firms; the split between regional and national level decision-making is almost 50/50.

**Table 5.16 Level of decision making for single region firms**

|  | No. of firms | % Response |
| --- | --- | --- |
| National | 6 | 42.9 |
| Regional | 7 | 50.0 |
| Non-response | 1 | 7.1 |

As 'regional' for a single-region firm is also 'national' then for all firms in this group it can be assumed that the national/regional distinction probably does not apply.

It is also reasonable to take the single non-response as an indication of the redundancy of the question at this level. It would seem reasonable to argue, therefore, that all decisions for these firms are taken at a regional or sub-regional level.

For the majority of firms that operate in more than one English region the decision to adjust production levels is taken at regional level, with just three firms indicating that their decisions were taken at national level. Again all three firms in question operate in just two regions and have an average output of four hundred or less completions per annum. It is reasonable to suggest that although the firms operate in two regions their geographic area of operation is analogous to a single region and they are therefore able to function successfully with a smaller management structure. The single non-response also operates in just two regions and averages less than 250 annual completions.

**Table 5.17 Level of decision making for multi region firms**

|  | No. of firms | % Response |
|---|---|---|
| National | 2 | 15.4 |
| Regional | 10 | 76.9 |
| Non-response | 1 | 7.7 |

Two further questions were asked to establish the frequency of production reviews. Almost 90% of respondents indicated that scheduled reviews of output levels occurred monthly (Table 5.18). The question did not give the option for a greater frequency than monthly; it seemed at the time of asking to be the most appropriate minimum interval to specify. With hindsight it may have been useful to offer a shorter alternative, however, combining the responses with the available secondary data may have then been problematic as this is available at best monthly, but more frequently quarterly.

**Table 5.18 Frequency of scheduled production reviews**

|  | No. of firms | % Response |
|---|---|---|
| Monthly | 24 | 88.9 |
| Quarterly | 1 | 3.7 |
| Half yearly | 2 | 7.4 |
| Annually | 0 | 0.0 |

The second question asked how often output was reviewed in response to a contingency rather than at a scheduled review. Table 5.19 shows the responses to this question divided into two sub-groups: firms that have an average of less than 350 annual completions and those with 350 or more. There appears to be a slightly greater tendency for production reviews in these circumstances to occur more often in the group of larger firms. This would fit with earlier observations where it would appear larger firms are more able than smaller firms to adjust production levels.

**Table 5.19 Frequency of unscheduled production reviews**

|  | 350 or more completions pa | Less than 350 completions pa |
|---|---|---|
|  | % Response | % Response |
| Very often | 16.7 | 20.0 |
| Often | 58.3 | 26.7 |
| Occasionally | 25.0 | 46.7 |
| Rarely | 0.0 | 6.7 |

The respondents were then asked to indicate the factors that affect their ability to change the rate of starts in response to a change in demand, i.e. supply constraints. As before the respondents have been sub-divided into two groups, firms with an average of 350 or more completions per annum and firms with an average of less than 350 completions per annum.

**Figure 5.1a Change in starts – group 1 responses**
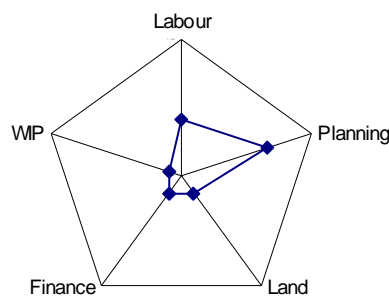


The web diagrams in Figures 5.1a & b show the relative frequencies of the five main factors indicated by the respondents and therefore, arguably, the comparative importance of each factor. For group 1 (Figure 5.1a) it would appear that planning issues, both delays and quantity, are the most important followed by labour supply,

skilled and unskilled. For group 2 (Figure 5.1b) the relative importance of these is reversed, labour supply now being indicated as the most important factor. After planning and labour the three most commonly identified factors were the availability of land, financial constraints and work-in-progress (WIP). Of these three factors financial constraints appear to be a more significant factor for group 2, again supporting earlier observations.

Other factors which are also mentioned but infrequently are competition, resource and materials availability, confidence in sales forecasts and sales and profits relative to targets. Responses such as "*Principally labour supply but may also be planning restraints due to infrastructure constraints*", "*Local labour skills availability; planning issues; Competition*" and "*Planning consents; having land in place*" are typical. The responses were used to guide the choice of secondary data collected in the next stage of the research.

**Figure 5.1b Change in starts – group 2 responses**
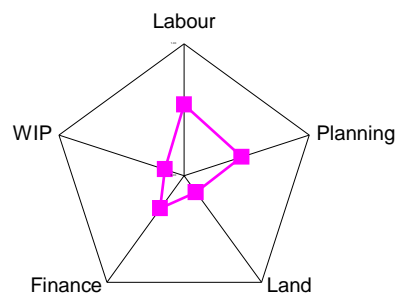


The questionnaire then asked, "On average, how quickly are you able to change your rate of starts in response to a change in demand?" The responses are summarised in Table 5.20. Just over two thirds of firms indicated that they would be able to respond to demand changes in less than three months, with a further quarter within three to six months. Overall most firms seem to be able to change their rate of starts within a reasonable timeframe, although the speed may vary depending on the direction of change. The responses were not split into the two groups, as to casual observation there appeared to be little difference between them.

**Table 5.20 Speed of response to demand changes**

|  | % Response |
|---|---|
| < 3 months | 65.4 |
| 3 – 6 months | 26.9 |
| 6 – 9 months | 7.7 |
| > 12 months | 0.0 |

The respondents were then asked to indicate the factors that affect their ability to change the rate of completions in response to a change in demand. As before the responses were used to guide the choice of secondary data collected in the next stage of the research. Again the two groupings were utilised.

The web diagrams in Figures 5.2a and 5.2b show the relative frequencies of the five main factors indicated by the respondents. The set of factors indicated where the same as for 'starts', but have changed in relative importance. Labour supply is now the most important factor to both groups. For group 1 planning is the second most important factor but for group 2 work-in-progress (WIP) followed by land supply and financial constraints are now relatively more important. This seems to be reflecting the proportionately smaller land holdings identified in earlier questions. These three factors appear to be of a much more limited importance to larger firms perhaps indicating, as well as proportionately larger land holdings, easier access to additional finance.

**Figure 5.2a Change in completions – group 1 responses**
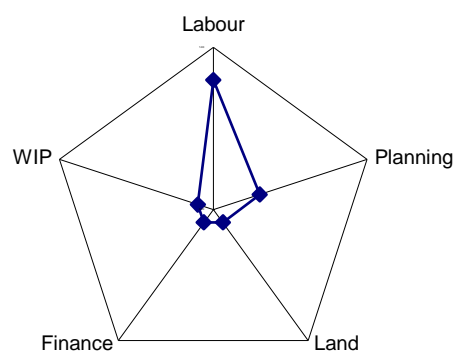


Again comments such as: "*supply of labour. The demands on finishing trades can be critical in popular locations*", "*Production capacity; shortage of skilled sub-contractors*", "*Labour and materials availability; strength/certainty of demand*

*change; return on capital*", "*Cash constraints; work in progress*" and "*Production programme; labour/planning; very limited on small sites*" are typical of the responses received.

**Figure 5.2b Change in completions – group 2 responses**
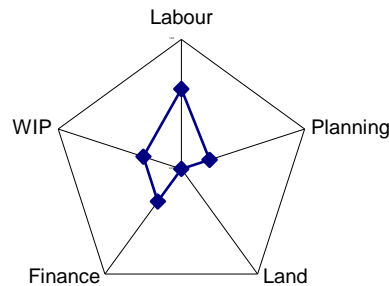


**Output and price sensitivity to market changes** – The next part of the questionnaire dealt with developer's responses to increases in price and market activity. They were asked to indicate whether they were *likely* or *unlikely* to change price or production levels in response to increases in new or second-hand prices or market activity; the aggregated responses are shown in Table 5.21.

**Table 5.21 Responses to changes in price and demand**

|  | % Response 'likely' to | |
|---|---|---|
| In response to: | change price | change production |
| new house market activity increases | 96.2 | 77.8 |
| new house prices increase | 96.2 | 69.2 |
| second hand market activity increases | 68.0 | 38.5 |
| second hand house prices increase | 76.0 | 34.6 |

From the responses it would appear that house builders generally pay less attention to the second hand market than the new market when making pricing and production decisions. The responses also seem to indicate that house builders are more likely to review prices than production levels in reaction to increases in either market activity or price (Ball, 1996 p33). This suggests that either the firm's strategic plans take precedence over short-term changes in demand or alternatively that there is some short-run constraint on production changes. The results also imply that house builders are more likely to respond to increased activity in the new market than price.

Two further open questions were asked at the end of the questionnaire and were aimed again at eliciting the main factors that influence output. Firstly responses were invited on the most likely factors to have influenced the difference in completions between two regions, East Anglia and the North West, over a ten-year period. The second of them asked for the main firm specific factors influencing output. It was hoped that by asking for this information at the general and specific level it would elicit data potentially missed by the previous questions.

**Figure 5.3 Split of supply and demand factors**
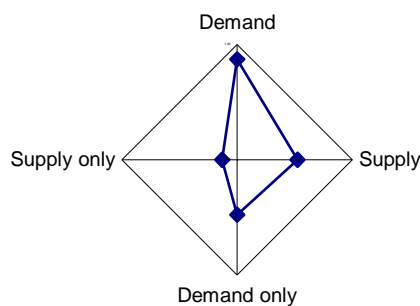


The first significant observation to the first question: "*During the period 1988 – 1998 the average number of dwellings completed per 1,000 population in East Anglia was 3.9, but over the same period in the North-West the figure was only 2.4. What factors do you think are most likely to have influenced the difference in completions between the two regions?*" is that there appears to be a predominance of *demand-side* factors in the responses. Figure 5.3 illustrates this. Almost all respondents indicated at least one demand factor with nearly half indicating only demand factors. The factors suggested included *sales demand*, *employment levels and type*, *population changes* and *proximity to London and the South East*. For the supply-side all except one response indicated planning issues and land availability as the most likely contributory factors.

The second question in this section asked: "*What are the main factors that influence how many dwellings your company builds each year?*" The respondents indicated five main factors: land supply, planning issues, labour and skills availability,

financial constraints and profit targets. The relative importance of each of these factors to groups 1 and 2 are shown in Figures 5.4a and 5.4b respectively.

**Figure 5.4a Production influences – group 1 responses**
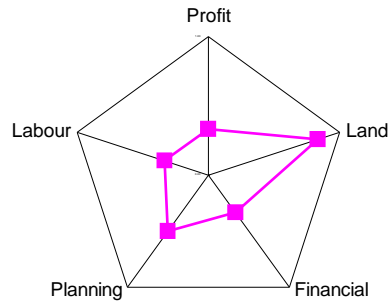


We can see that for *group 1* land supply/availability is the most significant factor with planning issues second. This is reversed for firms in group 2 where planning is considered to be the most critical with land supply second. *Profit targets* is a factor that was not identified in earlier questions with comments such as "*Utilisation of land bank to achieve targeted ROCE*", "*Requirement to grow pre-tax profits progressively*" and "*Investor strategy and profit targets*", typifying the responses that indicated profit targets were a significant influence on output.

**Figure 5.4b Production influences – group 2 responses**
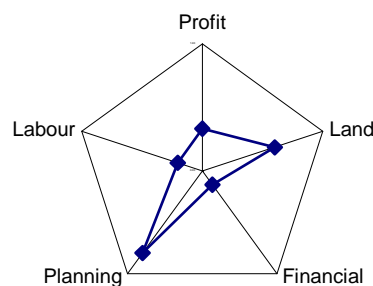


One final question was asked as a *catchall* at the end of the questionnaire: "*Have you any other comments regarding the issues raised in this questionnaire?*" As the

responses to this, which are fully annotated in Appendix One, are wide-ranging and often general in nature they will be presented in later chapters where they add weight to other evidence being presented.

## 4.    Conclusions

The questionnaire has gathered a significant amount of data on the operation of house-builders in England. It examined issues such as the goals of the firm, target setting and strategic control, land holding practices, production flexibility and output and price sensitivity to market changes. The results of formal tests on the findings of the questionnaire are presented in the next chapter together with the developing hypotheses. The main observations from the questionnaire responses are then:

- The sample distribution of firms is considered to be sufficiently similar to the sample frame to be representative. With around 50% of total output produced by the top 10% of firms there is strong evidence to support a hypothesis that the house-building industry in England is oligopolistic.

- On average, long-run goals were rated 'more important' than short-run and importantly *growth of the firm* and *long-run profit* were rated more important than *short-run profit*. This long-run focus is further supported by responses elsewhere in the questionnaire.

- The responses to questions on target setting and decision-making hierarchies support the hypothesis of Ball (2003) that the benefits of size over management diseconomies of scale reach its limit at the regional level.

- Most large firms identify land-supply/availability as a long-term key issue, whereas smaller firms were more likely to identify planning. The majority of firms also identified 'demand' factors as important in setting production targets.

- There is a much higher tendency for smaller firms to develop land as soon as possible after purchase. It is no surprise then to find that they have relatively smaller land banks, almost two-thirds having less than two years supply.

- All the larger firms have over two years supply and the majority have between 3 and 4 years supply; with a greater proportion of their land banks

having current planning permission; over three-quarters indicating that 60% or more of their current holding had planning permission.

- Most firms indicated they review production rates at least monthly with just over two thirds of firms indicated that they would be able to respond to demand changes in less than three months, with a further quarter within three to six months.

- Labour supply is the most important factor for all firms in adjusting the rate of completions. For larger firms planning is the second most important factor but for smaller firms 'work in progress' followed by land supply and financial constraints are relatively more important.

- It would appear that house builders generally pay less attention to the second hand market than the new market when making pricing and production decisions, are more likely to review prices than production levels in reaction to increases in either market activity or price and are also more likely to respond to increased activity in the new market than price.

- To the question on output differences between the North West and East Anglia there appears to be a predominance of *demand-side* factors in the responses.

- But for the question of the individual firm's output it was mainly supply-side factors that were indicated. For larger firms land supply/availability is the most significant factor with planning issues second. This is reversed for smaller firms where planning is considered to be the most critical with land supply second.

The next chapter takes the observations from the questionnaire responses and after formally testing them begins to develop hypotheses that are used to guide the choice of secondary data used in chapter seven.

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[i] Option agreements allow housebuilders to exercise an option to purchase at any point during a specified period. Whilst the vendor is committed to sell the purchaser is not committed to purchase; unlike conditional contracts where there the purchaser agrees to purchase is certain conditions are met, normally the granting of planning permission (Hooper, 1994 p 11).

**Chapter Six**

**Interpretation and Analysis of Questionnaire Responses**

**1.      Introduction**

This chapter presents the results of statistical tests on the data gathered from the questionnaires and further interpretation of the findings. The questionnaire was designed to identify the important behavioural and institutional aspects of production decisions in private sector housebuilding. This chapter seeks to *add weight* to the observations made in the previous chapter using inferential statistics. The reading of the questionnaire responses in the previous chapter identified a number of interesting characteristics that it was expected should provide the basis for a deeper explanation of house-builder behaviour and private sector housing output in England.

The next section follows the layout of the questionnaire in the same way as the last and records the results of statistical tests undertaken, where appropriate, on the questionnaire responses. The six sections are: i) control variables, ii) goals of the firm, iii) target setting and strategic control, iv) land holding, v) production flexibility, vi) output and price sensitivity. Section three further develops hypotheses around the observations from the last chapter and the statistical tests from this. The final section sets out an informal *model* of private house-builder behaviour that is investigated further in chapters seven and eight using secondary data.

**2.      Questionnaire analysis**

**Industry concentration** – Table 5.1 compared the distribution of the respondents to the questionnaire, i.e. the sample, and the sample frame. It was argued that the distributions were sufficiently similar to conclude that the sample was representative of the sample frame. A *Spearman Rho*[1] correlation was run to support this; the results are shown in table 6.1.

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[1] This is a nonparametric version of the Pearson correlation coefficient, which is based on ranking of the data rather than absolute values. The sign of the coefficient indicates the direction of the relationship, and its absolute value indicates the strength, with larger absolute values indicating stronger relationships.

**Table 6.1 Correlation between sampling frame and sample**

|  | Correlation coefficient | p |
|---|---|---|
| Spearman Rho | 0.637 | 0.026 |

The correlation was significant at the 5% level supporting the argument that the sample is representative of the sample frame and therefore the population as a whole.

**Goals of the firm** – Respondents were asked to rank various long and short-term goals in terms of their importance to the firm. Table 5.4 in chapter five showed the importance attached to each of the goals. In all except the case of *sales revenue* the responses indicated that on average long-run goals were 'more important' than short-run and importantly that *long-run profit* is more important to firms than *short-run profit*. Both these observations were tested using the *Wilcoxon signed ranks* (*Wsr*) test[2]. The test on long-run goals vs. short-run goals was significant at the 1% level and the results are shown in table 6.2.

**Table 6.2 Results of test on long-run vs. short-run goals**

| Importance of | Z | P |
|---|---|---|
| long-run goals (inc. growth of the firm) vs. short-run goals | -3.367 | 0.001 |
| Based on negative ranks | | |

Both long-run and short-run profit were also tested against *growth of the firm* as this appeared to be at least as important as short-run profit. The tests on long-run profit versus short-run profit and long-run profit versus growth of the firm were both significant at the 1% level. The test on short-run profit versus growth of the firm was insignificant. All the results are shown in table 6.3 and confirm that:

a) *Long-run profit* is, on average, rated more important than *short-run profit* and *growth of the firm*, and

b) That *growth of the firm* is, on average, at least as important as *short-run profit*.

**Table 6.3 Results of tests on long-run profit, short-run profit and growth of the firm**

| Importance of | Z | p |
|---|---|---|
| Long-run profit versus Growth of the firm | -2.683[a] | 0.007 |
| Short-run profit versus Growth of the firm | -1.341[b] | 0.180 |
| Short-run profit versus Long-run profit | -3.335[b] | 0.001 |
| a - Based on positive ranks b - Based on negative ranks | | |

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[2] A nonparametric procedure used with two related variables to test the hypothesis that the two variables have the same distribution. It makes no assumptions about the shapes of the distributions of the two variables and takes into account information about the magnitude of differences within pairs.

**Target setting and strategic control** – Decisions on production targets will offer useful insights into the variations in regional output, and in particular the difference in relative outputs between the North West and East of England.

No tests were performed on the responses to "*Are separate annual production targets set for each region in which the company operates?*" and "*Do regional offices submit targets or are they set nationally?*" as almost all the responses fell into two categories: a) multi-regional firms, who had displayed characteristics of regional independence, and b) single-regional firms, to whom the questions were irrelevant. Also no tests were performed on the responses to "*Are production targets set for: Profit, Units or Both*" and "*Are production targets informed by a longer-term strategic plan?*" as over eighty per cent of all respondents to both questions specified 'Both' or 'Yes' respectively.

Responses to the question "*Are production targets informed by formal market research?*" shown in table 5.9 Chapter Five indicate that two-thirds of firms producing less than 350 units per annum do not undertake formal market research, whereas over 80% of firms producing 350 or more do. The observation was confirmed with the *Mann-Whitney-U* (*MWU*)[3] test; the result was significant at the 5% level and is shown in table 6.4. This confirms that, on average, the two groups behave differently in using market research to guide production targets.

| Table 6.4 Results of test on the use of market research | | |
|---|---|---|
| | Z | p |
| '350 units pa or more' vs. 'less than 350 units pa' | -2.550 | 0.011 |

The responses to "*Do variables under consideration vary between regions?*" were split 50/50 regardless of firm size (table 5.10). However, initial evidence from the answers to the open questions indicate that generally the same group of variables are cited, land supply, planning, labour, finance and work-in-progress. This would suggest that the factor affecting production do not vary greatly between regions; this is not to say that the values of the variables or the sensitivity to them do not vary

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[3] Tests whether two independent samples are from the same population.

between regions. The responses to this question and whether respondents thought it was that the variables vary between regions or that the value of the variables varies between regions will be considered further in the next chapter, which examines secondary data on potential 'independent' variables.

**Land Holding** – The questionnaire responses to development land *turnover* suggested differences in behaviour between the two groups (Table 5.11). It appears that larger firms are more likely to draw from their land banks for development land, whereas smaller firms predominantly develop land as soon as possible after purchase. This difference was tested using the MWU test, which was significant at the 1% level; the results are shown in Table 6.5. This confirms the difference in behaviour and suggests that larger firms have a higher degree of flexibility in output levels and potentially the ability to significantly influence local land supply and with it land prices within the local market.

**Table 6.5 Results of test on development land turnover**

|  | Z | P |
|---|---|---|
| '350 units pa or more' vs. 'less than 350 units pa' | -2.636 | 0.008 |

As with the previous question an important difference between the two groups was observed between the relative sizes of land holdings. Measured as a proportion of average annual completions it was found that '350 or more' group of firms have relatively larger land holdings. Two thirds of this group had three to four years' supply of land, whereas sixty per cent of the smaller firms had between one and two years supply. This was tested using the MWU test, which confirmed the difference and was statistically significant at the 1% level; the results are shown in Table 6.6. This further supports the hypothesis that larger firms gain a degree of *market power* from their land holding practices.

**Table 6.6 Results of test on land bank sizes**

|  | Z | P |
|---|---|---|
| '350 units pa or more' vs. 'less than 350 units pa' | -2.541 | 0.011 |

There was no statistical difference between the two groups on the proportion of the land holdings with planning permission.

No tests were performed on the responses to "*What proportion* (of land holding) *is held on 'options' or 'conditional contracts'?*" as there was little difference between the 'average' responses of each group.

No statistical difference was found between the two groups with regard to preference for large/small or green/brown-field sites. However, a statistical difference was found when testing between firms with more than/less than 500 completions per annum. The larger firms showing a greater preference for large brown field sites. Results shown in Table 6.7.

| Table 6.7 Results of test on site size preference | | |
|---|---|---|
| | Z | P |
| '500 units pa or more' versus 'less than 500 units pa' | -2.291 | 0.022 |

This is possibly an indication of the greater expertise required to develop such sites and of the concentration of these skills within larger firms.

**Production flexibility** – No tests were performed on the responses to "*At what level is there flexibility in the budgeted production targets?*" as almost all the responses fell into two categories: a) multi-regional firms, with just three firms indicating that their decisions were taken at national level and all of whom operate in just two regions with an average output of four hundred completions per annum or less, and b) single-regional firms, to whom the question was irrelevant.

No tests were performed on the responses to "*At what intervals do scheduled production reviews occur?*" as there was little difference between the 'average' responses of each group. Although there appeared to be a small difference in the distribution of unscheduled production reviews this was not confirmed statistically.

No tests were performed on the responses to "*On average, how quickly are you able to change your rate of starts in response to a change in demand?*" as there was little difference between the 'average' responses of each group.

**Output and price sensitivity to market changes** – Developers were asked to indicate whether they were *likely* or *unlikely* to change price or production levels in response to increases in new or second-hand prices or market activity. The observation that house builders appear to pay less attention to the second hand market than the new market when making pricing and production decisions was confirmed statistically. Table 6.8 shows the results; the difference in response with 'price' was significant at the 5% level and the difference in response with 'production' was significant at the 1% level. Although the responses also seemed to indicate that house builders are more likely to review prices than production levels in reaction to increases in either market activity or price this could not be confirmed statistically.

**Table 6.8 Tests on reaction to market changes**

|  | Z | P |
| --- | --- | --- |
| $\Delta p \rightarrow \Delta$shma vs. $\Delta$nma | $-2.449^a$ | 0.014 |
| $\Delta p \rightarrow \Delta$shp vs. $\Delta$np | $-2.236^a$ | 0.025 |
| $\Delta o \rightarrow \Delta$shma vs. $\Delta$nma | $-3.162^a$ | 0.002 |
| $\Delta o \rightarrow \Delta$shp vs. $\Delta$np | $-2.828^a$ | 0.005 |
| a. based on negative ranks | | |

Where:   p = price; o = production; $\Delta$ = "a change in"; np = new house prices; nma = new market activity; shp = second-hand house prices; shma = second-hand market activity

Again when we separate the firms into two groups some interesting results are found. Larger firms are more likely to respond generally to changes in the second-hand market. In particular they are almost twice as likely to react with price to either changes in second-hand prices or changes in second-hand market activity. Table 6.9 shows the results, which were all significant at the 5% level.

**Table 6.9 Tests on reaction to second-hand market changes**

|  | Z | P |
| --- | --- | --- |
| How likely are you to review prices: | | |
| when second-hand house prices increase | -2.440 | 0.015 |
| when second-hand market activity increases | -2.133 | 0.033 |

In general it would appear that larger firms are more likely, or more able, to adjust their behaviour in response to changes in general market conditions.

### 3. Summary of questionnaire findings

This section summarises the responses to the questionnaire and begins to draw out the main requirements needed for a model of house-builder behaviour and from there an explanation of market housing production. The main observations from the questionnaire are then:

- In all except the case of *sales revenue* long run goals were rated 'more important' than short run. In particular *long run profit* was rated more important than either *short run profit* or *growth of the firm.*

- All but four of the firms that trade in more than one region set separate regional targets. The four that do not set separate targets for each trade in only two regions and have average annual completions of 350 or less.

- All but three of the firms that trade in more than one region set targets at a regional level. The three that do not set targets at a regional level trade in only two regions and have average annual completions of 400 or less.

- Eighty per cent of all firms target both profit and units. Of the remaining five, four target profit alone whilst only one targets units and not profit.

- Eighty-nine per cent of all firms have a long-term strategic plan. The remaining three firms have average annual completions of 250 or less.

- Two-thirds or firms producing less than 350 units per annum do not undertake formal market research, whereas over 80% of firms producing 350 or more do.

- Around half of the respondents felt that the variables influencing production differed between regions. However, it is possible that the question was misinterpreted and taken to ask whether the 'value' of the variables varied between regions. Most of the smaller *single region* firms did not answer this question.

- Eighty-seven per cent of firms with average annual completions of *less than 350* indicated that over seventy-five per cent of their land purchases were made with the intention of immediate development rather than for addition to their land bank.

- By comparison of the group of firms with *350 or more* average annual completions fifty per cent indicated that less than half was for immediate development.

- Sixty per cent of firms with average annual completions of *less than 350* indicated that they had between one and two years land supply in their land banks. A further twenty-seven per cent of this group had two to three years supply.

- In comparison of the group of firms with *350 or more* average annual completions two-thirds held between three and four years supply of land.

- Whilst there seems to be an even spread of responses from the *less than 350* group, over 80% of the *350 or more* firms indicated that at least 60% of their current land bank had planning permission.

- Over sixty per cent of all respondents indicated that less than twenty-five per cent of their land holdings are held with 'options' or 'conditional contracts'. A further twenty-three per cent indicated that between twenty-five and fifty per cent was held using these arrangements. There appears to be no difference between the groups of larger and smaller firms.

- There is a two-thirds/one-third split between preferences for small or large sites amongst all respondents, although this was slightly higher for the *350 or more* group of firms. There was no significant difference in preference for brown or green field sites.

- Unsurprisingly the level at which decisions to adjust production are taken is the same as with setting production targets, i.e. normally at a regional level, either the regional board of a national firm or the national board of a regional firm. As with target setting there were a few smaller firms that do not fit this classification.

- Twenty-four of the twenty-seven firms (eighty-nine per cent) indicated that production reviews occur monthly. One indicated that they regularly occur more frequently (weekly).

- There is a small difference between the frequency of unscheduled production reviews between the *350 or more* and the *less than 350* groups. The most

common response for the *350 or more* group was 'often'. Whereas for the *less than 350* group of firms the most common response was 'occasionally'.

- Two-thirds of all firms indicated that they would be able to respond to changes in demand within three months. Another twenty-seven per cent indicated three to six months. There was a slightly greater tendency for the *350 or more* group to indicate the 'less than three months' option.

- All firms are more likely to respond to changes in the new house market than second-hand and are more likely to respond with price than production changes. There is an increased likelihood that the *350 or more* group will respond to the second-hand market and with changes in production levels.

- The most commonly cited factors influencing production are land supply, planning, labour, finance and work-in-progress. The relative importance of these varied for the two groups.

- To the question on output differences between the North West and East Anglia there appears to be a predominance of *demand-side* factors in the responses. But for the question of the individual firm's output it was mainly *supply-side* factors that were indicated.

## 4.    Analysis of questionnaire findings

The distribution of output between firms illustrated by Figure 4.11 demonstrates that the new housebuilding in England is highly concentrated. It is would be useful to examine this at a regional level to match the focus of this research project. However, data is not published to this level of detail and would require the collection of more primary data, which is likely to prove problematic as much of the information required would be commercially sensitive and firms are unlikely to reveal the information. It is argued here that the degree of concentration of production seen at the national level is repeated at the regional level and in some regions is greater. The model of house builder behaviour developed from this research and from there the explanation of regional variations in output will need to recognize the potential effects of this concentration of output.

Most firms, regardless of size, were found to give more importance to long-run goals rather than short-run. The assumption here is that the 'long-run' refers to a period of at least two to three years, the short-run being a year or less. Not only is this the case generally but more specifically, with long and short run profitability. Additionally *growth of the firm* was found to be at least as important as *short-run profit* for the majority of firms. This together with the finding that nine out of ten firm have a long term strategic plan suggests that the model of house builder behaviour should allow for production decisions that give outcomes other than short-run profit maximisation; in fact this is unlikely to be the prime motivator for firms.

The degree to which decisions on levels of output are devolved within firms will influence any explanation of the variation in new housebuilding between regions. Firms who trade in a single region aside it would appear the majority of 'multi-region' firms devolve output decisions to a regional, or pseudo-regional, level; this is with regard to the internal structure, target setting and flexibility of output. It is reasonable to assume that the few firms that do not have this level of devolution do so because their output levels are low enough for them to limit their management structures. Although the evidence supports the devolution of production decisions to regional management, it is not suggested that national management have no influence, they unquestionably will have. Also the decision-making processes will be similar if not the same, certainly within regional operations of the same firm and quite probably across individual firms of similar sizes. The model of house builder behaviour must, implicitly if not explicitly, allow for this devolution of production decisions, strengthening the explanation of regional variations in house building.

The question of whether firms generally adopt a regional structure because as Ball (2003) contends they have reached the limit of the economies of scale or whether they view each region as, at least approximating, a distinct housing market area, which is sufficiently different from neighbouring regions to warrant separate consideration. An *old institutionalist* explanation might follow the lines of Churchill's "*we shape our building and then our buildings shape us*"; in the same way firms may structure themselves to correspond to government office regions even though it may not equate

to any kind of individual 'market'. The answer to this may become clearer with the investigation of secondary data in the next chapter.

Some of the most interesting and noteworthy findings of the questionnaire relate to the land holding practices of housebuilding firms. In particular it is the differences between firms of differing sizes, with the group of larger firms holding relatively larger land holdings; with three-quarters of them having at least three years supply at current development rates. Whilst half of smaller firms have between one and two years supply and a further quarter having two to three years supply. It is unsurprising then that smaller firms are much more likely to develop land as soon as it is available.

This ability to secure a key factor of production must bestow on larger firms some real benefit. If this were not the case they would not invest the capital or the management time. It would also appear that larger firms are no more likely to use *options* or *conditional contracts* to secure this advantage; if anything smaller firms are marginally more likely to do so. The question is then why do they go to this expense and trouble, what benefits or advantages do they gain?

As land is a key factor of production an uninterrupted supply is essential if house builders are to be able to continue to trade. By holding what might be considered to be excess land, they reduce the uncertainty they face about future supplies of this resource. Not only in terms of the level of demand, which may increase quicker than it is possible to identify, purchase and obtain planning consent on suitable additional supplies, but also in terms of location. By holding land in different locations a firm is able to adjust production rates to match changes in demand. Again it would appear from the analysis of the questionnaire responses that a higher proportion of the land holdings of larger firms have current planning permission. This will augment the increased flexibility of production these firms benefit from with their larger land holdings.

The analysis of questionnaire responses also revealed that most firms review production rates monthly, some more often. Larger firms are marginally more likely to review levels between scheduled reviews, suggesting again that they enjoy greater

flexibility in production. Two thirds of firms indicate they are able to change production rates within three months, another quarter within three to six months. In contradiction to earlier observations the responses to the question on *speed of change* suggest that it is the group of smaller firms that appear better able to adjust production. The slower response from larger firms may be due to inflexibility in factors other than land supply.

The responses to the questionnaire suggest that all firms are more likely to change price than production levels (i.e. inelastic supply) and that they are more likely to react to changes in the new housing market than the second-hand market, although smaller firms are slightly less likely than larger firms to respond to the second-hand market. The group of larger firms are slightly more likely to change production than the smaller firms.

The main characteristics of a model of house-builder behaviour/regional production should capture are:

- Longer term focus, evidenced by:
    - long run goals on average rated more important than short run
    - majority of firms having a longer term strategic plan
- An awareness of the *production through time* issues, evidenced by:
    - land banking
    - the use of options and conditional contracts
- Regional variation in output, evidenced by:
    - devolved target setting and production reviews
- Multiple *goals*, evidenced by:
    - most firms have profit and units targets
    - responses to open questions, e.g. comments such as "*Utilisation of land bank to achieve targeted ROCE*", "*Requirement to grow pre-tax profits progressively*" and "*Investor strategy and profit targets*"
- Difference in behaviour between smaller and larger firms, evidenced by:
    - speed of development of sites
    - relative size of land banks
    - frequency of unscheduled production reviews

- answers to open questions, e.g. the relative importance of land supply and planning

- Flexibility in production/price, evidenced by:
  - frequency of scheduled and unscheduled production reviews
  - speed of change in production rates
  - responses to price and demand changes

Here again there is a time or continuity element to behaviour. Further, the management of housebuilding firms need long-term employment (at least they expect to need it) so they are motivated to plan in such a way that increases the probability of the firm continuing to trade. Whilst endeavouring to ensure that the firm rewards the owners, they avoid exposing the firm to high levels of risk.

It has already been established that firms have a longer-term perspective, they plan to be in business in the future, however, as residential development is not an instant process housebuilders face conditions of uncertainty when making decisions regarding future levels of production. Residential development has several definite stages, site identification and purchase, planning approval, development and finally, sale. The last two stages are often combined, dwellings sold from plan, to reduce the total development time and therefore the uncertainty faced. However, the development process is still likely to take in excess of six months, and probably longer, for the first sale to occur; for larger sites the last dwelling may not be sold for several years. Given this it is impossible for house-builders to make decisions about future demand with an unqualified degree of certainty, development decisions are taken under conditions of real uncertainty.

**Chapter Seven**

**Housing: Factors Of Supply And Demand**

## 1.	Introduction

This chapter examines general secondary data on factors that are thought to affect the level of output. Data from both the supply and demand side are examined. Primarily the concern was to determine if there were any significant differences in these data between the regions that may help explain variations in output. The choice of 'factor' has been guided mainly by the responses to the questionnaire, but also with reference to other theories and research identified in the literature review. On the demand side these include population and migration, employment levels and types, and income levels and distribution. On the supply side housebuilding land transactions and prices, the volume of planning decisions and planning delays as well as labour supply and skills will be examined. The data presented compares and contrasts the differences between the regions, how they have changed between 1995 and 2002 and begins to consider how they might influence housing output.

The chapter is divided into six sections; the next examines data on the three key supply-side factors land, labour and capital. In the third section demand-side factors are examined, the choice of many of these was guided by the responses to the questionnaires. In the following section both new and second-hand house price data for is examined. In the fifth section a more detailed examination of the East and North West regions. This mirrors the examination undertaken in chapter four re-examining the data from sections two, three and four in greater detail. The final section summarises the finding and makes some concluding observation with some hypotheses that are examined in further detail in chapter eight.

## 2.	Supply side factors

This section examines national and regional data on the factors of production: land, labour and capital. Land as an input is different for housebuilding, than for other forms of production. Rather than being used as site for the manufacture of products that are then distributed to the market place, land is consumed by the process of

production and cannot be reused, at least not in the short-term, output is therefore locationally fixed and cannot be moved if demand develops elsewhere. Given this housebuilders view the availability of land much in the way other manufacturers might view other raw materials such as steel or oil. The availability of land for development will be considered from a number of perspectives, firstly the volume and cost of land being traded for residential development. Secondly, as it potentially has a considerable effect on the regional variation in housebuilding and was identified by a significant number of respondents to the questionnaire, planning, both in terms of the volume of permissions and the speed at which decisions are made. Other raw materials are consumed in the construction of housing but these, for the moment will not be considered here as they were not flagged up by the questionnaires and are assumed to be in sufficient supply. Although there may be short-term supply issues if demand were to increase suddenly.

In terms of capital this analysis will be limited to *financial* requirements only as housebuilding is in the main a labour intensive production process with relatively few automated procedures and as with *other* raw materials any mechanical equipment or processes are assumed to be in sufficient supply as they were not flagged up by the questionnaires. Unfortunately financial data on some areas of house-builder activity is commercially sensitive and therefore not published. The collection and analysis of this data would then itself constitute a separate research project. As a consequence the analysis here will be limited to general market data such as interest rates with a further discursive analysis in later chapters.

As the availability of labour with the requisite skills, both manual and managerial, is probably the other key factor of production, again identified by a considerable number of questionnaire responses, it will be considered in some detail. As a factor of production, however, it is reasonably *mobile* and its potential to help explain regional variation in output may be limited.

**Development land supply** – in response to the question "*What long-term variables are considered when setting production targets*?" the majority of respondents identified land-supply/availability as a key issue. Table 7.1 shows the average number of plots sold annually. This figure was generated by dividing the number of

hectares sold for residential development by the average density for each region; these were reported in *Housing Statistics 2003*. There are some limitations to this data; firstly it only records sales of sites of four or more plots. However, as major house-builders are unlikely to purchase sites under this threshold it should not affect the general conclusions of this project. Secondly, the data is based on all sites known to be for residential development, but excludes those where the area was not known. This may have some effect on the strength of the inferences made from this data as any land that is purchased speculatively, for example outside the current Local Plan and away from the boundaries of current residential areas. This long term land banking may eventually feed into the system and will not have been picked up by this data set, although it may be reasonable to assume that the 'error' from this is on average the same in all regions and therefore the relative volumes is useful. Thirdly, "*transactions are reported, on average, about nine weeks after the completion of sale. The lag between agreement of price and completion varies considerably, but about three months is believed to be typical*" (ODPM, 2003). The effects of this lag will be considered later. There were no sales recorded for London in 2001 and 2002.

**Table 7.1 Additions to residential building land stock**

|  | Average plots per year | Plots per 000 population |
|---|---|---|
| East | 8,885 | 1.67 |
| East Midlands | 9,875 | 2.38 |
| London | 984 | 0.19 |
| North East | 3,990 | 1.57 |
| North West | 9,340 | 1.38 |
| South East | 9,329 | 1.18 |
| South West | 15,711 | 3.22 |
| West Midlands | 6,117 | 1.16 |
| Yorks & Humber | 8,109 | 1.64 |

*Source: ODPM (2003)*

There has been considerable annual variation in the quantity of land transactions, whether measured by hectares or plots, which is unsurprising given its lumpy nature. The third column in table 7.1 shows the number of plots weighted by population, in the same way as completions were in chapter four. This allows some comparison to be made between the rates at which development land is being replaced. The only region in which it is being replaced faster than it is being depleted is the South West, the figures for which may be distorted by two years in which the volume of land transacted was double the average. Of the other regions, except London, the shortfall

is anything from slightly under a third, in the East Midlands, to just over a half, in the South East. London, as always, seems to suffer from conditions unlike those in any other region, which will make it unwise to apply the same generalisations that hold for other regions.

There is an important caveat that must be considered when using these figures, as they do not take account of the stocks of land that were in place before 1995; although it does seem unlikely that there was a sufficiently large surplus being held in eight of the nine regions that house-builders have been able to cover a shortfall of fifty per cent per year for eight years. It is more likely that there has been some under-recording of land transactions. This will be considered further when data for the East and North West are examined in more detail. This data should offer a useful insight, the previous caveat aside; into house-builder expectations about future demand in certain regions as development land represents a key input into the development process.

**Table 7.2 Average annual land price increases**

|  | Average increase |
|---|---|
| East | 20% |
| East Midlands | 13% |
| London | 19% |
| North East | 13% |
| North West | 13% |
| South East | 18% |
| South West | 14% |
| West Midlands | 12% |
| Yorks & Humber | 7% |

*Source: ODPM (2003)*

Table 7.2 shows the average annual increase in housing land prices between 1995 and 2002. The regions can be divided into three groups; the first group, centred on London and with clearly the highest average growth in land prices, are the East (20%), London (19%) and the South East (18%). The second group contains all of the remaining regions, with the exception of Yorkshire & Humberside, where the average increase is between twelve and fourteen per cent; with Yorkshire & Humberside by comparison at a modest seven per cent. Again these are likely to reflect housebuilders future expectations of demand and growth in house prices,

although they will also reflect the availability of land suitable for development and the current levels of demand for housing.

**Planning decisions and delays** – this section looks at both the volume of planning decisions (acceptances and rejections) and planning 'delays', i.e. the proportion of applications that are decided within the eight and thirteen week periods. Table 7.3 shows the average number of planning applications that were granted per year between 1996 and 2002 (no published data for 1995 was found) weighted again per thousand head of population.

**Table 7.3 Average number of applications granted (1996-2002)**

|  | Per 1,000 population |
| --- | --- |
| East | 23.4 |
| East Midlands | 20.4 |
| London | 16.3 |
| North East | 14.8 |
| North West | 15.6 |
| South East | 25.2 |
| South West | 27.6 |
| West Midlands | 17.0 |
| Yorks. & Humber | 17.1 |

*Source: ODPM – Live tables*

The highest relative level was recorded in the South West, as with the volume of land transacted, at 27.6 permissions per 1,000 head of population. The South East, East and East Midlands form the second group with between 20.4 and 25.2 permissions per 1,000 head and the remaining regions range between 14.8 and 17.1. There are some significant limitations to this data however. Firstly, the figures include all planning applications, many of which will be by householders requesting permissions for alterations and extensions to existing properties. The question is whether it is reasonable to argue that this is likely to be a similar proportion in each of the regions and therefore comparison between the relative levels is meaningful or not. In addition there is no data to confirm or otherwise that those applications which are for new housing have a sufficiently similar average, in terms of the number of dwellings. It is probably unwise, therefore, to make any strong inferences, or draw any definite conclusions, from this data. However, its apparent correlation with land transactions is worthy of further consideration and suggests that it may be representative of the relative level of applications.

Although the speed at which planning applications are decided should make little or no difference to the total output within a region, particularly in the longer-term, as any 'delays' would be scheduled into the project by housebuilders, it is considered here briefly as it was cited by a number of questionnaire respondents. Table 7.4 shows the percentage of applications that were either accepted or rejected within the Governments eight and thirteen week target periods. These figures do not include those applications on which no decision could be made, for example, those that were referred back to the applicant for further clarification.

**Table 7.4 Speed of decisions on applications (1996-2002)**

|  | Applications granted | |
|---|---|---|
|  | % within 8 weeks | % within 13 weeks |
| East | 65 | 85 |
| East Midlands | 65 | 85 |
| London | 59 | 79 |
| North East | 68 | 89 |
| North West | 64 | 86 |
| South East | 64 | 84 |
| South West | 64 | 84 |
| West Midlands | 64 | 85 |
| Yorks & Humber | 61 | 82 |

*Source: ODPM – Live tables*

There is little variation between the regions, again with the exception of London. The North East has the highest level of decisions within the two target periods, three percentage points above the nearest. The rest, excluding Yorkshire & Humber and London, are within two to three points of each other. Yorkshire & Humber are on average three points behind the main group, with London three points further adrift. The similarity between the regions and allowing for house-builders ability to 'absorb' delays within the development process suggests that the explanation of regional variation in output is not likely to be as a result of differences in planning delays, with perhaps the exception of London where it has already been acknowledged the conditions are unlikely to be similar to the rest of the country. That is not to suggest that the time taken to gain planning permission does not add an additional cost to the development.

**Financial capital** – Although the cost and availability of finance was cited by a number of respondents to the questionnaire there is no regional variation in cost and

availability is more likely to be dependant upon the firm in question. It is unlikely then to affect the regional levels of output unless the need for external funding effects a particular group of housebuilders, for example smaller firms, and that a greater proportion of the output of some regions is from that group of firms. As house-builders use 'residual' pricing for development land any increase in the cost of finance could be absorbed in lower land prices mitigating, to some extent at least, any regional variation in the sensitivity of output to finance costs. There is also some evidence that some house-builders do not factor in the full cost of land holding (see for example Gerald Eve and Department of Land Economy, 1992). The cost of finance is more likely to affect the demand for housing and this will be considered further later in this chapter. The Bank of England base rate between 1995 and 2002 is shown in figure 7.1.

**Figure 7.1 Bank of England base rate (1995-2002)**
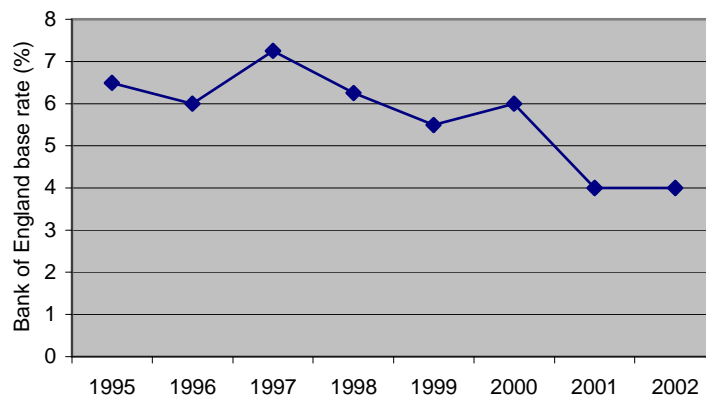


*Source: ODPM (2003)*

**Labour supply and skills** – The availability of labour with the requisite skills, both manual and managerial, were identified by a number of questionnaire responses. Figure 7.2 shows the average regional unemployment rates between 1995 and 2002. Whilst this gives an indication of the 'pool' of surplus labour available to support an increase in output, it does not give any indication of its skills base. So whilst there may be a theoretical surplus of labour, there is no indication whether the 'surplus' has, or is willing to gain, the appropriate skills to support any increase in output. Given the relative mobility of labour it is unlikely to be a significant determinant of the regional variations in production. However, there does seem to be an approximate correlation between unemployment and regional levels of output, which

suggest that this may be a demand-side factor rather than a supply-side one and will be investigated further in the next section.

**Figure 7.2 Average regional unemployment rate (1995-2002)**
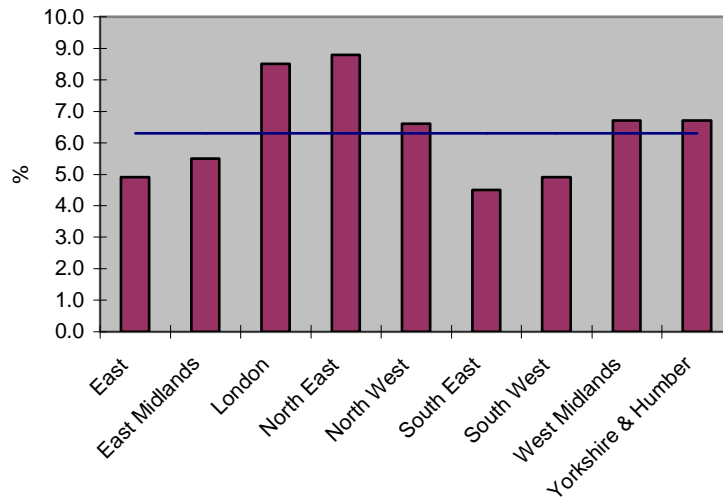


*Source: ONS, Labour Force Survey*

## 3.      Demand side factors

This section examines regional data on the factors that are likely to affect demand. As with the supply side these will be either those mentioned in the questionnaire responses or identified in the literature or other research. They include population and migration, employment levels and types, and income levels and distribution. It will re-examine some of the factors considered in section 2, as these have a possible dual effect.

**Population and migration** – as the primary purpose of a dwelling is to provide habitation, although in some areas the demand for second homes may be a significant factor, the first factor to be considered in this section is changes in population and household numbers. Figure 7.5 shows the changes between 1995 and 2002. London has had the strongest growth over the period at an average of almost one per cent per year. The remaining regions can be divided into three groups: firstly the East, South West, South East and East Midlands growing between 3.1% and 4.1%.

**Table 7.5 Change in population (1995-2002)**

| | % change 1995-2002 | Average number of new households per year (000s) |
|---|---|---|
| East | 4.1 | 11.2 |
| East Midlands | 3.1 | 6.6 |
| London | 7.2 | 27.1 |
| North East | -2.3 | -3.2 |
| North West | -0.9 | -3.1 |
| South East | 3.5 | 14.2 |
| South West | 3.8 | 9.6 |
| West Midlands | 0.9 | 2.5 |
| Yorks & Humber | 0.5 | 1.4 |

*Source: ODPM (2003)*

The second group are the West Midlands and Yorkshire & Humber where growth has been almost neutral for the period at 0.9 and 0.5 respectively, and the North East and the North West with negative growth (–2.3% and –0.9% respectively), although the change in the North West is very small and therefore almost neutral. Unsurprisingly the growth in the average number of households matches these changes in population allowing for the differences in population sizes.

**Table 7.6 Average household size (1995-2002)**

| | Average size | % Change |
|---|---|---|
| East | 2.39 | -0.05 |
| East Midlands | 2.41 | -0.04 |
| London | 2.28 | -0.02 |
| North East | 2.35 | -0.06 |
| North West | 2.39 | -0.05 |
| South East | 2.40 | -0.05 |
| South West | 2.36 | -0.05 |
| West Midlands | 2.45 | -0.04 |
| Yorks & Humber | 2.37 | -0.02 |

*Source: ODPM (2003)*

The demand for new housing from population growth is translated by average household size and moderated or accentuated by changes in this. Table 7.6 shows both the average household size and the percentage change in household size between 1995 and 2002. There is only a small difference between the regions in terms of average household size; London has the smallest average, at 2.28 and the West Midlands the highest, 2.45. Although there is only a difference of 0.17 between the two regions this equates to a need for an extra thirty thousand dwellings per million head of population.

Changes in population are driven by two main factors, natural growth (births less deaths) and migration (both international and interregional). Although the effects of migration are contained within the overall population figures, shown in Table 7.5, difference in the sources is likely to have an affect on the type of housing demanded. For example, it seems reasonable to suggest that the demand for private owner occupied housing from internal or interregional migration is at least equal to the proportion of owner occupied housing for England. International migration is less likely to display the same consistency. In London, for example, there is a high level of net inward migration; a number of these will be from the international business community who will require the flexibility of private rented accommodation. Others may be political migrants who have little wealth or income and will require social housing. If the mix of migrants varies regionally this may explain some of the differences observed.

**Figure 7.3 Average annual migrations**
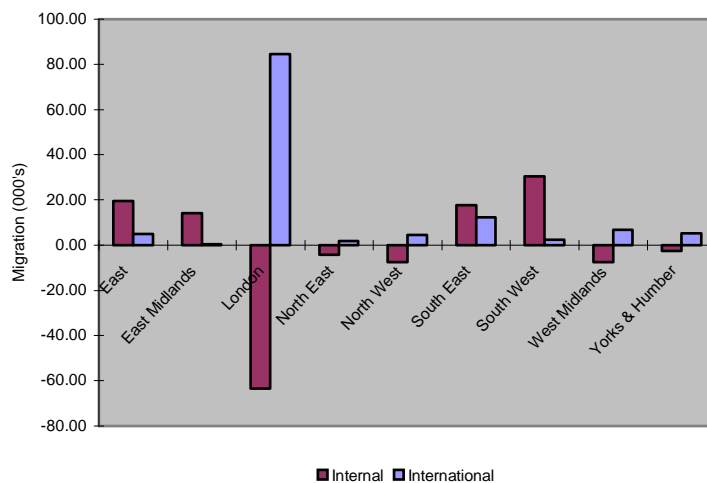


*Source: ONS (2003)*

Figure 7.3 shows average internal, international and net migration for 1995 – 2002. As before the region can be divided into two general groups: the first with both positive internal and international migration over the period. Again this group includes the East, the East Midlands, the South East and the South West. London is included in the second group this time, due to significant negative internal migration,

along with the West Midlands, North East, North West and Yorkshire & Humberside.

The picture is different if we look at the figures for 'net' migration, shown in table 7.7. Here the division of the regions into south-eastern and north-western groupings returns. The first group all have strong positive net migration, London returns to this group by virtue of a high level of net inward international immigration more than offsetting the high level of negative internal migration. The remaining north-western regions all have low levels of internal and international immigration, which in all except the case of Yorkshire & Humberside, result in a negative net overall figure. The significant difference once again in the figures for London are probably due to its status as a capital city, and probably influences both the type of dwelling constructed and the ownership characteristics displayed but this is not a question that is being directly considered by this research project.

**Table 7.7 Net migrations**

|  | 000's |
|---|---|
| East | 24.36 |
| East Midlands | 14.46 |
| London | 21.05 |
| North East | -2.58 |
| North West | -3.20 |
| South East | 29.92 |
| South West | 32.66 |
| West Midlands | -0.91 |
| Yorks. & Humber | 2.52 |

*Source: ONS (2003)*

**Interest rates** – Whilst there is no regional variation in interest rates, other than possible small differences offered by local building societies, there is likely to be differences in the levels of exposure between regions. Figure 7.4 shows the average annual mortgage rate, which fell from 7.83% in 1995 to 5.03% in 2002. This fall will have had a greater effect in regions where the ratio of mortgage advances to incomes was highest. In this case as the cost of borrowing falls those households with higher advances to incomes ratios would find that they had a larger nominal saving on mortgage payments. The question is whether this would be translated into increased demand for new housing, higher house prices or a combination of the two.

**Figure 7.4 Average annual mortgage rates (1995-2002)**
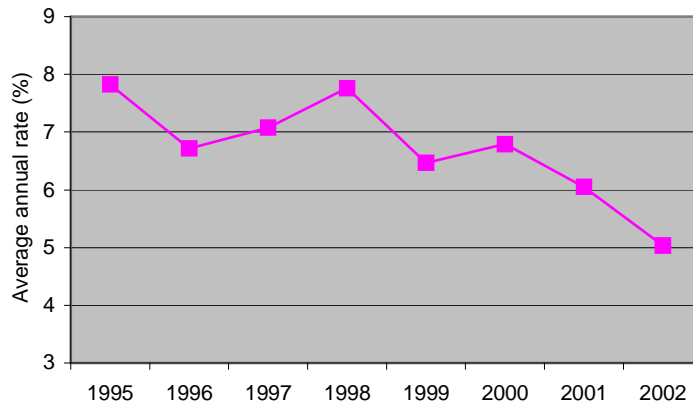


Source: ODPM (2003)

Table 7.8 shows the average mortgage advance and house price to income ratios for the UK. It increases from 2.14 in 1995 to 2.36 in 2002. So whilst the cost of borrowing is falling borrowers are increasing the amount of their borrowings, which suggests that households prefer, during this period at least, to use any surplus from lower interest charges on increased mortgage advances.

**Table 7.8 Mortgage advance and house price to income ratios**

|      | Mortgage | Price |
|------|----------|-------|
| 1995 | 2.14     | 2.95  |
| 1996 | 2.14     | 2.95  |
| 1997 | 2.15     | 3.05  |
| 1998 | 2.18     | 3.03  |
| 1999 | 2.21     | 3.19  |
| 2000 | 2.26     | 3.33  |
| 2001 | 2.30     | 3.34  |
| 2002 | 2.36     | 3.60  |

Source: ODPM (2003)

The ratio of new house price to income over the period increased from 2.95 in 1995 to 3.60 in 2002. As the ratio of new house price to incomes increased faster (twenty-two per cent) than the mortgage advance to income ratio (ten per cent) this suggests that at least some of the increase in borrowing is being absorbed by higher prices. Whether this was due to unresponsive supply or part of a more general increase in prices for all housing will be considered later.

**Economic activity and income –** the second group of factors most likely to affect the demand for private sector housing in England is employment and income, as these will affect household ability to obtain and repay mortgages. Table 7.9 shows the average employment, unemployment and economic activity rate for each of the

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English regions between 1995 and 2002. The rate of economic activity includes both those in and those seeking employment; the gradient away from London can be seen again is these figures. Although looking at those for employment alone London falls in the middle of the range as is has the second highest level of unemployment.

**Table 7.9 Economic activity rates**

|  | Employment rate | Unemployment rate | Economic activity rates |
|---|---|---|---|
| East | 61.8 | 4.9 | 66.8 |
| East Midlands | 60.4 | 5.5 | 65.9 |
| London | 59.0 | 8.5 | 67.5 |
| North East | 52.8 | 8.8 | 61.6 |
| North West | 56.3 | 6.6 | 62.9 |
| South East | 63.3 | 4.5 | 67.7 |
| South West | 60.0 | 4.9 | 64.9 |
| West Midlands | 58.4 | 6.7 | 65.2 |
| Yorks. & Humber | 57.4 | 6.7 | 64.1 |

*Source: ONS, Labour Force Survey*

London aside the south-east/north-west divide can also be seen in the unemployment figures, this time with the levels rising towards the north-west. The East, East Midlands, South East and South West all have above average employment rates and below average unemployment rates, the reverse being true for the West Midlands, Yorkshire & Humber, North East and North West. London has both above average employment and unemployment rates. Possibly reflecting a need for greater household income to meet higher living costs, including housing costs, in the Capital.

**Figure 7.5 Average annual earnings 1995-2002**
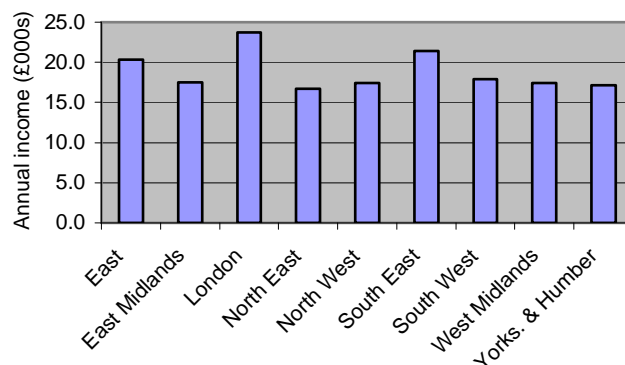


*Source: ONS, Labour Force Survey*

Figure 7.5 shows the average annual income of full-time employees between 1995 and 2002. The south-east to north-west gradient is repeated with London the highest at almost £24,000 per annum, falling to just under £17,000 in the North East. As with employment the East, East Midlands, London, South East and South West all have average annual incomes for the period above the English regional average and the West Midlands, Yorkshire & Humber, North East and North West are all below average.

During informal interviews with house-builders prior to the questionnaire being sent it was suggested that the type of employment in a region influenced the decision to develop; this was also cited in the responses to the question on the differences between the North West and East of England. For example, areas with a higher proportion of the workforce employed in banking and financial services rather than manufacturing were seen as a good indicator of future demand for new housing. It is presumed at this stage that this focus is driven by differences in income levels and general strength of the sectors. Table 7.10 shows the relative levels of employment in the manufacturing and construction, financial and business services and public sector.

**Table 7.10 Employment by sector**

|  | Manufacturing &Construction | Public Sector | Financial & Business Services |
|---|---|---|---|
|  | % | % | % |
| East | 19.3 | 22.3 | 19.1 |
| East Midlands | 18.7 | 24.1 | 14.2 |
| London | 9.8 | 19.5 | 33.0 |
| North East | 22.4 | 30.0 | 13.4 |
| North West | 21.0 | 26.1 | 16.2 |
| South East | 15.3 | 22.5 | 23.2 |
| South West | 18.8 | 26.1 | 16.9 |
| West Midlands | 24.2 | 24.3 | 19.6 |
| Yorks. & Humber | 23.0 | 26.1 | 14.2 |

*Source: ONS: Labour Force Survey*

The highest level of manufacturing and construction employment was in the West Midlands at twenty-four per cent. All of the northern group of regions have above twenty per cent of employment within this sector. The remaining regions, excluding London, have between fifteen and nineteen per cent in the sector, with London below ten per cent. Again we see the north-western/south eastern divide or gradient.

Unsurprisingly London has the highest proportion of employment in the financial and business services sector at thirty-three per cent. The South East is the only other region that stands out form the rest at twenty-three per-cent, the remaining regions range between thirteen and nineteen per cent. The north-western/south eastern divide is less clear except perhaps in a more concentrated form around London and the South East.

There is no evidence of the south-east/north-west divide in the proportions of employment in the public sector other than to note that London had the lowest level and the North-east the highest; reflecting perhaps the recent government policy of moving some of the administrative functions away from the Capital for various policy reasons.

It would appear from the data in the previous section that household are inclined to utilize at least some of any increase in their disposable income on housing, up to a pre-determined limit, rather than save. Therefore, it is worth examining any differences in regional incomes as they may lead to differences in regional demand or prices.

## 4.      House prices

Average prices for both new and second-hand dwellings in England increased steadily between 1995 and 2002, shown in figure 7.6, both having more than doubled by the end of the period. New prices, however, on average increased faster doubling the gap between the two. They rose from an average of eighty thousand at the beginning of the period to one hundred and sixty-eight thousand in 2002, whereas second-hand houses increased from an average of sixty-seven thousand to one hundred and thirty-eight thousand. However, these figure take no account of the mix of dwellings being sold. If house-builders were building and selling a higher proportion of detached houses than being sold second-hand, as they might be inclined to do as the return per metre squared is higher for detached houses than for terraced and semi-detached houses, then the average price of new dwellings would be biased.

**Figure 7.6 Average dwelling prices (000s) 1995-2002**
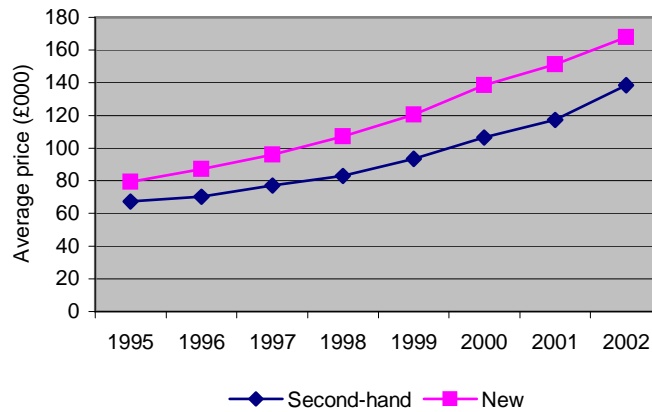


*Source: HMLR (Bespoke data set)*

On average, new dwellings have a price premium over second-hand dwellings. The exceptions to this occur where the 'average' new dwelling is a distinctly inferior product. Table 7.11 shows the average premium for new dwellings in England between 1995 and 2002. As figure 7.6 shows this increased rapidly from 18% in 1995 to 29% in 1998 after which it evened out before falling again in 2002 to 21%, just above its 1995 level. Here again it must be remembered that these figures are not adjusted for mix and may therefore not give an accurate account.

**Table 7.11 Premium for new dwellings (1995-2002)**

| Year | Premium |
|------|---------|
| 1995 | 18% |
| 1996 | 24% |
| 1997 | 24% |
| 1998 | 29% |
| 1999 | 29% |
| 2000 | 30% |
| 2001 | 29% |
| 2002 | 21% |

*Source: HMLR (Bespoke data set)*

Table 7.12 shows the average annual price increase for all dwelling types between 1995 and 2002. London shows the strongest average rate of growth at 26% for new and 20% for second-hand. The remaining regions show smaller new house price increases with the South East, South West and East Anglia with average annual increases of seventeen per cent. The West and East Midlands had average annual increases of fifteen and fourteen per cent respectively. The North West at twelve per cent and both the North East and Yorkshire & Humber at eleven per cent. This data

are reflective of the *ripple effect* often observed (Cook and Thomas, 2003; Drake, 1995; Meen, 1999). In all cases, except the South East and South West, second-hand houses increased by one to three per cent less, on average, than new house prices. It is London again which is out of line with the other regions, showing the greatest growth in the average difference between new and second-hand dwelling prices, at 6% it is double the best of the others. This may reflect a poorer quality generally in the stock leading to a stronger demand for new housing or a distinct difference in the type of dwelling being built.

**Table 7.12 Average annual price increase**

|                    | New | Second-hand | Difference |
|--------------------|-----|-------------|------------|
| East Anglia        | 17% | 16%         | 1%         |
| East Midlands      | 14% | 13%         | 1%         |
| London             | 26% | 20%         | 6%         |
| North              | 11% | 8%          | 3%         |
| North West         | 12% | 10%         | 2%         |
| South East         | 17% | 17%         | 0%         |
| South West         | 17% | 17%         | 0%         |
| West Midlands      | 15% | 13%         | 3%         |
| Yorkshire & Humber | 11% | 9%          | 1%         |

*Source: HMLR (Bespoke data set)*

Table 7.13 shows the average new dwelling price, all types, as a percentage of the average for all regions. Here again it is London that shows the largest gains relative to the rest of the country. The northern trio of the North, North West and Yorkshire & Humber show the largest relative losses with the remaining regions showing either modest gains or losses. One observation of note is that the region with the highest average number of completions (per 000 population), the East Midlands, has shown a 5% fall in its relative price. This measure does not take account of the 'mix' of dwelling types however. Giving rise to the anomaly in the 1995 figures that the average price for each dwelling type being higher in London than for the South East but the South East has an overall higher average due to the greater number of detached houses being built at that time. These rates of growth do not tally precisely with the increases in dwelling prices and may have more to do with future expectations of house prices and demand; this is an issue that will be considered later.

**Table 7.13 Relative prices 1995 & 2002**

|                  | 1995 | 2002 |
|------------------|------|------|
| East Anglia      | 90%  | 94%  |
| East Midlands    | 88%  | 83%  |
| London           | 117% | 158% |
| North            | 84%  | 71%  |
| North West       | 90%  | 77%  |
| South East       | 121% | 127% |
| South West       | 94%  | 99%  |
| West Midlands    | 93%  | 92%  |
| Yorks & Humber   | 90%  | 75%  |

*Source: HMLR (Bespoke data set)*

## 5. A North West and East regional comparative

In this section a more detailed examination is made between the North West and East of England. These two regions were chosen because there appeared to be a significant contrast in their relative outputs (2.4 and 3.2 completions per thousand head of population respectively). This section re-examines the data from the earlier sections in greater detail, including some longitudinal as well as spatial observations. As with the previous sections the factors of production, the supply side, are the first to be examined.

**Land transactions and prices** – There has been considerable annual variation in the quantity of land transactions. Figure 7.7 shows the annual number of plots sold, weighted by population in the North West and East of England. As before this figure was generated by dividing the number of hectares sold for residential development by the average density for each of the regions. Both regions start at similar levels that rise between 1995 and 1997. The East rises again in 1998 before falling every year, apart from 2001, until 2002. The North West by comparison falls every year after 1997, apart from 2000 and 2002, which is the only year that it is higher, in relative terms, than the East. Both the North West and East finish on levels marginally higher than they started, but as observed earlier is lower than the levels needed to replenish the land being used in development at 1.38 and 1.67 respectively. Although this does not seem a large difference the output in the East would be twenty per cent higher than the North West if they had similar size populations. However, the caveats stated in section 2 regarding this data continue to hold; so as previously suggested it is unwise to draw too many conclusions on the basis of this data alone.

**Figure 7.7 Relative additions to land stock 1995-2002**
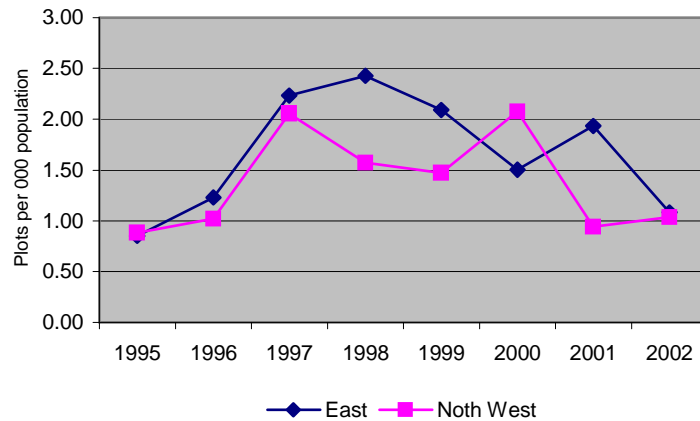


Source: ODPM (2003)

If it is assumed that the average 'error', both in terms of the stocks of land that were in place before 1995 and the under-recording of land transactions, are the same, then it is possible to offer some tentative hypotheses regarding house-builder expectations during this period. For the first two years there appears to be an increase in the demand for development land and then a slower falling away towards the end of the period. This may indicate that there was an initial expectation that the demand for housing would rise earlier, which was either not realised or caused to change after 1997, and more strongly in the North West.

**Figure 7.8 Annual land price changes**
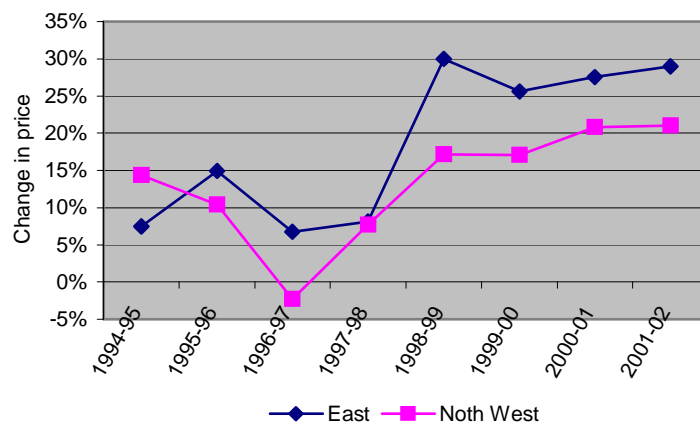


Source: ODPM (2003)

Figure 7.8 shows the annual change in housing land prices for the North West and the East between 1995 and 2002. Again, as observed with the number of housing

land transactions, the two regions follow similar patterns but at different levels. Initially lower growth or falling slightly and then increasing strongly in the second half of the period. This would suggest that there is a common factor affecting the general pattern of change in land prices across the regions, with perhaps other factors causing regional variations.

**Planning decisions and delays** – Table 7.14 shows the average number of planning applications that were granted per year in the North West and East between 1996 and 2002 weighted by population. As before the number of applications granted exceeds the number of new dwellings completed for each year, but as with national data include permissions for alterations and extensions to existing properties. In both regions there is an upward trend across the period with the East around fifty per cent higher. It is not possible from this data to determine whether the increase is from change to existing properties or from new house building or indeed both.

**Table 7.14 Number of applications granted per 000 population**

|      | East | North West |
|------|------|------------|
| 1996 | 6.6  | 4.5        |
| 1997 | 9.1  | 6.1        |
| 1998 | 9.4  | 6.1        |
| 1999 | 9.6  | 6.3        |
| 2000 | 10.2 | 6.6        |
| 2001 | 10.5 | 7.1        |
| 2002 | 11.3 | 7.7        |
| Mean | 9.5  | 6.3        |

*Source: ODPM – Live tables*

The question remains whether it is likely to be a similar proportion in each of the regions and therefore comparison between the relative levels is meaningful. Therefore whilst it is not possible to make any strong inferences or draw any definite conclusions from this data, however, when used in conjunction with other data it may add some 'weight' to an argument.

Table 7.15 shows the percentage of applications that were either accepted or rejected within the Governments eight and thirteen week target periods. Although the speed of planning application decisions should be scheduled into the development by housebuilders and therefore make no difference to the total output any significant

changes may have at least a short-term effect. Whilst the eight and thirteen week averages for the North West and the East are similar this hides a dramatic improvement in the North West against the eight-week benchmark. At the beginning of the period sixty-two per cent of applications were granted within eight weeks, by the end of the period it was seventy per cent. Although again it is not possible to determine if these were householders requesting permissions for alterations and extensions to existing properties or for new house building. However, if it was assumed that the proportions remained constant then this would indicate that the ability of house builders to respond to increases in demand had improved in the North West.

**Table 7.15 Speed of decisions on applications (1996-2002)**

| % within: | Applications granted | |
|---|---|---|
| | East | North West |
| 8 weeks | 65 | 64 |
| 13 weeks | 85 | 86 |

*Source: ODPM – Live tables*

As the average speed at which decisions are made is very similar it is unlikely that planning delays are likely to provide a significant part of the explanation of regional variation in output.

**Labour supply** – The availability of a suitably skilled workforce was identified by a number of questionnaire respondents. Whilst unemployment figures may give an indication of the 'pool' of available labour there is no indication of the skills-base of this pool. There is also a reasonable level of mobility of labour in England with over one million recorded interregional migrations in 2002. Although a number of these will be local movements on the ground with some not requiring a change in employment it does give an indication of the general mobility of the population. The main limitation to any migration will be the incomes to cost-of-living ratio, i.e. the workforce, it can be argued, will move providing their standard of living can be maintained; in particular the cost of housing is likely to be influential in this. The supply of skilled labour may be considered from three positions, the total supply nationally, regional differences in the incomes to cost-of-living ratios and differences in regional demand for those skills.

**Population** – Between 1995 and 2002 the population of the East of England rose by four per cent compared to a fall of one per cent in the North West. Figure 7.9 shows the annual change in each region. However, as the average household size fell in both regions the number of households grew adding two per cent to the changes in population. This gave a six percent increase to the number of households in the East whilst the North West grew by one per cent.

**Figure 7.9 Annual population change (North West and East)**
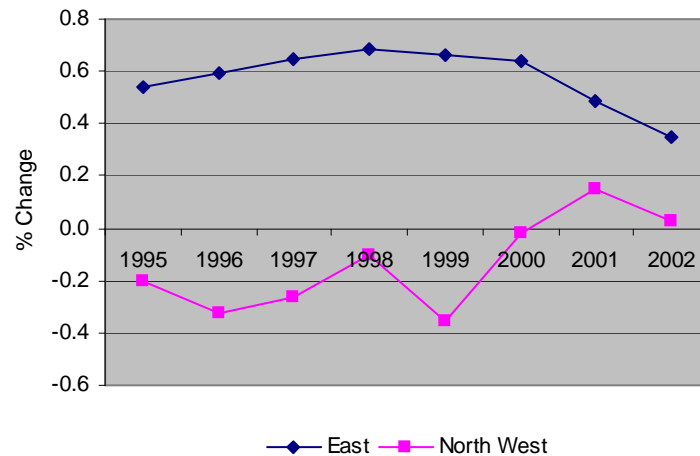


*Source: ODPM (2003)*

Figures 7.10 and 7.11 show annual internal (within the UK) and international migrations for the two regions. The level of internal migration in the North West was negative in all but 2002, whereas in the East it remained strongly positive throughout the period, which is unsurprising as outside of London it had the highest average annual growth.

**Figure 7.10 Annual internal migrations (North West and East)**
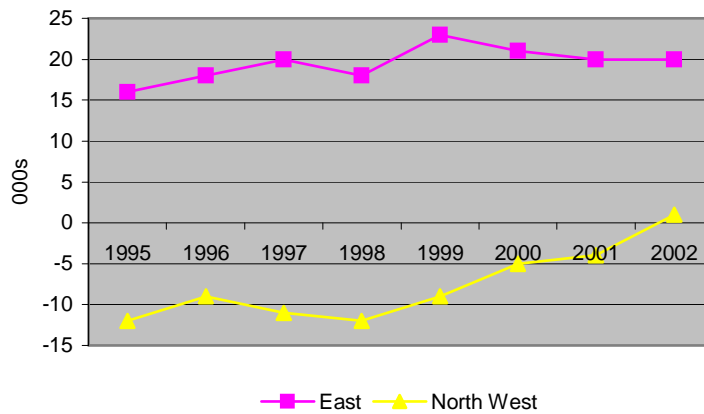
The picture for international migration shows no clear trend, with both regions on average net receivers of international flows between 1995 and 2002. During this period over fifty per cent of population change, in both the North West and East, has come from internal migration.

**Figure 7.11 Annual international migrations (North West and East)**
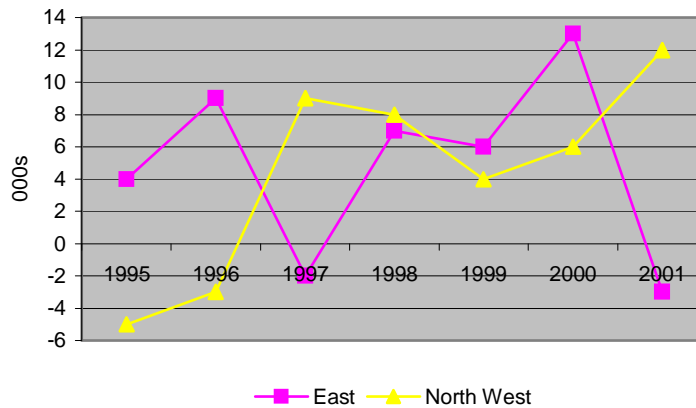
**Economic activity and income –** Figure 7.12 shows the percentage of the population in full-time employment. Again there is a similar trend with both the East and North West rising across the period, 2.2 and 3.3 per cent respectively. Unsurprisingly, therefore, both regions see a fall in unemployment, 3.4 and 3.6 per cent respectively. Interestingly a combination of these figures suggests that the proportion of the population that is economically active fell in both regions, over one per cent in the East. This is possibly due to a change in the proportion of the

population who are in retirement. As before there appears to be a commonality in the trends but with different relative levels.

**Figure 7.12 Full-time employment/ Unemployment**
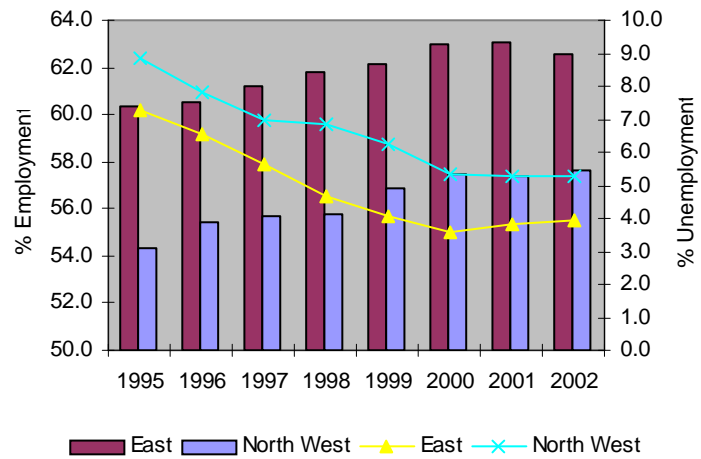


*Source: ONS, Labour Force Survey*

As employment type was suggested during informal interviews house-builders and in the responses to the question on the differences between the North West and East of England as a key indicator of demand. Table 7.16 shows the relative levels of employment in the manufacturing and construction, financial and business services and public sectors.

**Table 7.16 Employment by sector (East and North West)**

|  | Manufacturing &Construction | Public Sector | Financial & Business Services |
|---|---|---|---|
|  | % | % | % |
| East | 19.3 | 22.3 | 19.1 |
| North West | 21.0 | 26.1 | 16.2 |

*Source: ONS: Labour Force Survey*

**Interest rates** – Although there is no regional variation in interest rates there is likely to be differences in the levels of exposure between regions. Tables 7.17 and 7.18 show the average mortgage advance and price to income ratios for new housing in the East and North West. For both regions the ratios are relatively stable between 1995 and 1998 after which they increase, with the price to incomes ratio showing the larger increase, which is similar to the national picture.

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| Table 7.17 Mortgage advance and price to income ratios (East) | | |
|---|---|---|
| | Mortgage | Price |
| 1995 | 2.18 | 2.97 |
| 1996 | 2.17 | 2.98 |
| 1997 | 2.15 | 2.97 |
| 1998 | 2.16 | 3.03 |
| 1999 | 2.22 | 3.26 |
| 2000 | 2.31 | 3.59 |
| 2001 | 2.36 | 3.56 |
| 2002 | 2.49 | 4.01 |

*Source: ODPM (2003)*

| Table 7.18 Mortgage advance and price to income ratios (North West) | | |
|---|---|---|
| | Mortgage | Price |
| 1995 | 2.11 | 2.84 |
| 1996 | 2.16 | 2.79 |
| 1997 | 2.11 | 2.83 |
| 1998 | 2.24 | 2.94 |
| 1999 | 2.20 | 3.02 |
| 2000 | 2.11 | 3.01 |
| 2001 | 2.21 | 3.06 |
| 2002 | 2.30 | 3.32 |

*Source: ODPM (2003)*

The East sees the largest relative increases with the mortgage advance to incomes ratio fourteen per cent higher and the price to incomes ratio thirty-five per cent higher by the end of the period, whereas the North West's increases were nine and seventeen per cent respectively. This suggests that we are likely to see larger relative increases in new dwelling prices in the East. The larger increase in the price ratio would suggest that on average a smaller proportion of the price is being borrowed. Given that in most cases any 'cash' paid towards the cost of a new house comes from equity released from the sale of a previous house this might indicate that the number of first-time buyers to has fallen over the period. Again the 'similar trends at different relative levels' is observed.

It would appear from data in the previous section that household are inclined to utilize any increase in their disposable income on housing, up to a pre-determined limit, rather than save. Therefore, it is worth examining any differences in regional incomes as they may lead to differences in regional demand or prices.

**Figure 7.13 Average annual income**
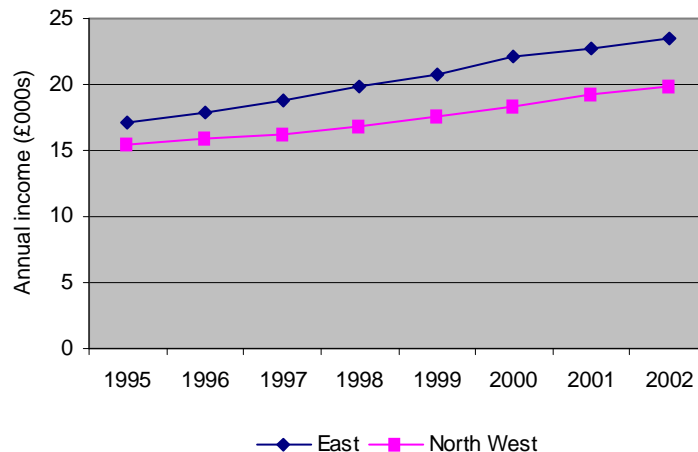


*Source: ONS, Labour Force Survey*

**House prices** – Average new house prices in the North West and East Anglia increased steadily between 1995 and 2002 (shown in figure 7.14), however the average price increased by one-hundred and eighteen per cent in East Anglia whilst the increase in the North West was eighty-two per cent, increasing the average difference from five hundred pounds to just under twenty-seven thousand. Second-hand housing saw a smaller per cent increase in prices over the period in both regions, one-hundred and twelve and sixty-nine per cent respectively, but the price difference, already greater than for new housing, increased to forty-thousand pounds.

**Figure 7.14 Average new dwelling price for the North West and East Anglia**
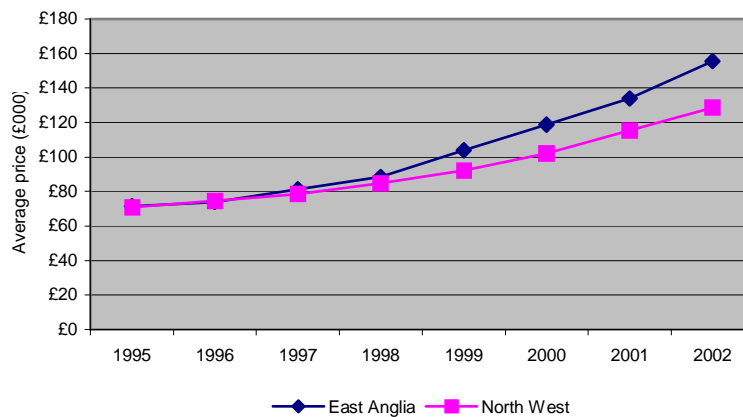


*Source: HMLR*

The new dwelling price premium was double in the North West over much of the period. Both regions followed similar trends, remaining flat until 1998 then rising and falling back by 2002 as with the national trend. The greater difference between new and second-hand prices in the North West is likely to be due to poorer quality in the existing stock. Figure 7.15 shows the average premium for new dwellings in the two regions between 1995 and 2002. It must be remembered that these figures are not adjusted for mix and may therefore have a degree of bias.

**Figure 7.15 New housing premium in the North West and East Anglia**
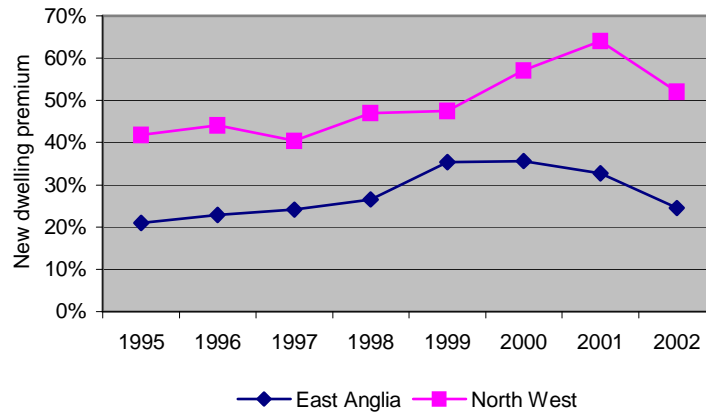
## 6.    Summary and concluding observations

**Supply factors** – There was considerable variation in the quantity of land transactions each year. Based on these figures the only region in which development land is being replaced faster than it is being depleted is the South West. However, it is important to remember that these figures do not take account of the stocks of land that were in place before 1995. It is likely that there has been some under-recording of land transactions that will account for the shortfall, but these figures offer a useful insight into house-builder expectations about future demand if we assume that they are at least proportionate to actual sales.

The regions can be divided into three groups when looking at prices of land for residential development. The first group, which includes London, the East and the South East. The second group contains all of the remaining regions with the exception of Yorkshire & Humberside, which by comparison saw on average increases of half the rate of the second group. Again these are likely to reflect housebuilders future expectations of demand and growth in house prices.

The regions can again be divided into three groups when considering the relative level of planning decisions. The South West, as with the volume of land transacted, saw the highest levels. The South East, East and East Midlands form the second group, with the remaining regions making up the third group. There are some

significant limitations to this data however, which were discussed earlier in the chapter.

There is little variation between the regions with regard to the speed of planning decisions with the exception of London and Yorkshire & Humber, which was on average three points behind the main group, with London three points further adrift. The similarity between the regions and allowing for house-builders ability to 'absorb' delays within the development process suggests that the explanation of regional variation in output is not likely to be as a result of differences in planning delays

The availability of labour with the requisite skills was identified by a number of questionnaire responses. Whilst unemployment figures give an indication of the 'pool' of surplus labour it does not give any indication of its skills base. Whilst there does appear to be an approximate correlation between regional unemployment rates and levels of output, however, this would appear to be a demand-side factor rather than supply-side, which is unsurprising given the relative mobility of labour. There may of course be a national shortage of appropriately skilled labour.

**Demand factors** – As with the most of the supply side factors population growth shows a general gradient from south east to north. It is highest in London followed by the East, South West, South East and East Midlands where the growth has been relatively strong. The West Midlands and Yorkshire & Humber slower growth over the period, with the North East and North West with modest negative growth.

The picture with migration is a little different; here the regions can be divided into two general groups. The first with both positive internal and international migration over the period, the East, East Midlands, South East and South West. The second group, which includes London, along with the West Midlands, North East, North West and Yorkshire & Humberside, has negative internal and positive international migration. Although the reasons for London showing different characteristics from the first group are likely to be different from the others in the second group.

Taking the economic activity rate as a proxy for the 'demand for employment', i.e. those in plus those seeking employment, the south-east to north-west gradient can be seen again. Although London remains the 'centre of gravity' in this case by virtue of the second highest unemployment rate, looking at those in employment alone London falls in the middle of the range.

Looking at average income levels the south-east to north-west gradient is repeated with London again the highest and levels falling towards the North East, which has the lowest.

During informal discussions with house-builders it was suggested that employment types are a factors in deciding where to build. Employment in manufacturing and construction was higher in the more northerly regions, which seen in a more negative light by house-builders. Employment in financial and business services, which was seen as more positive, is highly concentrated around London particularly in the South East. Whilst employment in this sector was not much higher than the average in the East and South West these regions are relatively easier to commute to from London and the South East and therefore likely to benefit from this concentration.

**House prices** – Average prices for both new and second-hand dwellings in England increased steadily between 1995 and 2002 with, on average, new dwellings showing a price premium over second-hand dwellings.

Perhaps unsurprisingly London shows the strongest average rate of growth in prices. The remaining regions showing the south east to north west gradient observed with many of the other variables, indicative of the *ripple effect*. At the end of the period the difference in average house prices had increased between north and south; this may have had some effect on labour mobility, an issue that will be considered again later.

**The East and North West** – Generally for all the factors examined the East and North West followed similar trends but at differing relative levels reflecting the broad north west/south east differences observed for data for all nine regions. This also mirrors the differences in output between the regions noted in chapter four.

**Chapter Eight**

**A Model Of Residential Developer Behaviour**

**1.      Introduction**

This chapter takes forward the findings of the house builder questionnaire and synthesises them with theories of the firm developed elsewhere, predominantly within post-Keynesian and Kaleckian literature. In the next section the findings from the questionnaire responses are re-examined. This is done to pick out the key behavioural characteristics that can then be used to develop a conceptual model of residential developer behaviour. In particular, consideration will be given to whether each of the characteristics are a consequence of the environment in which the firms operate or whether they are an attempt to influence their environment, although in most cases there is likely to be feedback in the opposite direction. The possible effect of these will also be considered on the 'market outcome', i.e. the number of new dwellings completed each year.

The third section looks at theories of the firm developed primarily within the post-Keynesian and Kaleckian economic traditions but will also consider ideas developed within old institutionalist and behavioural theories. The basis and underpinning assumptions of these theories will be considered with specific reference to the key characteristics identified in the previous section. The fourth section looks at the residential development process and the main features of the residential development industry. It considers some of the attributes that any model of a residential development firm must accommodate; in particular it looks for evidence to confirm the observations from the questionnaire and the review of theories of the firm.

The fifth section will provide a synthesis of the evidence gathered from the questionnaires with the theories of the firm and observations of the residential development process in the previous section to develop a conceptual model of residential developer behaviour. This model will be used in chapter nine to develop a realist explanation of residential developer behaviour and subsequently to answer the research question explaining the relative regional variations in private sector housebuilding. This model will also explain some of the *irrational* behaviour noted

in Monk (1999 p6). The final section of this chapter will provide a critique of the model presented in the previous section, considering some of its potential strengths and weaknesses in explaining observed market outcomes.

## 2.       Review of questionnaire evidence

In this section the questionnaire responses are re-examined to pick out and develop the key behavioural characteristics at both the firm and industry level. It will look specifically at each of these and considers whether they are as a result of environmental and structural factors or whether they are more suggestive of firms attempting to manipulate their environment. However, as the firm/environment relationship is a dynamic one, these influences are not necessarily unidirectional and it is expected that some feedback will occur.

The distribution of sample firms show a strong correlation, based on output, with the observed distribution in figure 4.11 showing all NHBC registered housebuilders. With around 50% of total output produced by the top 10% of firms there is strong evidence to support a hypothesis that the house-building industry in England is tending towards oligopoly. The concentration of production over time towards a smaller number of large firms has been noted elsewhere, for example Gillen (2004a) and Wellings (2006). A number of hypotheses have been put forward as possible explanations for this phenomenon such as takeovers and mergers in order to consolidate land holdings (Hooper, 1994; Wellings, 2006). Further hypotheses will be presented in section four of this chapter as it is argued that this is a key behavioural attribute of all firms (not only those in the housebuilding industry) and is an example of firms attempting to influence conditions within their environment.

For most firms there was a stronger long-run focus, with *growth of the firm* and *long-run profit* being the key targets. This long-run focus is supported by responses to other questions. This opens the possibility of housebuilding firms accepting neutral or negative profitability in the short-term, as long as there is the anticipation of profitability 'on average' over a longer trading period or of future profits which compensate for the current cost of investment or losses. This again is a key aspect of the psychology of firms and will be discussed in more detail later. This is likely, to

some extent, to smooth out some of the peaks and troughs in production as firm take a longer view seeking to keep production 'ticking over' even when demand falls and not always increasing output to correspond to demand increases. This phenomenon has been noted elsewhere, for example, within labour economics where theories of 'labour hoarding' have been developed (Nickell, 1978). Some of the responses to the questionnaire also identified this need to 'stabilise' production; statements such as the "*requirement to grow pre-tax profits progressively*" and "*investor strategy and profit targets*" are indicative of this.

As already noted the responses to questions on target setting and decision-making hierarchies support the hypothesis of Ball (2003) that the benefits of size over managerial diseconomies of scale reach its limit at the regional level. It is important though to remember the caveats regarding accepting administrative areas as good proxies for Housing Market Areas. However, there is a possibility that housebuilders find these predefined areas useful terms of reference themselves as much of the available data on *factors of demand*, e.g. population growth, unemployment rates, etc., are reported on this basis. Here then we have the possibility of the 'environment' conditioning the structure. Alternatively of course it may be that the 'regional' structure of many firms is merely a convenient configuration administratively and that firms perceive demand at a much more local level, looking at locations where there is a correlation of expected future demand and available land with the likelihood of planning permission.

The difference in responses between the two groups of firms, (*350 or more completions per annum* and *less than 350 completions per annum*) particularly the factors influencing supply, highlight one of the advantages that the larger group of firms gain from increasing size. Most large firms identify land-supply/availability as the key long-term issue, whereas smaller firms were more likely to identify planning. This demonstrates one of the advantages that larger firms gain from greater land holdings. With a larger land holding firms are active in all stages of the development process simultaneously. They are continuously looking for and identifying new development opportunities, applying for planning permission, developing sites, etc. This allows them to develop expertise in these areas with employees specialising in the different aspects of the development process.

Smaller firms, however, tend to have a more iterative development process with less opportunity for specialisation. This also leaves them more susceptible to *hold-ups* in the process, e.g. planning delays, where a significant delay at any one stage of the development process can significantly affect the rate of completions. They have smaller land holdings with a lower proportion having planning permission, which means they are less able to take advantage of increases in demand. However, just over two thirds of all firms indicated that they would be able to respond to demand changes in less than three months, which suggests that most firms are operating below full capacity. The responses suggest that smaller firms are under greater pressure to develop land as soon as possible after purchase; this is probably due in part to greater financial pressure identified in chapter five, section 3.

The majority of firms also identified 'demand' factors as important in setting production targets. This suggests that levels of demand, or at least firm's expectations of demand, will provide a significant part of the explanation of housing output. This *demand-side* focus was again identified by housebuilders when asked about the differences in relative output between the North West and East Anglia; typically economic outlook, demographic changes and employment were identified. When asked about their individual output supply-side factors were more dominant. In particular most firms identified labour supply as the most important factor in adjusting the rate of production.

The dichotomy between the perception as to the influences on output at an aggregate level for a region, mainly demand factors, and the influences on the output of an individual firm, mainly supply factors, is an interesting one. It could be argued that this implies there is little or no shortfall between the amount of new housing demanded and that supplied, at least at some level of aggregation. It would then follow from the same evidence that although house builders may not see significant shortfalls in aggregate output but at an individual level, they would be prepared to supply a larger proportion of the total if they had access to additional factors of supply.

It does not follow from the preceding argument that 'need' for housing is necessarily fully satisfied. As Oxley (2004, p19) argues the "*need for housing is a socially*

*determined requirement for accommodation. A household may have a need for housing but not have the money to demand that housing*", i.e. they are demand constrained. This constraint is determined by the general income and wealth distribution of the population and the total supply of new and second-hand housing. The determination of price, and the affordability, of housing is not a question that is directly addressed by this research project, however it does overlap the project and will require some discussion.

Four key characteristics have been identified in this section. Two of these, a stronger long-run focus and differences in the perceptions and behaviour of firms of differing sizes, can be considered internal to the firm. It will be shown later that the longer-term focus, in particular *growth of the firm*, is driven by the advantages gained by the benefits of industry relative 'size'. This behaviour gives rise to the pyramidal industry structure noted earlier in chapter four and from the questionnaire responses, the third characteristic. The final observation is the perception by residential developers that the level of output, at a regional level at least, is determined primarily by demand-side factors. In section five these four key characteristics will be integrated into the conceptual model of residential developer behaviour.

## 3.    Post-Keynesian and Kaleckian theories of the firm

This section considers a number of aspects of theories of the firm developed within non-mainstream economics. It looks at various theories, or parts of theories from post-Keynesian, Kaleckian, old institutional and behavioural economics that can be used to explain the key characteristics of residential development that were identified in the previous section. These 'schools of thought' were considered the most appropriate areas of focus as their methodological approaches coincide closely with the realist methodology chosen for this research project.

The primary objective of the firm has been the subject of extensive debate both within post-Keynesian and other non-mainstream schools of thought in economics. Various goals have been put forward, for example 'power' (Galbraith, 1972; Lavoie, 1992), 'growth' (Eichner, 1979) and 'long-run profit' (Skott, 1989). Lavoie (1992, p99) contends "*that there is no reason to presume that different firms will behave*

*identically,*" in pursuing their objectives and it can be argued further that the supplementary objectives of an individual firm may vary both spatially and temporally. Robinson (1977) argued that it is impossible to reduce the motivations of '*multi-dimensional*" organisations into a single objective or common list of objectives. The argument here is that the reason that there is little agreement on which of these is the primary goal is that they are all secondary to a further overriding objective. The primary objective of all firms is its long-term survival, as Galbraith, for example, argues "[f]*or any organisation, as for any organism, the goal or the objective that has pre-eminence is the organisation's survival*" (cited in Lavoie, 1992 p100). Success in the pursuit of the chosen supplementary objectives gives the firm some level of control over its environment, which is crucial to achieving this primary objective.

The reason a firm strives for 'long-run profitability' or 'growth' or 'power' is to gain greater control over its environment, through influence over the market, its competitors or the political and social structures that it faces. By exercising control over these the firm reduces the uncertainty it faces and by reducing uncertainty the firm increases its chances of long-term survival. Uncertainty is defined as where:

> "*the probability of an outcome is unknown, when the value of an outcome is unknown, when the outcomes that can possibly result from a choice are unknown, or when the spectrum of possible choices is unknown.*" [This can be distinguished from risk] "*where each choice leads to a set of specific outcomes, the value of which is known, each outcome being associated with a specific probability*" (Lavoie, 1992 p43-4).

By reducing uncertainty it increases the chances of its long-term survival. For example, firms face uncertainty over the future actions of their competitors. By controlling a greater market share, the firm seeks to reduce the impact that other firms may have on its activities and therefore the uncertainty it faces over future demand and land holdings.

Survival of the firm is also important to the employees as they face uncertainty over replacement employment if the firm fails. It is argued here that the current employees

and shareholders *are the firm* as it is currently constituted and have an interest in the firm's long-term survival. The managers of a firm 'invest' time and effort in order to develop the often very specific skills necessary to further their careers; these can be regarded as 'sunk' costs and may not be transferable to alternative employment. They are therefore motivated "*in making administrative decisions*" to prefer "*policies that* [favour the] *long-term stability and growth of their enterprise to those that* [maximise] *current profits*" (Chandler, 1977 p84).

It has been further argued that 'even if' firms were able to amass all the relevant information regarding future demand and the responses of their competitors to this demand it is improbable that they would have the cognitive ability to deal with it, a concept referred to as *bounded rationality* (Simon, 1961). The idea of bounded rationality is that although the intention is to act rationally, often less than 'optimal' decisions are made due to the limited ability to deal with all the available information, which may also offer conflicting signals.

Faced with these two factors the argument is that firms develop strategies. These strategies can, where the situation or problem is a simple one, be simple rules-of-thumb, routines or habits; alternatively for more complex problems decision makers may use a more procedural method, where problems "*are decomposed in hierarchical manner and tackled sequentially*" (Earl, 1995 p68). These strategies are followed as long as the outcomes achieved are more or less satisfactory. When the outcomes are unsatisfactory the rule-of-thumb, routine or procedure is changed until a satisfactory outcome is once more achieved. It is not possible for the firm to know which of rival strategies would have produced the 'optimum' outcome, i.e. a firm cannot decide both to develop and not to develop a site at a particular time in order to compare outcomes, therefore, there is a tendency towards *satisficing* behaviour.

> "*Managers ... seek a "satisfactory" route (satisfice) based on several objectives and constraints, and taking account of the limited information at their disposal.*" (Herbert Simon, cited in Beaud & Dostaler, 1995)

Firms base their expectations of future demand on current levels of and trends in demand. As Keynes wrote, "[firms] *substitute for the knowledge which is*

*unattainable certain conventions, the chief of which is to assume … that the future will resemble the past.* [The] *usual practice is to take the existing situation and project it into the future, modified only to the extent that* [they] *have more or less definite reasons for expecting change*" (cited in Meeks, 2003 p23). The greater the degree of recent change, or instability, in demand, or the factors thought to affect demand, the larger the degree of uncertainty faced by the firm.

Eichner (1976) identified four important characteristics of the modern firm (Lavoie, 1992 p95), of which the observations that a firm's *marginal costs are approximately constant* and that it *operates in an oligopolistic industry* are of particular relevance here. For most post-Keynesian theories the first of these is partly derived from the use of an L shaped average cost curve. However, Kaleckian theory adopts the position that it is the short-run that is important when deciding pricing and therefore only variable costs are important, which gives a horizontal cost curve. When either of these are combined with the fact that most firms are operating below full capacity results in firms gaining from constant returns to scale in the short-run and potentially, in the long run, increasing returns to scale.

Kalecki (1954) in chapter 5 *Cost(s) and Prices* suggests that there are two '*broad groups*' of goods in terms of the way in which prices are determined. In the first group prices are *demand determined*. These are primary goods (raw materials) in which supply is fixed or slow to adjust, at least in the short-run. In the house-building industry 'development land' is the most obvious example. The other group is manufactured goods (Kalecki uses the term 'finished goods'); where prices are *cost determined*. It is Kalecki's model of pricing behaviour for this second group that is of interest here.

Weston (2002) discussed the similarities between Kalecki's (1954) model of pricing behaviour and that displayed by house-builders (see for example Gerald Eve *et al*, 1992 and Golland & Thrower, 1999 for a useful exposition of these practices). Whilst there are some differences between Kalecki's model and the price setting of the residential development industry there are also some striking similarities and it offers some useful insights into their activities. Mark-up pricing is not new to economics; such ideas have been discussed since the 1930s. Gardiner Means, an

'old' institutionalist, in the United States discussed the prevalence of *administered pricing*' (Means, 1936), and in the United Kingdom Hall and Hitch's (1939) observation of '*full cost*' pricing are two early examples. Since then others have examined the phenomena including Ahmed and Scapens (2003), Andrews (1949), Blinder (1991 & 1994), Downward (1994), Lee (1986 & 1994), and Shipley (1981). Although the concept is known by many *nom de plumes* they are all variations on a theme, essentially cost-based pricing rules.

In Kalecki's model price fixing by the firm is determined by average unit costs (Kalecki refers to these as *prime costs*) and the prices of other firms producing similar goods. The model is formally; $p = mu + n\bar{p}$, where *u* is the unit cost and $\bar{p}$ is the weighted industry average price. The coefficients *m* and *n* "*characterise the price fixing policy of the firm*" and the degree to which the firm is able to exercise monopoly power, and importantly "*in the process of price fixing it will not be assumed that the firm attempts to maximise its profits in any precise sort of manner*" (Kalecki, 1954 p).

Whilst this research project is primarily concerned with production not pricing decisions, the model offers a useful starting point from which to consider how differences in the size of firms and industry concentration may impact on production decisions. Considering $n\bar{p}$, pricing decisions of house-builders will depend upon the degree of monopoly the firm has in the local market. The higher the firm's proportion of local development activity, the greater the degree of monopoly and therefore the greater the control over pricing, as Kalecki suggests,

> "*a firm [representing a substantial share of the output] knows that its price p influences the average price $\bar{p}$ and that, moreover, the other firms will be pushed in the same direction because their price formation depends on the average price $\bar{p}$. Thus, the firm can fix its price at a level higher than would otherwise be the case.*" (Kalecki, 1954 p)

Importantly decisions on pricing and output levels, in Kalecki's model, are separate administrative decisions. Price is set in relation to costs and monopoly power; output

levels are based on expectations of 'normal' demand as in post-Keynesian theory. That is not to say that the decisions are completely independent but that they are not an automatic response to changes in the other. If Kalecki's model is to be used as a basis for a model of housebuilder output there are two initial questions that must be answered; (a) can the house-building industry be usefully characterised as oligopolistic (Kalecki's model is based on this assumption); and (b) can differences be observed in the behaviour of firms with different relative levels of output? The answers to these questions will be assessed in the next section and section five where the model of residential developer behaviour is developed.

Thus if a firm controls a significant proportion of the available development land within a local market area it is able to influence the level of output in that area and through this the pricing of new housing. An important point here is that the degree of monopoly control will also vary dependant on the 'substitutability' between new dwellings and those from the existing stock; that is, if there is a high degree of substitutability between the two the degree of monopoly is reduced.

The review of non-mainstream economic theories undertaken here has identified a number of important features that should be considered when constructing a model of residential developer behaviour. Critical to the development of the conceptual model is an understanding of the 'Keynesian' uncertainty that causes firms to develop strategies and conventions in order to mitigate this. Two of the features correspond closely to the key characteristics identified in the previous section that established the key behavioural characteristics of the residential development firm: firstly the focus by firms on the longer-term and secondly the differences in the behaviour of firms of differing sizes. It is argued that advantages are gained from relative size within an industry, particularly in reducing the uncertainty faced by the firm. This behaviour gives rise to the oligopolistic industry structures that is the basis for Kalecki's model of pricing behaviour. The final observation is the separation of pricing and output decisions, where both are administrative assessments based on the longer-term strategies of the firm rather than automatic responses to changes in market conditions. These features will be integrated into the conceptual model of residential developer behaviour developed in section five.

## 4.    Residential development

This section looks at the residential development process and considers some of the attributes that any model of a residential development firm must accommodate. It looks for evidence of the structures, conditions and behavioural attributes that will confirm the observations from the questionnaire and the review of theories of the firm. In particular it seeks to confirm the existence of conditions of uncertainty and strategies to deal with this.

Residential development can be divided into four stages; land purchase, design and planning, construction and sales & marketing. The last two stages often run concurrently where dwellings are sold *from plan*, reducing the total development time and the uncertainty faced by the residential developer and also improving cash flow. These stages are broadly reflected in the internal structure of residential development firms; this is more so in larger firms where specialisation occurs to a greater degree. Whilst the primary interest of this research is the outcome of the residential development process, i.e. the number of completions for a location at any point in time, because housebuilding is a process in which the sale of the completed dwelling is the last in a series of 'linked' events, an understanding of each of the stages, how they are linked and the potential effects they may have is critical to understanding the causal processes. It is therefore pertinent to consider how decisions are made at these earlier points and their potential impacts on the outcome, in term of the volume of dwellings constructed, of the development process.

The development process occurs 'through time' and for an individual firm can be both a consecutive and concurrent process. That is, for an individual site it can be thought of as a consecutive set of events starting with the land identification through to the final sale of the dwellings. At the same time within an individual firm each of the processes may be occurring concurrently. This is especially likely to be the case with larger firms where they have specialised staff that are responsible for only one stage of the process. There is also the need for firms to maintain cash flow and a continuous development process will assist this. Once a site has been purchased and the appropriate planning permissions have been obtained the developer can vary the speed at which a site is developed. It is possible for the developer to vary the number

of starts, the rate of construction and therefore the rate of completions and therefore the rate at which completed dwellings reach the market.

Land purchased for development is divided into two types, strategic and current. Strategic land is that bought for addition to a developer's land bank. It will be bought with a view to potential demand at least two years hence and potentially much longer, especially if it is outside the 'Local Plan' area. In some cases land is not developed by the purchaser but sold to or traded with other developers; larger sites are often built-out by several developers reducing uncertainty. Current land is that designated for development over a much shorter time horizon. It is much more likely to be within the Local Plan area or in a location that the developer feels they can 'make a case' for development. Here the average time from purchase to sale of the completed dwellings is normally less than two years.

Developers use residual valuation to determine the maximum price that they are prepared to pay for development land (Oxley, 2004 p28). This involves estimating total revenue from a site and deducting all expected costs, including an allowance for required profit. Once a suitable site is identified the developer negotiates with the landowner based on the residual calculation; the final price paid for the land will depend upon local market conditions and the relative bargaining positions of the developer and landowner (Oxley, 2004 p134-6). Factors such as current and expected future house price movements and the level of local demand for both development land and new dwellings will influence this (Gerald Eve and the Department of Land Economy, 1992).

When developers begin the design and planning stage of the process they are looking on average at a time horizon of just over one year to completion and sale. The level of development activity at this stage is likely to be heavily influenced by the current levels of demand as well as expectations of future demand. Their plans are of course moderated by the current state of their land holding and the anticipated time required to gain planning approval. Any large increase in the number of applications is likely to result in increased planning delays as local authorities have fixed, at least in the short-run, resources to deal with these. This often leads developers to view the level

of planning approvals as fixed. It is not unusual for developers to allow four months or more for negotiation with the planning authority and planning approval.

When starting the construction of individual properties developers are looking at expected demand at a time horizon of about six months to one year. Data from the NHBC *Private House-Building Statistics* (2002) publication indicates that the average '*time taken to build*' for the English regions was 10 months in 2001/02. Again the level and quality of the land flowing into their land banks and the rate of planning approvals will moderate this; also the availability of skilled labour, materials and capital will have effects. The rate of completion of the dwellings will reflect emergent demand, both in terms of sales and sales enquiries, and as before the decisions made in the earlier land purchase and planning stages and the number of starts.

The 'final' stage of the process is the marketing and sale of the completed dwelling. This stage is often combined with the later phases of the construction stage. This 'selling from plan' where the developer agrees the sale with the purchaser before the dwelling is complete, in some cases before the construction phase has begun, has two benefits. Firstly, and most importantly, it reduces the uncertainty faced by the developer; in agreeing the sale at an earlier stage the developer is better able to time the development of the site. Secondly as the sale will occur shortly after completion the developer's cash flow is improved.

The critical feature of residential development established here is not just that production occurs 'through time' as it does with all types of production or manufacturing but that it occurs over an extended period during which the demand conditions can have altered significantly (Ball, 1996 p28). As a result of this residential development firms are faced with real uncertainty over future demand; the cost of financing unsold stock can be critical, especially for smaller firms who do not have ready access to the stock market.

## 5.      A Theory of the Residential Developer

This section develops a conceptual model of residential developer behaviour that uses as a starting point the evidence gathered from the questionnaires, the review of theories of the firm and observations of the residential development process in the previous sections. This model will be used in the next chapter to develop a realist explanation of residential developer behaviour and then to develop an explanation of relative regional variations in private sector house building.

It is worth reiterating at this point the key characteristics and features that have been uncovered in the preceding analysis as these will be the main components of the model. These are:

- Expectations of future demand are based on current levels of and recent trends in demand and are modified to take account of any probable changes;
- As production occurs through time residential developers face real uncertainty over future levels of demand;
- Strategies and conventions are developed and established to cope with uncertainty;
- The residential development industry is tending towards oligopoly and a firm's ability to realise its goals are affected by its relative market share.

In addition there are some key features of housing and the housing market that must be considered when developing a theory of the residential development firm:

- There is a basic need for shelter, i.e. housing;
- Housing is a durable good;
- Housing is spatially fixed;
- The location as well as method of construction is regulated.

The durability of housing gives rise to two further features that are of importance:

- There is a significant second-hand market.
- Housing has an investment as well as consumption function;

Any theory must accommodate these features, and their effects, if it is to provide a robust explanation of the housebuilding process and have the potential to explain spatial variations in residential development.

Although all goods take time to produce, the timescale and the locational specificity of housing underlines the uncertainty faced by the residential developer. As a consequence of the time taken to purchase and develop a site, residential developers face a significant degree of uncertainty over the future levels of demand (Ball, 1996 p28). Given this it is impossible for house-builders to make decisions about future demand with an unqualified degree of certainty.

A model of residential developer behaviour then, needs to incorporate these characteristics and features, with current output based on expectations of future demand, where these are some combination of recent levels and trends in demand. These expectations are then moderated by the degree to which the firm is certain that the recent/current levels of demand will continue. It must include the strategic goals of the firm, including the personal goals of the management team. Finally it must recognise the potential for differences in behaviour between firms of a different size.

The model proposed here is:

$$o = (\varepsilon \upsilon) + (n\overline{o})$$

Where:

$o$ = The residential developer's output;

$\varepsilon$ = The expected level of demand;

$\upsilon$ = Degree of uncertainty faced by the firm;

$n$ = Strategic goals of the firm;

$\overline{o}$ = Industry weighted average output within a given location.

The residential developers output ($o$) is equal to the firms expected demand ($\varepsilon$) moderated by the degree of uncertainty faced by the firm ($\upsilon$). A 'premium' output is

then added that is based on the strategic goals of the firm ( $n$ ), which is moderated by the firm's industry weighted average output ( $\bar{o}$ ).

The research aims did not set out an intention to operationalise the model, although it may be possible to gather data that captures the main factors argued to influence residential developers' output and even to suggest reasonable proxies for some of the behavioural variables. It is argued that it is still unlikely to produce useful results, as there are significant data gaps for some of the behavioural variables and some of the non-behavioural are likely to be considered too 'commercially sensitive' for firms to disclose. As a behavioural model the purpose was to reveal the motivating factors in output decisions to assist in developing an explanation of regional variations in output.

In this model current levels of and recent trends in demand factors such as demographic changes, income levels and distribution, interest rates, lending policies, unemployment levels and general consumer confidence together with recent levels of demand enter through the firm's expectations of future levels of demand ( $\varepsilon$ ). Demand expectations are the nucleus of the output levels formation in this model in which the other aspects act as moderators. However, the relative importance of the demand factors will vary between firms and locations, as evidenced by the responses to the questionnaire.

There are two aspects to the level of uncertainty faced by the house building firm. The first is the uncertainty over future levels of demand, which increases as the magnitude of recent change or instability in demand factors increases, reducing future 'predictability'. The second aspect of uncertainty is that of competitor actions. This increases as the firm's share of production within a given location falls; as a firm's share of production falls the influence of competitors' actions has a greater impact, increasing uncertainty faced by the firm. In the model the degree of uncertainty is represented by $\upsilon$, which has a value between one and zero; where one represents 'absolute certainty' and zero 'no confidence' in predicted demand. As uncertainty increases the value of ( $\varepsilon\upsilon$ ) becomes smaller and consequently $o$ (the firms output) reduces.

The second part of the model, $n\bar{o}$, is similar to $n\bar{p}$ in Kalecki's pricing model. The strategic goals of the firm are represented by $n$. As argued earlier these goals vary between firms and may vary both spatially and temporally for an individual firm. It is further argued that the primary objective of a firm is its long-term survival, which is supported by other supplementary goals such as the *growth of the firm* and *long-run profit*, which were identified from the responses to the questionnaire.

The ability of the firm to realise the strategic goals is dependant upon its ability to influence its local market conditions. This enters the model through $\bar{o}$, which can also be characterized as the degree of monopoly in any given location. For the residential development industry the degree of monopoly can be considered in regard to both the weighted average output within a given location and the extent of the firm's control of the development land within that location. As development land is a key factor of production and is locationally fixed it can have a disproportionate influence compared to the other factors; it is therefore essential that it is included in the model.

The impact of $n\bar{o}$ will depend upon the degree of monopoly the firm has in the local market. As the firm's share of local development activity and control of development land increases ($\bar{o}$ increases), the firm enjoys greater market power and its ability to realise its strategic goals enhances. The increased control over market conditions has an additional benefit for firms as it also it reduces the level of uncertainty; as a result both $o$ and $\bar{o}$ increase and as a consequence the firm's market power increases further.

## 6.    Critique of the model and conclusions

This final section of the chapter will provide a critique of the model presented in section five. It considers some of the potential strengths and weaknesses of the model in explaining regional variations in market sector housing production. In the next chapter the theory of residential developer behaviour presented here will be used to explain relative regional variations in production and explain that these are a

consequence of behavioural responses by firms to environmental and structural forces.

This conceptual model of residential developer behaviour has been constructed by synthesising primary data collected from survey responses with the analysis of existing general theories. The model incorporates the effects of uncertainty central to much of Keynes' work and develops further some of the ideas in Kalecki's 'pricing' model, in particular it *picks up* the idea that a firm adjusts its behaviour as its market share changes. It assimilates Keynes' theories of '*expectations*' or '*animal spirits*' (Dow and Hilliard, 1995) into the analysis of the survey responses and shows that residential behaviour is not dependent on macroeconomic factors in a mechanical sense, but that it is a more discontinuous and indistinct response to stimuli, which is heavily dependant on the context. The underlying assumptions do not deny that spatially, price and new construction patterns tend to overlap to a partial extent; however, association is not the same as dependence. In the model a firm's output involves an interaction between the uncertainty and the execution of own strategy, the latter affecting the former recursively. The greater the power to influence the market, the lesser the uncertainty faced by the firm.

Whilst the model does not have any direct input from the supply side these issues can enter indirectly through the formation of demand expectation or strategy and may even influence the outcome via land-holding. Responses to questionnaire survey indicate that house-builders believe that the planning system limits the overall supply of land, affects the spatial distribution of development and creates delays in the development process. Comments such as "*our ability to adjust production has been mainly affected by* [our ability to secure] *the right planning consents in a timely fashion*," (respondent 006) are typical of this. The argument here is that whilst the there may be some short-term 'distortion' of output in terms of total volume, the planning system is responsive to demand and places little long-term constraint on the volume of dwellings constructed. Analysis of the questionnaire responses indicate that any short-term changes in demand can be met from current land holdings, although smaller firms may be able to be less responsive.

Research by Bramley *et al* (1995) confirms this and suggests that even with large-scale additional land release through the planning system the increase in owner-occupation would only be between 3-6%. They suggest that increases in the release of land are more likely to lead to reductions in the densities of development than increases in the total output. Although the structure of the planning system is determined via policy, once in place it becomes endogenous or part of the system. Developers adjust their behaviour to the given set of 'rules'. If the planning system delivered quicker decisions then developers would be able to reduce their land holdings, but it would not have an effect on the level of long-term output, as this is demand determined.

**Chapter Nine**

**Explaining Regional Housing Production: A Realist Perspective**

## 1.      Introduction

This chapter provides a synthesis of the model of house-builder behaviour developed in the last chapter with the secondary data examined in chapter seven on the English housing market and the factors that are hypothesised to influence demand and supply for new housing. In the next section the model of residential developer behaviour presented in chapter eight is reviewed and consideration is given as to how to move from a micro model of individual firm decision making to an explanation of the observed output of all firms within a region. The following section explores in more detail the aggregate data from all nine regions presented in chapter seven. It begins to look for the factors that most closely correlate with completions and how they influence the level of output within a region. In section four the more detailed data on the East and North West of England are examined, including some temporal as well as spatial observations. In the following section the 'causal chain' is developed; in this section the issue of 'cause and effect' is confronted and an explanation of regional variation in private sector completions between 1995 and 2002 is argued. In section six the model of residential developer behaviour is revisited and used to explore the explanation of regional variations in output. The final section draws together the evidence presented in the chapter and considers the strengths and weaknesses of the explanation offered.

## 2.      Review of the model

The model of residential developer behaviour put forward in the previous chapter is one of individual firm behaviour. However, this research seeks to explain regional variations in private sector production in England. The problem then is how to move from a micro model of individual firm decision making to an explanation of the observed output of all firms within a region at a point in time.

To do this each component of the model will be re-considered to see whether the characteristic it attempts to capture can be applied at a more aggregate level; and if

not then what modification if any is possible. This re-developing of the model based on an understanding of the motivations of individual firms will create a general model of industry behaviour, from which it will be possible to move to an explanation of regional output. This achieved a comparison of regional outputs and the determining factors will provide the answer to the research question.

In the model the firm's output is represented by $o$. For the industry this could be represented by $\Sigma o_i$, or $\Sigma o_r$ for a particular region. Data for these are available and examined in detail in chapter four, section four of this thesis. There are potentially some problems of aggregation other than those considered already in chapter four. As noted in chapter four some regions have larger outputs of smaller dwellings such as flats and maisonettes, whilst others have a higher proportion of detached properties. Whilst this may be as a result of differences in demand, such as a higher proportion of smaller households or the availability of development opportunities, it is likely to distort the results of any analysis.

For example, two regions may have the same population but region *a* has a mean household size of 2.5 and region *b* a mean of 2.0. This would result in a demand for dwellings twenty-five per cent higher in region *b* than in region *a*. Therefore it is necessary to weight the measure of output used in this research, completions per thousand population, for differences in mean household size between regions.

At the same time, although not directly addressed by this research, the differences in the type of dwellings developed are likely to be, to some extent, influenced by the demand for those types of dwelling. However, the relationship is not unidirectional. In some regions where land available for residential development is at a premium, for example London (see Table 4.6), the average dwelling may be smaller or more flats and maisonettes are built; this in turn may have an influence on household formation. This will be both in terms of the number and size of households. Some account of the probable effects of these will have to be made in the conclusions of the research.

The first explanatory factor in the model is *expectations*, represented by $\varepsilon$. The rationale for this was based on Keynes' assertion that firms will base their output on expectations of future demand and that firms assume that the past is a good indicator of the future unless they have specific reasons for anticipating a different outcome (Meeks, 2003 p23), such as a likely change in government policy. It is further asserted here that this applies to *trend* changes as well as to constant levels of demand. For example, if the recent out-turn has been a small increase in demand over the period then the firm's expectation will be that this will continue. According to the model, firms see past levels of, or trends in, demand as a good indicator of future levels of demand. Therefore it is argued here that previous levels of, or trends in, sales are a good indicator of future expectations. However, it is not assumed that firms automatically attempt to meet, or are capable of meeting, demand to the same extent year-on-year. Other intervening factors may influence this. Given the 'realist' philosophy of this research, it is not suggested that past sales can be used to predict future levels of output, but rather the data can be used to develop a *retroductive* explanation of output. The issue of a firm's willingness and/or ability to meet current levels of demand will be discussed further later in this chapter.

The second explanatory factor in the model is *uncertainty*, represented by $\upsilon$, which reflects the degree of uncertainty faced by the firm. The rationale for including uncertainty in the model is based on the arguments developed in section three of chapter eight and is drawn mainly from post-Keynesian literature (Lavoie, 1992 p44). As with expectations, there are problems with aggregating individual firms uncertainty. Again this is best overcome by looking for a good proxy that can be taken as reflecting uncertainty. However, it is improbable that a single *variable* can be identified that will provide a close substitute for, and capture the movements in, uncertainty. It is more likely that a combination of a number of factors would be a better indicator; it will be argued later that it is the recent volatility in certain factors that provides this.

The third variable in the model is $n$, the strategic goals of the firm. As with the first two variables this captures a behavioural characteristic for which no directly comparable data exists. However, the responses to the survey questionnaires provide

a basis upon which a good proxy can be based. Table 5.3 in chapter five identifies two goals of the firm that were on average rated as most important; these were the *growth of the firm* and *long-run profit*. These two motivations are closely related as one of the ways in which a firm can increase its profit levels is by growing, the other being to use current resources more intensely. Although this may have the effect of improving the rate of return rather than increasing absolute profit levels. Growth can be achieved in two ways, firstly by increasing production, i.e. building more dwellings, which can be accomplished within current markets given sufficient demand and factors of supply or by expanding into new markets. The second option is to achieve growth through acquisitions and mergers. It is therefore argued here that it is reasonable to assume that 'on average' firms will choose to increase production given sufficient demand, or confidence in that demand emerging, and the availability of supply factors.

The final variable in the model is $\overline{o}$, the firm's industry weighted average output within a given location. When aggregating all firms within a region this variable effectively becomes equal to one and therefore drops out of the model. However, it is possible that the differing concentrations of production within a region will affect regional output. Unfortunately there is no published data on this, so the possible effects can only be debated, although their potential effect should not be ignored

There are three possible measures of expectations based on output; *starts*, *completions* and *net starts*, all of which were examined in chapter four. According to Gillen and Golland (2004) starts are a better indicator of the activity within the industry as the decision to commence development can be critical to a firm's survival, whereas the rate of completions can be timed to coincide with emerging demand, which can lead to varying lag times between starts and completions. Each of these reflects a firm's expectations of demand on different timescales; starts at a longer horizon, typically nine months, and completions at a shorter horizon possibly less than one month.

As contended earlier, net starts, originally proposed by Ball (1983 p106-7), provides a superior measure than either starts or completions on their own. The reason for this is that it captures the level of 'work in progress' and as such whether residential

developers expect future demand to increase or fall. If 'net starts' is negative then a fall in demand is expected, conversely a positive value indicates the expectation of an increase in demand.

The aim of this research is to explain completions and therefore it is pertinent to consider those factors that are likely to affect emerging demand. However, dwellings cannot be completed unless they have been started, so factors informing the longer horizon in an earlier period must also be considered.

## 3.      Explaining regional variations in output

As suggested earlier the choice of measure for housing output can depend on the perspective of the user and the purposes for which the information is required. Chapter four examined a number of potential measures that could be used in this research. The specific measure of market housing production that this research will explain is 'completions per thousand head of population'. Spatially this will be done at the regional level. Table 9.1 shows completions per head of population for each of the English regions.

**Table 9.1 Average private sector completions 1995-2002**

|                         | Completions per 000 head population |
|-------------------------|:-----------------------------------:|
| East                    | 3.2 |
| East Midlands           | 3.3 |
| London                  | 1.4 |
| North East              | 2.4 |
| North West              | 2.4 |
| South East              | 2.6 |
| South West              | 2.9 |
| West Midlands           | 2.3 |
| Yorkshire & Humberside  | 2.5 |

*Source: Housing Statistics 2003*

As there are population differences between regions, it would be expected that, other things being equal, the region with the largest population would have the highest level of output. The rate 'per head of population' was therefore used to give relative comparisons between regions, as there are significant differences in the populations of the English regions. The average completion rates vary from 3.3 in the East to less than half that in London at 1.4. The East Midlands has a rate similar to the East, one point lower, with the South West a further three points lower. The following group containing the remaining regions with the exception of London and have rates

ranging between 2.3 and 2.6. The East and the North West provide a useful contrast to each other and will be used as a case study later.

The examination of the regional housing market showed some valuable contrasts. However, these did not always reflect the north/south divide that is frequently cited as a useful characterisation. Overall a north-west/south-east grouping, with a line drawn from the Bristol Channel to the Wash, appeared to be the most consistent. The East and West Midlands are bisected by this and reflect the 'instability' of their inclusion in one group over the other. In some cases however the differences would be better characterised as a continuum radiating out from the South East. As a consequence the East of England and the North West provided a valuable case study with which to examine the regional variations in more detail as in most cases they fell into opposing groupings and therefore offering a useful contrast.

Chapter four presented data on output for the East and North West of England covering the period between 1995 and 2002. Although the two regions appeared to trend together for most of the period they did so at differing (proportionate) levels. Two possible hypotheses are put forward as potential explanations for this: firstly it may be that there are two sets of factors at work; one affecting the changes over time in the level of output and the other affecting the spatial difference, i.e. between regions. Alternatively it is a single set of factors that affect the regions to different degrees. There is also the possibility that both of these are correct for different variables. Factors can also be split into those that are the same across all regions, for example interest rates, and those that vary across regions, for example unemployment/employment rates.

**Table 9.2 Mean household size (1995-2002)**

| Region | Average size | Index |
|---|---|---|
| East | 2.39 | 1.01 |
| East Midlands | 2.41 | 1.01 |
| London | 2.28 | 0.96 |
| North East | 2.35 | 0.99 |
| North West | 2.39 | 1.01 |
| South East | 2.40 | 1.01 |
| South West | 2.36 | 0.99 |
| West Midlands | 2.45 | 1.03 |
| Yorks & Humber | 2.37 | 1.00 |

*Source: Housing Statistics 2003*

Section three raised the issue of differing household sizes; Table 9.2 shows the mean household size for each of the regions between 1995 and 2002. As noted in chapter seven the mean household size for all regions fell across this period, however, it is taken that the mean sufficiently captures these changes for the purposes of this research. In the final column an index of mean household size has been calculated, which was calculated by dividing the average household size for the region over the period of study (1995 – 2002) by the average household size for all regions over the period. This will be used to weight the average number of completions per thousand head of population for each of the regions with regard to the differences in mean household size.

Table 9.3 shows the average annual private sector completions per thousand head of population for the period 1995 – 2002 weighted for differences in average household size. Weighting has changed the output in just two of the regions to a significant extent. It has increased the relative output in the West Midlands to 2.5 and reduced it in London to 1.3, which moves London further out of line with the other regions.

**Table 9.3 Weighted private sector completions 1995 – 2002**

| | Completions per 000 head population |
|---|---|
| East | 3.2 |
| East Midlands | 3.3 |
| London | 1.3 |
| North East | 2.4 |
| North West | 2.4 |
| South East | 2.6 |
| South West | 2.9 |
| West Midlands | 2.4 |
| Yorks & Humber | 2.5 |

The next section will examine the factors influencing output. The choice of these will be guided by the responses to the questionnaire survey and they will be grouped according to their effect. Previously, with regard to their spatial effects, these factors were grouped into those whose value varied by region, and potentially at other spatial levels, and those whose value was fixed nationally; these will be referred to as *regional* and *national* factors respectively.

Section three considered the way in which the model of house-builder behaviour developed in chapter eight could be adapted from a micro model of individual firm

decision making to an explanation of the observed output of all firms within a region. Each of the components was considered in turn and where appropriate an approach was suggested. For the model the output of a firm in the current year or period is based on the previous year or relevant period and so it could be argued that an explanation of output within a region should use the same starting point. However, this research is concerned with spatial rather than temporal differences in output, so for the moment the focus will be on differences between the nine English regions. In the next section where the East and North West regions will be examined in greater detail an element of temporal investigation will be introduced.

This section considers further the factors set out in chapter seven, examining whether they have a contribution to make in terms of explaining the regional variation in output detailed in table 9.3. Demand-side factors will be considered first as it is these that determine the value of the first half of the model ($\varepsilon - \upsilon$). Firstly the data will be examined to look for correlation between output and the demand factors; their theoretical inclusion will also be appraised. Other things being equal it would be expected that there would be a strong correlation between the demand factors and output.

Whilst relative populations have been used to weight the regional measure of output to enable a useful comparison to be made, growth in population is an indicator of new housing need, which given other factors such as employment and income are translated into effective demand. It would be expected that, *a priori*, a higher rate of population growth should be associated with a higher rate of completions; therefore the expectation is for a strong positive correlation. Table 9.4 shows the correlation coefficient between the average annual number of completions and population change for the period 1995 – 2002. Whilst the coefficient for all nine regions is weak and wrongly signed with London excluded the relationship is signed as expected. The 'London' problem will be considered in more detail later.

**Table 9.4 Correlation between output and population change[1]**

| | |
|---|---|
| Correlation coefficient | -0.168 |
| (excluding London) | 0.762* |

---

[1] Throughout this chapter * and ** are used to denote statistical significance at the 95% and 99% level (2-tailed) respectively.

The contribution of migration, both international and interregional, to overall population change can be significant, but varies between regions and within a region from year on year. The correlation between net migration and completions gave a similar result to that for population growth, 0.20 and 0.63 respectively for all nine regions and all regions excluding London. However, it was hypothesised in chapter seven that the source of the migration, i.e. interregional versus international, is likely to have an effect on the type of housing demanded. It was suggested that interregional migration would predominantly generate demand for owner occupied housing, whereas international migration would generate a demand for a higher proportion of private or social rented accommodation, which to some extent may be subject to a *stock-flow* dynamic where inward migrants fill vacancies created by outward migrants with little or no net change in the stock required. Table 9.5 shows the correlation coefficients for completions/interregional migration and completions/international migration. Interregional migration, as hypothesised, shows a strong association with completions. This indicates that the majority of interregional migration movements are by owner-occupiers and they generate a considerable proportion of the new demand for housing within a region.

**Table 9.5 Correlation of completions and migration**

|  | Interregional migration | International migration |
|---|---|---|
| Correlation coefficient | 0.915** | -0.826** |
| (excluding London) | 0.735* | -0.369 |

The correlation coefficient for international migration although strong is negatively signed. This would indicate that international migration does not generate significant levels of demand for private sector housing and may in demanding alternatives *crowd-out* owner-occupier housing.

The second group of factors likely to affect the demand for private sector housing in England is employment and income, as these will affect household ability to obtain and repay mortgages. *A priori* it is expected that the correlation between completions and employment will be positively signed, although it may not be a strong as either population growth or interregional migration as a proportion of owner-occupiers are 'cash' buyers and do not, therefore, need to comply with normal financing

conditions. Table 9.6 shows correlation between completions and the average employment rate for the English regions between 1995 and 2002. As with population change the association is stronger when London is excluded, rising from 0.34 to 0.60, although the correlation including London is not wrongly signed this time.

**Table 9.6 Correlation of completions and employment**

| | |
|---|---|
| Correlation coefficient | 0.339 |
| (excluding London) | 0.600 |

It would be expected again that the correlation between completions and the second of these two factors, income, should be positively signed and of a similar magnitude to that for employment as it affects the ability to express demand through the same mechanisms. However, as can be seen from Table 9.7 the association with income is much weaker than for employment and wrongly signed; excluding London it becomes correctly signed but is still statistically insignificant.

**Table 9.7 Correlation of completions and income**

| | |
|---|---|
| Correlation coefficient | -0.490 |
| (excluding London) | 0.309 |

The weaker relationship between income and completions may be as a result of the differences in house price to income ratios, i.e. higher incomes lead to higher prices rather than to increased output. This will be considered further later in this chapter.

There was an indication in chapter seven that house-builders see the type of employment in a region as a good indicator of potential demand. The example of those employed in banking and financial services rather than manufacturing were cited. However, chapter seven did not find large differences in the level of employment in these sectors apart from financial and business services sector being a substantial employer in London and the West Midlands having a slightly higher proportion involved in the manufacturing and construction sector. Table 9.8 show the correlation of completions with employment in the sectors examined in chapter seven. The *a priori* expectation based on the findings from the survey questionnaire would be that the coefficient for *financial and business services* will be of a moderate magnitude and positively signed. The coefficient for *manufacturing and construction* would be neutral or weak and negatively signed. In the case of

employment in financial and business services the coefficient is large and is wrongly signed for all nine regions, but with London excluded it is small enough to be considered neutral. Employment in manufacturing and construction by comparison has a positively signed coefficient of moderate strength for all nine English regions; with London excluded is of a similar magnitude but negatively signed, which is closer to expectations. This suggests that either this data is insufficiently sensitive to differences in the types of employment does not have a significant influence on demand for private sector housing.

| Table 9.8 Correlation of completions with employment sectors | | | |
|---|---|---|---|
| | Manufacturing & Construction (%) | Public Sector (%) | Financial & Business Services (%) |
| Correlation coefficient | 0.454 | 0.275 | -0.698* |
| (excluding London) | -0.508 | -0.507 | -0.021 |

The final demand-side factor to be examined is house prices. Again theory would indicate that a strong positive association is expected, i.e. positive sloping supply curve. Table 9.9 show the correlation coefficients for completions and average annual change in house prices for 1995 – 2002. The coefficient for all nine regions is moderate but negatively signed; again with London excluded the coefficient is of the same magnitude but becomes positively signed, which is closer to expectations. This result is not altogether unexpected as many other studies have noted the inelastic response to price increases (Bramley *et al*, 1995; Meen, 1996b). This issue will be discussed in greater detail later.

| Table 9.9 Correlation of completions and house prices | |
|---|---|
| Correlation coefficient | -0.514 |
| (excluding London) | 0.516 |

In all cases because London has significantly lower level of output it acts as an *outlier* skewing the results when it is included; the effect in many cases is so severe that it causes the sign as well as the magnitude of the correlation coefficient to change.

This next section examines the association of completions with supply-side factors; again using data from chapter seven. The first factor is the volume of land transactions over the period. In chapter seven these were converted to average 'plots'

and weighted by population. It is expected that a strong positive association would be found as land is a primary component in development and house-builders would be expected to replace developed land at approximately the same rate as consumption in order to maintain a stable rate of production. Table 9.10 shows the correlation coefficient of completions to plots transacted. As expected the coefficient is strong and positively signed. However, this does not answer the question of which is 'cause' and which 'effect'; this will be considered further later in this chapter.

**Table 9.10 Correlation of completions and plots transacted**

| | |
|---|---|
| Correlation coefficient | 0.773* |
| (excluding London) | 0.578 |

The second supply-side factor to be examined is planning permissions (unlike chapter seven, land prices are not considered here but later in the chapter). Again this was weighted in chapter seven using population. As with land supply it was expected, *a priori*, that the correlation would be strong and positively signed, as the development process requires a steady supply of land with planning permission and that this would be a continual process. Table 9.11 shows that the association is weaker than the land supply relationship, for all nine English regions; this may be due to the number of non-construction related applications, i.e. those that are householders requesting permissions for alterations and extensions to existing properties. Again the number of permissions cannot exceed applications and therefore, again as with land supply, the question of which is 'cause' and which 'effect' is raised.

**Table 9.11 Correlation of completions and permissions granted**

| | |
|---|---|
| Correlation coefficient | 0.555 |
| (excluding London) | 0.585 |

The third supply-side factor that is considered here is speed of decisions as this was cited by many of the respondents to the questionnaire survey. In chapter seven it was suggested that to some extent house-builders were able to 'absorb' delays within the development process and therefore any explanation of regional variation in output is not likely to be as a result of differences in planning delays, with perhaps the exception of London where it has already been acknowledged the conditions are different to the other regions. They are also more likely to be more directly

associated with housing 'starts'. Given the small differences between most of the regions the *a priori* expectation based on this would be that there should be little association between the speed at which permissions are granted and the rate of completions.

| Table 9.12 Correlation of completions with speed of permissions | % within 8 weeks | % within 13 weeks |
|---|---|---|
| Correlation coefficient | 0.606 | 0.509 |
| (excluding London) | 0.092 | -0.192 |

Table 9.12 shows the correlation coefficients for completions and speed of permissions. The coefficient for *permissions within 8 weeks* for all nine regions is positive and reasonably strong compared to some other correlations, although not statistically significant; this is contrary to expectations and may be picking up an acceleration of output with some planning authorities more willing or able to react to this.

As the inclusion of London in the foregoing analysis caused the results to skew in many instances it will be excluded from the following assessment. Of the ten demand-side factors that were investigated for association with completions only three gave the expected result, population change, interregional migration and employment rate. These all demonstrated the strong positive correlations that were expected, indicating that they are the important factors in shaping the demand for new housing. As interregional migration is a major constituent of population growth it is unsurprising that they both correlate strongly with completions. Employment as suggested earlier enables the 'need' for housing to be translated into effective demand and again it is not unexpected to find the strong association with completions.

It must be remembered at this point that it is the average rate of completions, population change, migration and employment over the eight-year period, 1995 to 2002, which is being considered. This will disguise many of the effects of the lags that may occur between the changes in the determining factors and completions. It will also even out some of the *peaks* and *troughs* that may occur with temporal data. However, given that a number of respondents to the questionnaire survey indicated

that there was a tendency to increase output *progressively* year-on-year and *to plan*, rather than in response to, potentially temporary, changes in the level of demand it is probable that there would not be any noticeable short-term change in output.

The correlation between completions and international migration is weak and negatively signed. This indicates that in is not a factor in explaining regional variations in output. However, it may be significant in specific markets such as London that has much higher levels of inward international migration than the rest of the country (see Figure 7.3).

The *a priori* expectation was that the correlation between completions and income should be positively signed. A higher level of income allows the need for housing to be translated into effective demand. The association was, however, weaker than expected, which may be as a result of a 'dual' effect where higher incomes lead to higher prices rather than, or as well as, increased output.

Based on responses to the questionnaire survey in which house-builders indicated that they see the type of employment in a region as a good indicator of potential demand it was expected that the association between completions and *financial and business services* would be of a moderate magnitude and positively signed and that the coefficient for *manufacturing and construction* would be neutral or weak and negatively signed. For employment in financial and business services the coefficient was small enough to be considered neutral, whilst for employment in manufacturing and construction it was moderate but negatively signed. It would appear from this that employment type acts as more of a constraint than a determinant of new housing demand, but to some extent a region's reliance on 'old' industries for employment does appear to affect the relative levels of output.

Theory would indicate that the association between completions and house prices would be strong and positive, i.e. positive sloping supply curve where increased prices signal to firms a profitable opportunity. The coefficient was positively signed, as expected, but moderately rather than strongly associated. Although correctly signed this was weaker than expected and may be the result of the earlier suggested

association between incomes and prices. This will be investigated later in this chapter.

The association between completions and all three supply-side factors analysed above produced the expected result. Both the number of average plots transacted and planning permissions granted were expected to have, and had, strong positive correlations with the average annual number of completions, as land with planning permission is the primary component in development and house-builders would require a steady supply at approximately the same rate as consumption in order to maintain a stable rate of production.

Whilst speed of planning decisions was cited by many of the respondents to the questionnaire survey as a limitation to their ability to alter production rates this is likely to be a short-term effect as house-builders are able to programme the 'delays' into the development process. The *a priori* expectation was that any explanation of regional variation in output is not likely to be as a result of differences in planning delays and therefore there would not be a strong association between completions and decision times. However, the coefficients for both the 8-week and 13-week periods were stronger than expected. Possible explanations for this will be considered later.

For all except house prices the demand-side factors are exogenously determined. House prices are determined by the level of supply, relative to demand and the distribution of income and wealth. However, all three supply-side factors are at least partially, if not entirely, endogenously determined. The question of which is 'cause' and which 'effect' will be considered further later in this chapter.

London has a significantly lower level of output and acted as an *outlier* in the correlations skewing the results when included with the other nine regions. The effect was, in many cases, so severe that it caused the sign as well as the magnitude of the correlation coefficient to change. As observed throughout chapter seven and has become apparent in this chapter London must be treated as a special case. Many of the observed differences will be as a result of the particular economic and development conditions within the region due to its status as capital and as a 'city

region'. This imposes on it conditions unlike those in the other regions, where the type of demand and conditions under which development land is available affects production.

## 4.      Output in the North West and East of England

This section examines data from the East and North West of England in greater detail, including some temporal data to improve the statistical reliability. Firstly the observations on the output of the two regions from chapter four are revisited. Table 9.13 shows the annual number of private sector completions per thousand head of population for the two regions. Throughout the study period the level of completions in the East remains above the English average of 2.6, whilst the North West does not achieve this level. In chapter four it was observed that the two regions appeared to follow the same general trend but at different relative levels of output. Two alternate hypotheses were put forward to explain this. The first, that there are two sets of factors at work; one influencing the changes over time and the other influencing the spatial difference; and the second, that it is a single set of factors that influence the regions but to different degrees. A third could be added to this, which is 'both of the above'.

| Table 9.13 Private sector completions | | | |
|---|---|---|---|
| | East | North West | Difference |
| 1995 | 3.5 | 2.3 | 1.2 |
| 1996 | 3.5 | 2.3 | 1.2 |
| 1997 | 3.6 | 2.5 | 1.1 |
| 1998 | 3.2 | 2.5 | 0.7 |
| 1999 | 3.1 | 2.4 | 0.7 |
| 2000 | 2.8 | 2.4 | 0.4 |
| 2001 | 2.7 | 2.0 | 0.7 |
| 2002 | 2.9 | 2.5 | 0.4 |

As with the previous section the demand-side is investigated first. Bivariate correlations were run to check for association between completions and each of the demand-side factors. As the data now includes temporal as well as spatial data it is the 'difference' in the factors between regions that is analysed, for example, the difference in output between the two regions with the difference in the employment

rates. This will reveal any connections between differences and changes in output and the relative levels of the demand and supply factors.

Table 9.14 shows the correlations between each of the demand-side factors. The reduction in the number of completions in the East was echoed by a fall in population growth. In the North West the number of completions remained more stable whilst population change became positive. The difference between output and population change narrowed between the two regions resulting in a strong positive, but statistically insignificant, association. Whilst interregional migration in the East remained strongly positive throughout the period in the North West it changed from strongly negative to slightly positive, resulting in the association with completions being slightly weaker than with population change but still positive. However, the correlation between population change and interregional migration remained significant (0.892**), which confirms interregional migration as a major source of population change. This indicates that the fall in the differences in population change and interregional migration were associated with a fall in the difference in output between the East and North West.

| | Population change | Internal migration | Employment rate | Income | Mortgage to income ratio | House price to income ratio | House price |
|---|---|---|---|---|---|---|---|
| **Table 9.14 Correlations of demand factors with annual completions** | | | | | | | |
| Correlation coefficient | 0.609 | 0.528 | 0.150 | -0.926** | -0.633 | -0.832* | -0.874** |

The employment rate increased slightly faster in the North West over the period resulting in a one per cent fall in the difference between the two regions, although the rate in the East remained five per cent higher. With a relative improvement in employment opportunities in the North West it would be expected to see a fall in the level of outward migration and therefore a reduction in demand for new housing in the receiving regions. However, as the fall in the difference was not continual the association with completions was weak. Average incomes in the two regions increased steadily over the period, however, the growth was considerably stronger in the East resulting in an increasing difference between the two. As a consequence this resulted in a strong negative association between differences in the level of

completions and income levels. Whilst this finding might be contrary to expectations, as it would be expected that there would be movement towards higher paid employment, it needs to be considered in conjunction with changes in house prices.

House prices increased faster than income in both regions, which resulted in an increase in both the mortgage and house price to incomes ratios. However, as house prices increased faster in the East the difference in ratios also increased, particularly house prices to incomes. As a result of the fall in the number of completions in the East the correlation coefficients are all strongly negative, i.e. the difference in the number of completions between regions fell whilst the cost, relative and absolute, of buying increased substantially faster in the East. The substantially higher 'real' increases in the cost of buying in the East are likely to have been one of the causes in the fall in output within the region.

Table 9.15 shows the correlations between each of the supply-side factors. The correlation between land transactions (in plots per 000 population) and completions is small enough to be considered neutral. This is not surprising as given the volatility in the data examined in section five of chapter seven it would not be expected to see a strong association based on time-series data.

**Table 9.15 Correlation of supply factors with annual completions**

|  | Plots per 000 population | Land price | Permissions per 000 population |
|---|---|---|---|
| Correlation coefficient | -0.154 | -0.792* | -0.682 |

The remaining two supply-side factors, land prices and planning permissions, both show strong negative associations with completions, land price being statistically significant. Land prices, like house prices, increased in both regions across the period and similarly again they increased faster in the East (three hundred and fifty per cent compared to two hundred and thirty). Unsurprisingly then land prices show a stronger association with house prices than completions. The relationship between house prices and land prices will be explored further in the next section. The number of planning permissions granted also increased in both regions and again faster in the

East. However, as pointed out in chapter seven these figures include applications for change to existing properties as well as for new housing. This wrongly signed association might then be explained by an increase in the number of applications for changes to existing properties as it may be cheaper for householders to extend rather than move. These figures may also be registering a fall in the average size of development site as government policy encouraged the re-use of brownfield sites resulting in a larger number of smaller developments taking place.

This section examined data from the East and North West of England. It was observed earlier that the factors thought to shape output in the two regions appeared to trend together but at different relative levels, although output in the East ended the period on a lower level whilst the North West finished at much the same. Three hypotheses have been put forward to explain this: a) that there are two sets of factors at work, one influencing the changes over time and the other influencing the spatial difference; b) that it is a single set of factors that influence the regions but to different degrees; or c) a combination of 'a' and 'b'. Bivariate correlations were run to check for association between completions and each of the demand-side factors using temporal as well as spatial data

As with the national data population change and migration were strongly associated with completions. The correlation between population and interregional migration remained significant confirming interregional migration as the main source of population change. However, the association between completions and employment rates was not as strong as with the national data. A strong negative association was found between completions and income. The association between mortgage to income ratios, house price to income ratios and house prices to completions were also found to be strongly negative indicating that the real cost of buying increased faster in the East. This is probably the reason for the fall in completions and therefore the negative correlations with income and house prices. Of the supply-side factors the correlation between land transactions and completions was small enough to be considered neutral. Whilst the association between completions and land prices/planning permissions was strongly negative. The results for all but population change and interregional migration are not what would have been predicted *a priori*.

However, when considered in combination a possible explanation does begin to form; this will be discussed further in the next section.

## 5.     The causal chain

This research seeks to explain spatial variations in private sector production at a regional level. Several of the factors examined in section 3 demonstrated a close association with completions; others, including those suggested by the respondents to the questionnaire survey, demonstrated weaker connections. This section examines the data again, this time to consider the possibility of interlinked relationships or associations. To do this a causal chain needs to be established so that the determining factors can be identified and their contribution in determining output estimated. As developers adjust the rate of completions to match as much as possible emerging demand it can be argued that it is a good proxy for effective demand. The factor with the strongest association with completions is population change, so accepting for the moment that population change is the key determinant of completions/demand the key determinants of population change must be identified. It has already been acknowledged that interregional migration can contribute above two-thirds to population change; the second most important contributory factor is natural change, i.e. births minus deaths. International migration is the third and smallest factor to contribute to population change. The importance of these factors does, however, vary from region to region. In London for example the contribution from natural growth is much higher than for the other regions and, as already stated, whilst net migration is small it is constituted from high levels of net interregional outflows and net international inflows.

To assess the strength of association between population change and interregional migration (excluding London) a bivariate correlation was run. The expectation was that a strong positive association would be found given the contribution of interregional migration in most regions. The correlation coefficient for the two factors is 0.874**; this confirms expectations. Accepting this as the next link in the causal chain the motivation for interregional migration, or, as may be the case, not migrating, must be identified. The most plausible explanation of this would be to secure a higher standard of living. Generally this would be through improved

employment prospects or higher levels of income (Stewart 2002b), both factors were also cited by respondents to the questionnaire survey.

As before, to test the strength of the association between these factors and interregional migration a bivariate correlation was run. Population change was also included in this for completeness. The *a priori* expectation was that all of the associations would be strong and positively signed; the results are shown in table 9.16 (a flowchart containing the flows and coefficients can be seen in Appendix 3). Apart from the correlation of income and interregional migration all of the correlations are strong and positively signed, confirming expectations. Whilst the association between income and interregional migration (0.563) is not as strong as with the other factors it is strong with population (0.680) and is stronger than its correlation with completions (0.31). Interestingly the association between employment and population change was the strongest. This may be an indication that higher employment levels encourage individuals not to migrate to other areas, strengthening the effect of natural growth in population, in addition to attracting migrants from other regions.

**Table 9.16 Correlations with interregional migration**

| | Interregional migration | Employment | Income | Population change |
|---|---|---|---|---|
| Interregional migration | - | - | - | - |
| Employment | 0.727** | - | - | - |
| Income | 0.563 | 0.818* | - | - |
| Population change | 0.874** | 0.942** | 0.680 | - |

The question now remains as to where the remaining identified factors, house prices, land prices, land transactions and planning applications, fit into the causal chain. House prices are likely to be influenced by the same factors as completions, i.e. employment, income and population change. The first two of these enable demand (population change) to become effective in the market sector.

To assess the strength of these associations bivariate correlations were run between these factors. The expectation was that all of the factors would show strong positive associations with house prices. Table 9.17 shows the correlation coefficients. All of

the associations were strong and positively signed confirming expectations. This would suggest that it is a combination of these three factors that determines house prices.

**Table 9.17 Correlations with house prices**

| | House prices |
|---|---|
| Employment | 0.853** |
| Income | 0.749* |
| Population change | 0.878** |

The strength of the association between house prices and completions was examined in section 3 and was not as strong (0.516) as other factors. However, given that house-builders use a 'residual valuation' of development land it would be expected that the association between house prices and land price to be strong. A bivariate correlation confirmed this with a coefficient of 0.747*.

Many of the remaining factors mentioned above are the supply-side factors. Table 9.18 shows the coefficients for these remaining factors. The association between completions and land transactions and planning applications is moderate but not significant. As land with planning permission is the primary component in development and house-builders require a continual supply in order to maintain a stable rate of production a positive association was expected. However, given the lumpy nature of development land it is not surprising that a stronger relationship was not found. Whilst land supply and planning are at the beginning of the development process, they are a reaction to land being used within this explanation, rather than a factor determining production, and therefore at the end of the causal chain.

**Table 9.18 Correlations with completions**

| | Completions | Land prices | Land transactions | Planning permissions |
|---|---|---|---|---|
| Completions | - | - | - | - |
| Land prices | 0.453 | - | - | - |
| Land transactions | 0.578 | -0.044 | - | - |
| Planning permissions | 0.585 | 0.587 | 0.548 | - |

This section revisited the factors examined in section 5 to establish a causal chain linking the determining factors. Using this process to develop an understanding of the possible underlying causal mechanisms. Before the data was analysed for associations between the factors a theoretical justification for the next causal 'link' was sought.

Many of the factors examined in section 5 demonstrated a close association with completions; others, including some from the questionnaire survey, demonstrated weaker connections. Starting with the regional level of completions the factor with the strongest association was population change. This also 'fitted' theoretically as the primary purpose of a dwelling is to provide a place of habitation. Of the components of population change interregional migration constitutes the largest proportion in most regions, with natural change the second largest contributor and international migration the smallest. It was hypothesised that the prime reason for interregional migration was for improved living standards, i.e. better employment opportunities and higher average income levels (Stewart, 2002b). A number of the respondents to the questionnaire survey also cited these factors as influential on the relative levels of output. Analysis found that of the two factors, employment and income, it was employment that had the strongest statistical association with interregional migration. It was also found that employment had a strong association with population change, other than through interregional migration, suggesting that these areas generate a 'gravity' effect that also discourages significant population movement away.

It was hypothesised that house prices would be influenced by the same factors as completions, employment, income and demand (i.e. population change). Statistical analysis found strong associations with all these factors, particularly with population change and employment. From house prices the next 'link' was hypothesised to be with land prices given that house-builders use 'residual valuation' for land pricing. The possibility of a link between land prices and the number of land transactions was also investigated, i.e. higher demand for land being associated with higher land prices, but this was not found statistically.

The two remaining factors investigated in section 5, both supply-side, are land transactions and planning applications. As the link between land prices and land transactions was not established it was hypothesised that the link might be with completions as land with planning permission is the primary component in development and house-builders require a continual supply in order to maintain a stable rate of production. The statistical association between completions and land transactions and planning applications was found to be moderate but not significant. Given the lumpy nature of development land, and therefore planning applications, it was not surprising that a stronger relationship was not found. Also as indicated in chapter seven the data for planning applications would include a significant proportion of applications for alterations to existing properties.

A causal chain has now been established between employment levels through population change (in particular via interregional migration) to completions. Then from completions to land transactions and planning applications, there was also a strong statistical association between population change and planning applications, again possibly indicating an intensification of the use of the existing stock through alterations. Although land supply and planning are at the beginning of the development process in this model they fit at the end of the causal chain, being a reaction to rather than a motivation for development. Concurrent to this chain is another that is linked at various points. Starting again with employment levels, this time to house prices, partially through income levels, and on to land prices, with a link between population change (i.e. demand) and house prices. The remainder of this section uses this causal chain to examine the data from the East and North West of England.

Employment or the expectation of improved employment prospects powers population change, predominantly through interregional migration. The association between population change and interregional migration can be clearly seen. Inward interregional migration remained strong throughout the period in the East and this was reflected in population growth. In the North West interregional migration changed from strongly negative to marginally positive, which was mirrored in population change. In the East employment increased (2.18%) driving the growth in population (4.6%), although both fell slightly at the end of the period. In the North

West employment also increased (3.3%), as a result population growth changed from negative to positive (although it was 1.09% lower over the period). In both regions employment prospects were improving and therefore population growth increased.

Population change is the primary driver for new housing demand (though not necessarily demand for new housing). With substantial population growth in the East throughout the period the demand for housing remained strong and as a result new housing supply (completions) remained above average for the country. The picture in the North West was more complicated. Although population growth changed from positive to negative, the supply of new housing remained relatively stable. A number of respondents to the questionnaire survey identified the availability and price of the existing stock in the region as an influence on development. When demand for the existing stock falls there are two main options, a) to demolish and rebuild with (generally) higher specification and at lower densities, or b) to refurbish, again at higher specification. During the first part of the period the former will have dominated; either this or a considerable number of properties were unoccupied. Towards the end of the period the price of the existing stock will have fallen sufficiently for refurbishment to become a viable option. It is reasonable to assume that many of the demolished dwellings during the earlier period were unsuitable for refurbishment. The new supply for the later period of stronger population growth would then have come from a combination of refurbishments and new house building.

**Table 9.19 Demolitions by clearance order**

|       | East | North West |
|-------|------|------------|
| 94/95 | 22   | 885        |
| 95/96 | 25   | 694        |
| 96/97 | 7    | 698        |
| 97/98 | 21   | 353        |

*Source: Housing Statistics 2003*

The correlations concerning the differences in the completion rates and the demand factors in section five highlighted the different trends in the East and North West regions. It is important to note that by using differences the analysis picked up the *relative* changes between the regions. As employment, interregional migration and population change appear before completions in the causal chain we can conclude that it is the relative levels of employment that are important in determining

population change and therefore completions. However, as the land transactions and planning permissions appear after completions they are an 'effect' rather than a 'cause' of development and it is therefore the association between completions and these within a region that is relevant. However, as stated earlier the nature of development land and data on planning permissions makes it unlikely that strong statistical associations will be found.

**Table 9.20 Correlations with income (East)**

| | Income | House prices | Land prices | Land transactions | Planning permissions |
|---|---|---|---|---|---|
| Income | - | - | - | - | - |
| House prices | 0.970** | - | - | - | - |
| Land prices | 0.932** | 0.990** | - | - | - |
| Land transactions | 0.110 | -0.079 | -0.165 | - | - |
| Planning permissions | 0.908** | 0.862* | 0.806* | 0.018 | - |

For the remaining causal links between income, house prices and land prices identified in this section the correlations coefficients are shown in tables 9.20 and 9.21 for the East and North West respectively. The coefficients between these factors remain strong, income with house prices 0.970 and house prices with land prices 0.990, confirming the association. A caveat should be attached to these, however, as the data is likely to be non-stationary. There is no association between land transactions and any of the other factors. However, there appears to be a strong association with planning permissions. Given that permissions do not correlate strongly with completions it must be concluded that these are for applications for changes to existing properties or the data is registering a fall in the average size of development site as suggested earlier.

**Table 9.21 Correlations with income (North West)**

| | Income | House prices | Land prices | Land transactions | Planning permissions |
|---|---|---|---|---|---|
| Income | - | - | - | - | - |
| House prices | 0.990** | - | - | - | - |
| Land prices | 0.965** | 0.989** | - | - | - |
| Land transactions | -0.077 | -0.126 | -0.229 | - | - |
| Planning permissions | 0.898** | 0.903** | 0.843* | -0.057 | - |

## 6. The model and explaining regional output

Whilst the intention was not to operationalise the model it is useful at this point to consider the main concepts of the model and investigate possible correlations with actual outcomes. This will bring together the theories of the firm examined in the last chapter with evidence of firm behaviour from the questionnaire survey with data relating to regional output.

The aggregate model for output within a region proposed in section 2 of this chapter is $\Sigma o_r = (\varepsilon_r v_r)$. This research seeks to explain regional variations in production measured by completions per thousand head of population; therefore here $\Sigma o_r$ represents 'completions' for region $r$. It was argued earlier that house builders base their expectations of demand ($\varepsilon_r$) on past experiences of demand. On this basis it is expected that there would be a strong association between completions this period and sales in the same period last year.

**Table 9.22 Correlations of sales with completions**

|  | Completions vs. Sales | Completions vs. Lagged Sales | Completions vs. Lagged-completions |
|---|---|---|---|
| East | 0.572** | 0.435* | 0.329 |
| East Midlands | 0.495** | 0.331 | 0.135 |
| London | 0.021 | 0.337 | 0.146 |
| North East | 0.624** | 0.507** | 0.440* |
| North West | 0.357* | 0.491** | 0.092 |
| South East | 0.668** | 0.545** | 0.405* |
| South West | 0.430* | 0.052 | 0.191 |
| West Midlands | 0.566** | 0.459* | 0.285 |
| Yorks. & Humber | 0.487** | 0.423* | 0.160 |

The first column of table 9.22 shows the coefficients for correlations between sales and completions in the same period for each of the nine English regions. This analysis is based on quarterly data from HM Land Registry, for sales, and the ODPM for completions. As house builders attempt to manage the level of completions to emerging demand so that they reduce the level of unsold stock held, a strong correlation between the two would be expected. In all but one of the regions, London, the correlations were statistically significant. Despite the distorting affects on the data of the reporting delays and recording issues discussed in chapter four,

which will have reduced the correlations, this is a convincing indication that house builders are reasonably successful in their attempts to match emerging demand and reduce levels of unsold stock.

As stated previously it would be expected, based on the model, that completions in the current period would show a strong correlation to sales in that period in the previous year. The coefficients for correlations between completions in period $t$ with sales in period $t_{-4}$ are shown in the second column of table 9.22. The association is not as strong as between completions and sales in the same period. However, for six of the nine regions it is still statistically significant. The development process occurs over an extended period and requires a high degree of confidence in future demand on the part of the house builder. During the intervening period the level or trend in demand may have changed; this will have affected the level of starts, which will have a knock-on consequence for output (i.e. completions). House builders will not always make the correct judgement and therefore it is not surprising that the correlation is not stronger.

The second explanatory factor in the model $\upsilon_r$ represents the degree of uncertainty faced by the firm; this has a specific affect on the behaviour of house builders. It is argued here that there are asymmetric costs for house builders in making incorrect judgements on output. The cost of under-estimating future demand results in lost profit opportunities, although dependant on the level and stage of work-in-progress there may be a possibility to regain some of this. By contrast the cost of over-estimating demand will, at the very least, incur financial penalties, as the investment in the unsold stock has to be financed. This will also reduce the cash available to finance the purchase and development of other sites potentially resulting in further lost profit. However, holding large volumes of unsold stock for any lengthy period, particularly when this is externally funded can cause considerable cash-flow problems and may result in bankruptcy, as happened to a number of house builders in the early 1990s (Wellings, 2006 p95-96). As a consequence of this asymmetric cost it is further contended that developers are likely to be cautious in their estimation of demand. This results in smaller numbers of dwellings being built than might be sold.

# 7.    Conclusions

This chapter has established a causal chain between employment and demand. The first 'link' in the chain is between employment and population growth. Population growth, particularly that generated by interregional migration, is strongly associated with areas of higher than average employment levels. The strong correlation between employment and population growth directly may be identifying a gravity that in addition to attracting inward migrants also discourages outward migration. The increased rate of population growth creates higher demand for housing. At the same time the increased levels of employment, partially through income, and demand are reflected in higher average house prices.

Private sector house building, predominantly for owner occupation, is developed speculatively, that is, house builders begin the process of development without having first identified a purchaser for the end product. Attempts are made to mitigate this by selling from plan and timing completions to meet emerging demand, but a significant level of investment must still be made before this stage of the process can be reached. This is uncertainty over future levels of demand if further exacerbated by the significant time lag between initial investment and sale of the dwelling. This uncertainty over the over future levels of demand and the penalties of over-estimation cause house builders to be cautious in their plans, which has consequences for the volume of housing brought to market. Initial increases in demand are more likely to be met by rising prices than by higher output, with house builders reluctant to increase investment and risk the consequences of unsold stock. They are generally contented to take the additional profits, particularly if the higher demand is sustained, as it will result in increased land costs.

Earlier in this thesis the question as to whether there were two sets of factors affecting output, one affecting the changes over time and the other affecting the spatial difference, i.e. between regions, or whether it was a single set of factors that affect the regions to different degrees. It has been established here that it is the same set of factors but that their influence varies between regions and that this varies over time due to differences in exposure to these. The weaker relationship between population change and completions found in the East are likely to be as a result of

the differences in house price to income ratios; the substantially higher 'real' cost of buying causing a fall in demand and therefore in output within the region. However, generally the higher levels of regional completions between 1995 and 2002, particularly in the East, East Midlands and South West, are associated with and explained by higher population growth.

The next chapter will assess the strength and implications of the research. It will review both the methodology and methods used assessing the consequences for the success of the research. The model developed earlier in the thesis will be assessed and the consequences of this for both future research and policy. The final section will provide an overall critique of the research identifying its strengths and weaknesses together with future possibilities for further investigation.

**Chapter Ten**

**Conclusions**

## 1. Introduction

The purpose of this chapter is to consider the consequences of the chosen methodological approach and methods employed. It will also review the main findings of the research and argue for a particular understanding of house building firms and the house building industry. Finally it will present the key consequences of the findings of the research, both for future avenues of investigation and potential policy implications of the evidence and conclusions. The next section considers the methodology and methods employed arguing that these led to a richer more holistic approach that produced greater insights into both house building firms and the house building industry. Section three presents the key outcomes from the research. It develops the arguments presented in earlier chapters and draws out the main conclusions of the research and offers some reflections on the findings of the research. The following section considers what further questions and avenues for research exist and how the understanding of the house-building firm presented affects key policy questions. The last section offers some final reflections on the research.

## 2. A realist perspective

It was argued in that the social world is complexly structured, with changing causal mechanisms underlying all phenomena being experienced or observed. To understand the spatial variations in private sector house building it was necessary to discover the causal mechanisms that regulate and shape the environment in which house-builders function, and to understand how house-builders adapt to this environment. However, the ability to theorise upon and undertake research into, in this case, the house building industry depends on the existence of relatively stable underlying mechanisms or processes. In an open social world these mechanisms are not always discernible as they will vary through time and may be obscured by other countervailing mechanisms or processes.

Given that causal mechanisms are not directly observable, occurring at the *real* rather than *empirical* level of reality, they must be identified using contrastives or demi-regs, such as variations in relative regional outputs or correlations between house prices and land prices. Based on an initial exploration of housing market secondary data a number of hypotheses were put forward, the final selection of which was on the basis of explanatory power. Observation of patterns or tendencies in the data, in this case from a questionnaire survey and secondary sources, were used to identify and outline the causal mechanisms and processes. These sources were then triangulated with theory and a realist explanation was developed that attempted to capture the complexity of the data. The resulting theory of the structures and causal mechanisms shaping spatial variations in private sector production provides an explanation of the observed levels of output.

The aim of this thesis was to develop an open system theory that provides a logical explanation of market housing production. Initial hypotheses were developed in Chapters Five, Six and Seven from the questionnaire survey results and secondary data. These were revised and developed as the data was explored in greater detail, uncovering the factors that best explain the spatial variation in production during the study period. Given that it is argued that the house building industry is part of an open system there is no expectation that any form of covering laws will be detected and that any causal mechanisms will necessarily be constant or unchanging through time, only that they provide the best explanation for the period being researched.

It might be argued that by using other inferential statistical techniques, such as regression analysis, it might have been possible to discern the strength of the influence of each of the determining factors and therefore estimate their individual contribution to output. This reductionist approach was rejected in favour of a mixed methods approach, which it is argued strengthened the analysis, providing a more holistic explanation. The research recognized the relative benefits and hazards of data collection using 'stated' and 'revealed' methods, but in applying both it is argued that a greater balance was created reducing the possibility of spurious factors selection. It is argued that the triangulation of qualitative and quantitative methods, and theory employed were the most appropriate and enabled the identification of a

causal chain as well as developing a clearer understanding of house builder behaviour.

## 3.    The house building industry and house-building firms

During the last two decades the house building industry and its impacts on the economy as a whole has generated considerable political and academic interest (see for example Bramley *et al*, 2004; Bramley, 2007; Clapham, 1996; Meen *et al*, 2001; Stewart, 2002b). This is not only because of the basic need for shelter but also because of the economic and social effects on the wider economy. House prices have risen in real terms over this period having significant consequences for wealth distribution and labour mobility (Barker, 2004). This research sought to explain the spatial variations in private sector house building at a regional level. It did this by firstly examining the housing market, both new and second-hand, and the house building industry.

A number of interesting characteristics were identified, firstly that there was an increasing concentration of output within the industry (Gillen, 1994a; Wellings, 2006). Although there are still a large number of very small house builders registered with the NHBC many of these produce one unit or less in a year, building often on an opportunistic basis where small sites become available. At the opposite end of the spectrum there are a small number of very large house builders who account for around fifty per cent of new house building in any one year. Although the number of such firms has also fallen slightly over recent decades the share of output has continued to increase as a number of the larger firms have merged (Wellings, 2006). It is argued that this tendency towards a greater concentration in production must benefit to the firms, otherwise there would be no incentive for firms to expand, either by merger or through natural growth.

The second important characteristic identified within house building was the significant time delay between the initial purchase of the site and the confirmed sale of the dwelling; this could often be as much as two years. An increasing number of new dwellings are built for owner occupation; normally the sale of these is not agreed until the house builder has at least started the development. Therefore house

builders face the possibility that dwellings will not sell, at least for some time after completion. This highly speculative nature of the house building industry creates a high degree of uncertainty within the industry (Ball, 1996 p28; Barker, 2004 p104; Leishman *et al*, 2000). It is argued that these two key characteristics are fundamental to understanding firm's behaviour and therefore explaining the observed levels of output.

In order to understand more of the motivations of firms within the industry a questionnaire survey was conducted. It was designed to capture the key behavioural characteristics of firm's behaviour, in particular in relation to the two key industry characteristics identified in the initial investigations. Two main features were identified from the responses; firstly, most firms had a clear longer-term focus, in particular long-run profitability and growth of the firm. There are two possible explanations for this, firstly a recognition that short-run profitability may be difficult to achieve consistently because of fluctuations in demand. Secondly, and more importantly, it is a clear indication that firms expect to be trading in the future, supporting Chandler's (1977) premise the managers of a firm are motivated to make decisions that promote the long-term stability and growth of the firm rather than those which maximise short-run profits. That is not to say that they do not wish or need to achieve reasonable profit levels, they do. Most house-building firms, like other firms, have shareholders who require a return on their investment; the price they pay for their shares is based not on short-run returns but on an 'income stream' paid over time. There is, therefore, an expectation both on the side of the firm's management and the owners that the policies pursued will lead to long-term stability and steady growth in the firm and its profits. This can also be seen in some of the answers to the open questions on the questionnaire; which have typically included statements such as a "[r]*equirement to grow pre-tax profits progressively*" (respondent 006) and "*this group has focused on sustainable growth in profits*" (respondent 001).

The impetus to achieve growth in firm size links to the other main feature identified from responses to the questionnaire survey. There are benefits to the firm in achieving higher levels of output; analysis of the surveys data suggests on average three hundred and fifty units or more per annum is the point at which these are

realised. Above this level the average answer differed for a number of key factors. Firstly, the relative size of land bank held increased to above that which is technically required for efficient functioning of the house-building firm. Allowing for planning delays an average of two years forward supply of land is required to ensure uninterrupted production (Lee, 1999; Menary, 2002). Whilst two-thirds of small firms hold less than this, the majority of larger firms hold between three and four years requirement. Although some of the land holding is required for the normal functioning of the development process there is an excess held by the larger firms over what is technically required. This 'excess' is due, at least in part, to competition for this resource. Although not fixed, land supply is relatively slow to respond to increased demand in the short-run; this may be in terms of site identification, the negotiations for purchase, delay in the planning process, or the response of landowners in releasing land. The need to hold sufficient land to ensure continuity of production is a consequence of the uncertainty over future availability of development land and the levels of future demand for housing.

The question of how the behaviour of larger firms impacts on output is more difficult to determine, but the difference in land-banking practises are an indication that their influence is likely to be disproportionate. Further, the finding that there is a greater likelihood of their responding to stimuli with price changes and accepting Kalecki's model of pricing, as this thesis does, then the industry price will reflect the larger firms behaviour, at least in the longer term. For example, if larger firms are able to increase their prices they will be able to pay a higher price for replacement land, unless smaller firms follow suit they risk being 'priced out' of the land market. Many studies suggest that by increasing the availability of land through the planning system the price of land and housing will fall as production increases; this thesis does not subscribe to this view. House prices are demand determined (Meen, 1996b). It would take a significant increase in new housing output to affect this as it contributes only one per cent to the stock of housing and is no more than a seventh of sales in any one year (RICS, 2003; Oxley, 2004 p220-222). The effect of releasing more land through the planning system would be to shift market power away from landowners to developers, as this would move the market further away from a monopoly supply. The consequences of this would be to reduce the cost of land to the developer, dependant on competition in the particular location and the relative bargaining

positions. The contention of this thesis is that it would neither reduce house prices nor increase production significantly.

A second benefit of firm size was also identified. Smaller firms were much more likely to cite 'cash-flow' or 'financial' constraints as an inhibitor to increasing production, both for starts and completions. The relative importance of financial constraints compared to the other determining factors was also higher for smaller firms. Larger firms are likely to have greater access to additional funding streams, such as equity finance. Smaller firms by comparison may have a greater reliance on retained profits, as other forms of finance such as debenture and other interest bearing loans require repayment whatever the trading conditions.

Smaller firms were also found to begin development much sooner after purchase, confirming both the availability of a smaller land resource and the need to maintain cash flow. Several of the smaller firms made comments such as: "[w]*e never flex production. We are a production line. Sales must sell whatever production produces*" (respondent 017), "*Build team rarely told to slow. Growth is about land, planning and build not sales*" (respondent 022), "*Bottom up production target based on available plots*" (respondent 022), "*Get in – Get on – Get out*" (respondent 024). These findings confirm that house-building firms gain significant benefits from growth. With larger land holdings, they are better placed to take advantage of increases in demand, both in terms of having surplus capacity and having development sites in a larger number of locations.

The factors cited most often by the questionnaire survey respondents as determining individual firm production were predominantly supply side: land supply, planning, labour availability and financial constraints. It has already been demonstrated that increased size allows firms to moderate the effects of land supply and financial constraints. Much of the same reasoning can be applied to planning constraints. The responses to the questionnaire indicated that on average a larger proportion of the land held by the larger firms had planning permission, again bestowing greater flexibility in production allowing firms to respond more swiftly to increases in demand. Planning has three possible affects on house building, firstly the speed at which development can take place, i.e. by requiring planning permission prior to the

commencement of development a further stage is added to the process extending the time taken to complete. However, house builders can and do build this into their development schedules. This again is easier for larger firms where they are more likely to have concurrent as well as consecutive developments taking place and they are also able to develop greater specialisation of tasks.

The second affect of planning regulation is the location and type of developments. This was cited by one of the respondents to the questionnaire survey suggesting that, "*the new planning guidance issued as PPG3 ... controls the ... type of outlet and the product ... which constrain demand*" (respondent 012). However, it could be argued that for most households a house in a less than perfect location is preferable to no house. It is only then those that have sufficient income of wealth to afford additional housing that demand will be constrained by this.

The final impact of planning regulation is its effect on total output. This probably has the most detrimental effect on supply. However, again the evidence from the questionnaire survey indicates that larger house builders have sufficient land available with planning permission to increase production should there be sufficient demand. For smaller firms, which cited planning constraints more often, this is potentially a limiting factor. However, increasing the volume of land granted planning permission would not necessarily increase the volume of dwellings constructed.

The results presented here suggest that, whilst house builders complain that the planning system limits the supply of land, in terms of what is technically required there is little evidence to support this, except perhaps in the case of the smallest developers who do not have access to the financial resources of the larger firms and are unable to maintain significant land holdings. A more useful characterisation may be that the total development land available is sufficient in the long-run, but many firms, although not all, would like a larger proportion of this because of the uncertainty over the volume and location of future demand. That is not to say that it does not cause short-term delays as evidenced by some of the comments received; "*our ability to adjust production has been mainly affected by* [our ability to secure] *the right planning consents in a timely fashion*" (respondent 006). Although the

structure of the planning system is determined via policy, once in place it becomes endogenous or part of the system. Developers adjust their behaviour to the given set of 'rules'. If the planning system delivered quicker decisions then developers would be able to reduce their land holdings, allowing for the effects of competition for development land, but it would not have an effect on the level of long-term output, which is predominantly demand determined.

Labour supply was the final supply factor cited by respondents to the questionnaire, particularly in relation to the ability to increase the rate of completions in response to higher demand. Unfortunately no data was found to examine or verify this. Comments such as the "*Availability of labour/sub-contract trade labour; employing additional site staff (employed staff) i.e. finishing foreman, labourers etc.*", "*The demands on finishing trades can be critical in popular locations*" and "*availability of labour is becoming increasingly more important*" were not uncommon and there is no reason to dispute these; Ball (1996 p33) has also noted this cyclical shortage of skilled labour.

In addition to the above supply side factors, the majority of respondents cite demand side factors as influential in output decisions. Interestingly, in relation to the question on output differences between the North West and East Anglia there was a predominance of demand-side factors in the responses, whereas (as noted above) for the question of the individual firm's output it was mainly supply-side factors that were indicated. Most respondents cited both demand factors with reference to current output and expectations of demand when considering future output.

The next stage of the research examined secondary data on the factors hypothesised to influence private sector house building. These were drawn from either the responses to the questionnaire survey or with reference to the literature. The main observation from this data was that most of the demand side factors showed a general gradient away from or towards London and the South East (dependant on the factor). If a line were drawn from the Bristol Channel to the Wash then generally factors such as population growth, inward migration, employment and income were highest to the south-east of this and lower to the north-west. A less consistent picture emerged from the supply side factors. There was little variation in the speed at which

planning decisions were made across the country except for Yorkshire & Humber and London, which were slightly slower. However, the number of planning permissions granted reflected the general regional distribution of completions. The volume of land transactions was very erratic and questions were raised over the completeness of this data, observations from this were inconclusive.

Based on the observations from the data examined in stage one of the research and the responses to the questionnaire survey a novel conceptual model of house builder behaviour was developed. The factors identified in the research thus far, expectations of future demand, uncertainty and firm size formed the key elements of the model. At the present stage of development it has not been possible to integrate the supply side factors within the model. However, as the research is seeking to explain regional variations in output and the evidence indicates that at the regional level it is demand that determines output and therefore the lack of a supply-side was not considered critical to the research outcome.

The next stage of the research analysed the data gathered in chapter seven. Using bivariate correlation to verify association between the variables a causal chain was established between employment levels through population change to completions. Therefore, during the study period, 1995 to 2002, higher levels of completions can be attributed higher levels of population growth, which itself was driven by higher employment levels either within the region in question or neighbouring regions. Given that home ownership is generally seen as the optimum tenure movement to areas of stronger employment growth creates both the demand and the ability to fund purchases of private sector output. Although land supply and planning are at the beginning of the development process in this model they fit at the end, being a reaction to rather than a motivation for development.

The difficulty here as with other attempts to understand the development process has been to capture the dynamic nature of the industry. The analysis in chapters seven and nine were somewhat static in nature, as must be any analysis using secondary data to some degree. Given that data collected from a period in time then aggregated or taken from a point in time will then become essentially 'point' data. This loses the

dynamic nature of the events occurring, particularly as in the case of house building where the 'parts' of the process are occurring both consecutively and concurrently.

One of the issues raised by this thesis is whether private house-builders attempt to fully satisfy demand, or whether the level of production is set to conform to the goals of the firm. This thesis argues that based on the model of house builder behaviour presented it is the goals of the firm that take precedence. Evidence presented in this thesis suggests that, to some degree at least, larger residential developers are in fact operating below full capacity, as Kalecki's pricing model also suggests. This is also supported by the findings of Responses to the questionnaire suggest that generally "*production has tended to be adjusted in our industry to accord with demand, i.e. market conditions*" (respondent 006). Given that developers cannot know future levels of demand and that the cost of holding unsold stock is high, potentially bankruptcy, it also seems *rational* to 'short build'. This was also one of the conclusions of the Barker *Review of Housing Supply* (2004).

The second question of how the behaviour of larger firms impacts on output is more difficult to determine, but the difference is land-banking practises are an indication that their influence in likely to be disproportionate. Further, the finding that there is a greater likelihood of their responding to stimuli with price changes and accepting Kalecki's model of pricing, as this thesis does, then the industry price will reflect the larger firms behaviour, at least in the longer term. For example, if larger firms are able to increase their prices they will be able to pay a higher price for replacement land, unless smaller firms follow suit they risk being 'priced out' of the land market.

## 4. Future directions and consequences

This thesis has established the 'means' and the 'motive' for the short build thesis, but proving the 'crime' may be more problematic. One way of testing the short-build hypothesis may be to build a statistical model of the demand-side and compare this with observed output levels at the regional and/or national level. However given the availability and reliability problems with the data this is unlikely to prove successful. Alternatively, it may be possible to find evidence of the use of 'market power' in the differences observed between the prices of new dwellings and the existing stock. An

alternative approach would be to conduct further questionnaire surveys focussing on the formation of 'future expectations' and 'uncertainty'. It may also be useful to take a more qualitative approach to the research by conducting interviews with house builders in order to gain deeper insights into expectations and motivations.

A greater understanding of the motivations and limitations of house-builder behaviour will have important ramifications for planning policy. The re-use of previously developed or 'brownfield' land also increases the uncertainty faced by developers, both limiting the potential for land banking and the cost of remediation. The current policy preference for these sites tends to favour larger developers with in-house experience and the financial flexibility to deal with delays in development (Adams and Watkins, 2002), and may lead to a further concentration within the industry, although Wellings (2006) observes that a number of smaller house-builders are successful in this area. Greater stability within the general economy will also help to reduce uncertainty over future demand.

The central tenet of the recommendations of the Barker *Review of Housing Supply* (2004) is that if the supply of land for development were increased, this would be taken up by a larger number of house builders, increasing both the level of competition and the responsiveness of housing supply. In response the government committed itself to reforming the planning system, "*to ensure plans are more responsive to changing demands, and prepare and release more land, in the appropriate places, and at the appropriate times, to meet future housing requirements*" (HM Treasury, 2005 p5). One of the key policy issues that this was expected to address was housing affordability, and in this respect the government initiated further research into the implications of affordability targets on housing supply (ODPM, 2005). The research found that "*large increases in construction do have significant effects on affordability, …But the increases in construction have to be large*" (ibid. p48).

Accepting that 'large' increases in house building will reduce house prices, the question remains, if more land was released for development would this result in more houses being built? Given that much of the capacity, particularly labour skills, has been lost during previous recessions and are slow to be replaced (Ball, 1996 p33)

increases in house building are likely to be slow. Therefore, any increase in land supply will initially result in a shift in market power enabling house-builders, rather than landowners, to capture the larger share of the development gain (Ball, 1983 p143-4). Neither current homeowners nor house-builders would benefit from a fall in house prices. Homeowners because of 'negative equity' and a fall in the value of their investment; and house-builders because it will reduce the profitability of developing existing sites. In both cases a fall in nominal house prices is likely to result in a fall the number of existing dwelling offered for sale whilst homeowners wait for prices to rise again, and house-builders are also likely to reduce development until profitability returns. The alternative is to encourage more houses to be built, not sufficient for house prices to fall, but enough to slow or stop the rate of growth in house prices allowing affordability to improve slowly. Bramley and Leishman (2005) estimated that an increase of 71 per cent in housing supply would be required to eliminate house price growth.

However, this still does not answer the question of whether or not house-builders would increase production if land were made available. Ball finds the claim that the volume and speed of planning decisions are the primary constraint to house building "*difficult to justify*" given the relative size of most house-builders land banks (1983, p112). Evidence suggests that housebuilders build to meet demand as it emerges (Ball, 1996 p28). Without a fall in prices, at least in real terms, there will be no increase in demand. Without an increase in demand house builders will not build more houses. This 'chicken and egg' situation, where large increases in supply are needed to reduce house prices, but lower house prices are needed to increase demand and as a result supply, suggests that simply increasing land supply will not increase the supply of new housing and consequently not improve affordability. This scenario assumes that currently there is an 'equilibrium' between supply and demand at current prices, however, one of the main hypotheses of this thesis is that it is rational for house builders to short-build given the uncertainty of future demand. If this were the case then there is likely to be excess demand at current prices and as a result if house builders did increase output price would not need to fall for it to be sold. The consequence of this is argument is that house builders are unlikely to increase supply sufficiently to reduce house prices and improve affordability. In this case there may be as Bramley and Leishman conclude a "*role to be played by direct delivery*

*vehicles for housing land development, to enhance the take-up of allocated land*"
(2005 p2237).

## 5.    Reflections on method and methodology

The primary hypothesis of this research was that:

> "*there is a set or bundle of factors that determine the spatial variation in market-sector housing production, that the value of the factors may vary for each region, the influence may vary regionally, and that the value and influence will vary through time.*

To identify potential factors the research employed two methods; firstly, a literature review was undertaken to ascertain the factors that had been identified by previous research. Secondly, a questionnaire survey of house-builders, to identify the factors considered when making production decisions. Data on these were then collected and examined for possible correlation with observed levels of output. The intention was to reduce the possibility of the selection of spurious factors by the triangulation of theory, with quantitative and qualitative methods. The intention was to reduce the possibility of the selection of spurious factors by the triangulation of theory, with quantitative and qualitative methods. Whilst it is argued that overall the methods employed were successful in achieving the research aims, some shortcomings were identified.

Due to the small number of house-builders meeting the sampling criteria it was not possible to follow the established practice of piloting the survey. Although a useable response rate was achieved (useable in that it allowed statistical analysis to be performed) it did not allow the exploration of themes as they emerged. The use of interviews in this case would have allowed some flexibility in the investigation of key areas. However, given that some of the key findings of the research, such as the observation that firms of differing size exhibit differences in behaviour, it is considered that the benefits outweighed the shortcomings. However, the use of interviews would strengthen further research in this area.

The majority of the secondary data explored in chapter seven was drawn from two sources, ODPM (either directly or via ONS publications) and HM Land Registry (HMLR). The expectation was that the data would have been subject to similar collection and aggregation methods, limiting some of the potential problems. One problem that was not anticipated was the differences in the delineation of the English regions between these two sources. The ODPM uses Government Office Regions whilst HMLR use standard statistical regions. Because of the differences in these four of the nine English regions have different boundaries, with in some cases quite large areas and populations changing region. As a result some of the apparent correlations must be taken as indicative only of a potential association. The ODPM produces a house price index based on a 5 per cent sample. Whilst the sample is collected from members of the Mortgage Lenders Council and so excludes cash purchases, it is mix adjusted (i.e. the prices are weighted so that the number of detached, semi, terraced houses etc. remain the same each period) and it is also based on Government Office regions. However, the larger sample of the HMLR data was preferred, but any further research may find it useful to consider the ODPM index in more detail.

The analysis of the data in Chapter Nine attempts to capture statistically the influences of various factors on regional house building. It also tries to order these in terms of a causal flow. Due to the nature of secondary data the analysis is static in nature and fails to capture the dynamic nature of the house building industry. It also has no ability to accommodate 'social relations' or 'institutional structures', weakening the results to some extent.

Overall the adoption of a realist ontology and a grounded theory method has allowed the research to move towards a robust explanation of the causes of variation in regional market section housing development. The use of triangulation has allowed the thesis to develop a more holistic explanation of house-builder decisions and market sector housing output. However, in line with the SHP thesis this could be developed further and strengthened by more detailed analysis of the planning system, the mortgage finance system and house buyers. This thesis has concentrated, although not exclusively, on the impacts associated with the behaviour house-building firms, but all of these areas influence the observed outcomes.

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APPENDIX ONE

Sample questionnaire

Name:          ---------------------------------------------

Position:      ---------------------------------------------

Company:       ---------------------------------------------


1.  What is your average annual number of completions?

    --------------------------------------------------------------------------------

2.  What is your approximate number of full time equivalent employees?

    --------------------------------------------------------------------------------

3.  In which of the English regions is your company active?

    | East Anglia | East Midlands | London |
    |---|---|---|
    | South East | South West | North East |
    | North West | Yorks. & Humber | West Midlands |

4.  How important is each of these goals to your company?

    |  | 1 | 2 | 3 | 4 | 5 |
    |---|---|---|---|---|---|
    | Growth of the firm | | | | | |
    | Long-run market share | | | | | |
    | Long-run profits | | | | | |
    | Long-run sales revenue | | | | | |
    | Long-run sales volume | | | | | |
    | Short-run market share | | | | | |
    | Short-run profits | | | | | |
    | Short-run sales revenue | | | | | |
    | Short-run sales volume | | | | | |

    *1 = very important          5 = unimportant*

5.  Are separate annual production targets set for each region in which the company operates?

    Yes          No

6.  Do regional offices submit targets or are they set nationally?

    Nationally set          Regionally submitted

7.  Are production targets set for:

    Profit          Units          Both

8.  Are production targets informed by a longer-term strategic plan?

    Yes          No

9.  Are production targets informed by formal market research?

    Yes          No


10. What long-term variables are considered when setting production targets?

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11. What short-term variables are considered when setting production targets?

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12. Do the variables under consideration vary between regions?

    Yes               No

13. Are there any other points you would like to make regarding the setting of production targets?

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14. What proportion of your production takes place on land purchased with a view to starting construction as soon as possible (rather than land drawn from your land bank)?

    <50%          50-75%          >75%

15. What is your average land bank holding?

    1 - 2 Years      2 - 3 Years      3 - 4 Years      > 4 Years

16. What proportion has current planning permission?

    < 40%        40% – 60%      60% - 80%      > 80%

17. What proportion is held on 'options' or 'conditional contracts'?

    < 25%        25% - 50%      50% - 75%      > 75%

18. What types of site, if any does your company prefer to develop?

    Small brown-field (10 units or less)        Large brown-field

    Small green-field (10 units or less)        Large green-field

19. At what level is there flexibility in the budgeted production targets?

    National board        Regional board

    Other             Please specify      -------------------------------

20. At what intervals do scheduled production reviews occur?

Monthly         Quarterly         Half yearly         Annually

21. How often do production reviews occur in response to contingencies rather than as scheduled?

     Very often         Often         Occasionally         Rarely

22. What factors effect your ability to change your rate of starts in response to a change in demand?

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23.  On average, how quickly are you able to change you rate of starts in response to a change in demand?

     < 3 months                3 – 6 months

     6 –9 months               > 12 months

24. What factors effect your ability to change your rate of completions in response to a change in demand?

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25. How likely are you to review prices when:

                                        Likely         Unlikely

     New house market activity increases

     New house prices increase

     Second hand market activity increases

     Second hand prices increase

26. How likely are you to review production levels when:

                                        Likely         Unlikely

     New house market activity increases

     New house prices increase

     Second hand market activity increases

     Second hand prices increase

27. During the period 1988 – 1998 the average number of dwellings completed per 1,000 population in East Anglia was 3.9, but over the same period in the North-

West the figure was only 2.4. What factors do you think are most likely to have influenced the difference in completions between the two regions?

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28. What are the main factors that influence how many dwellings your company builds each year?

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29. Have you any other comments regarding the issues raised in this questionnaire?

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Would you be prepared to participate further in the research by answering further questions in a short telephone interview or by e-mail?

Yes            No          Tel no.     ---------------------------------------

                                           E-mail      ---------------------------------------

May I take this opportunity to thank you for taking the time to complete this questionnaire and assure you again that you responses will remain confidential.

**APPENDIX TWO**

**Responses to open questions**

**What long-term variables are considered when setting production targets?**

001/   *Likely demand; Demographics; Labour supply; Land supply.*

002/   *Availability of land, labour and cash.*

003/   *Market forces; planning issues; land availability.*

004/   *Market conditions; labour availability; land availability; costs.*

005/   *Plots availability; state of market.*

006/   *Land supply; view of housing market; management capacity.*

007/   *Land supply; market share; regional demographics e.g. household formations; competitive advantage.*

009/   *Market; logistics; land availability.*

010/   *Sales expectations; profit targets; cash targets.*

011/   *Land availability; works in progress costs; sales demand.*

012/   *Land availability/planning.*

013/   *Market conditions; economy; site based factors.*

014/   *Land availability and the time taken to achieve starts from planning; markets; long term plans – reviewing.*

016/   *Interest rates; liquidity; planning constraints; land supply.*

017/   *Availability of land; planning times.*

018/   *Potential sales.*

019/   *Market; inflation; interest rates; land supply.*

020/   *Investor's strategy; market conditions; planning restraints; land bank.*

021/   *Land bank; level of capital employed; capacity of region.*

022/   *Land; labour; market conditions; planning consents.*

023/   *Market forces; land availability; planning.*

024/   *None.*

025/   *Availability of land; workforce resources; sales mix; cashflow.*

026/   *Cost; profit growth.*

027/   *Exercising option agreements; prediction for planning consent; prediction of section 106 agreements; working with planners to successfully gain planning permissions.*

028/ *Economy; current and projected interest rates; land availability; growth target in 3yr business plan.*

**What short-term variables are considered when setting production targets?**

001/    Likely demand; Labour supply.

002/    Group targets on margins and profit.

003/    Local factors; Economies; Planning.

004/    Labour constraints; booking levels; costs.

006/    Production capacity; land in place; sales market.

007/    Land availability/pipeline; internal resources; profit targets.

009/    Market; logistics; land availability.

010/    Sales expectations; profit targets; cash targets.

011/    Cash availability; works in progress; labour availability.

012/    Sales performance.

013/    Site based factors; local demand.

014/    Market for new houses; existing and/or new product; labour; budgets versus plan.

015/    Interest rates; land availability; government policy.

016/    Labour supply; City bonuses; land supply.

017/    Availability of land; planning times.

018/    Potential sales.

019/    Market; inflation; interest rates; land supply.

020/    Land bank; regional demand; supply constraints; WIP bank.

021/    Land bank; level of capital employed; capacity of region.

022/    Labour; sales rate; technical information; in house team capacity.

023/    Planning; consumer demand.

024/    None.

025/    Availability of land; workforce resources; sales mix; cashflow.

027/    Once planning awarded - whether flats or houses; ground conditions; difficulty of build; regional sales demand.

028/    Availability of management; ditto labour.

**Are there any other points you would like to make regarding the setting of production targets?**

001/ *Work in progress must be kept at a level which satisfies demand but allows a proper return on capital employed.*

005/ *If one buys land then one builds or goes bust! Therefore build is driven as much by simple site availability as by the market.*

009/ *Have to be flexible.*

012/ *Targets are driven by past experience of site performance and overall company profitability target short term.*

013/ *Flexibility as year progresses.*

014/ *Also within a region there are many variables e.g. pent-up demand, location desirability.*

022/ *Build team rarely told to slow. Most units sold prior to completion. Growth is about land, planning and build not sales. Bottom up production target based on available plots.*

024/ *Get in – Get on – Get out.*

027/ *Working with local authority to discharge planning conditions.*

**What factors affect your ability to change your rate of starts in response to a change in demand?**

*001/   Principally labour supply but may also be planning restraints due to infrastructure constraints.*

*002/   Planning.*

*003/   Local labour skills availability; planning issues; Competition.*

*004/   Availability of labour.*

*005/   Planning.*

*006/   Planning consents; having land in place.*

*007/   Labour and materials availability; strength/certainty of demand change; return on capital.*

*009/   Sub-contract orders; labour requirements.*

*010/   Available land supply with planning.*

*011/   Existing stock levels; finance charges.*

*012/   Land holding; planning approvals in place.*

*013/   Extent of order pipeline; efficiency of production; sales targets.*

*014/   Planning process on available land; subcontractor quality.*

*015/   Planning consents; staff resources; having market trends.*

*016/   Labour supply; cost.*

*017/   We never flex production. We are a production line. Sales must sell whatever production produces.*

*019/   Planning consent.*

*020/   Subcontract/supplier orders; stage of build on site on other units; planning constraints.*

*021/   Availability of sub-contractors.*

*022/   Planning permission; technical information; hard to change quickly.*

*023/   Labour; materials; planning.*

*024/   None.*

*025/   Availability of land; the planning process; construction resources available; cashflow.*

*026/   Profit growth.*

*027/   Having good reliable labour/sub-contractors. Good communication between office and site. Good communication between sales and head office.*

**What factors affect your ability to change your rate of completions in response to a change in demand?**

001/    Again, supply of labour. The demands on finishing trades can be critical in popular locations.

002/    Planning.

003/    Local labour skills availability; planning issues; Competition.

004/    Build time; build quality; labour and response of external advisors, e.g. solicitors, mortgage brokers etc.

005/    Communication.

006/    Production capacity; shortage of skilled sub-contractors.

007/    Labour and materials availability; strength/certainty of demand change; return on capital.

009/    Cash constraints; work in progress.

010/    Available land supply with planning; labour and supervision availability to meet established quality standards.

011/    Labour availability; cost of work in progress.

012/    Short term production; stock level.

013/    Marketing/price response.

015/    Production/stock levels; planning consents; finance availability.

016/    Labour supply; cost; profitability.

018/    Production.

019/    Resource availability.

020/    Subcontract/supplier orders; stage of build on site on other units; planning constraints.

021/    Sub-contractor performance.

022/    Production programme; labour/planning; very limited on small sites.

023/    Availability of labour and site staff.

024/    Labour shortages.

025/    Construction resources available; cashflow.

027/    Availability of labour/sub-contract trade labour; employing additional site staff (employed staff) i.e. finishing foreman, labourers etc.

**During the period 1988 – 1998 the average number of dwellings completed per 1,000 population in East Anglia was 3.9, but over the same period in the North-West the figure was only 2.4. What factors do you think are most likely to have influenced the difference in completions between the two regions?**

001/ *Employment levels, particularly related expansion of service and financial sectors in East Anglia versus decline in manufacturing in the North West.*

003/ *Land availability; planning conditions.*

004/ *Land availability and planning policy restricting the supply of land and planning.*

006/ *Market demand; availability of sites with planning consents.*

007/ *Sales demand; availability of land; perception of "value" by builders and purchasers.*

009/ *Desirability of area; ongoing increased age of population and retirement relocation patterns; availability of funds.*

010/ *Underlying economic growth and rate of household formation; speed of release of planning approvals and willingness of LA to grant permission; rate of inward migration and impact on demand.*

011/ *East Anglia commutable to London by train or road; stronger economy in East Anglia due to influence of Cambridge University and large drug companies; East Anglia is based on service industries rather than traditional manufacturing creating more confidence.*

012/ *Demand from newcomers to region, my understanding was East Anglia acted as a London overflow.*

013/ *Economic growth patterns; demographic movements.*

014/ *We operate in neither area. In the 1980's the reasons were (previous company experience) 1/ less buoyant economy in North West leading to lower levels of confidence and affordability combined with cheap second hand stock. In East Anglia the commutability to London with relatively cheap house prices compared to the South East was a major factor. These factors probably pertained with the early 90's slump to the mid 90's at least.*

015/ *Population density in East Anglia is lower; Estate housing stocks in North West greater and available for refurbishment; planning attitudes and constraints vary regionally.*

016/ *Availability of land; economic (regional) conditions; demand; planning.*

018/     *Employment/economic prospects.*

019/     *Demand; land supply.*

021/     *Existing stock; under/over development in prior years; planning policies.*

022/     *Market demand – reducing population in NW; low incomes; low house prices.*

023/     *Consumer demand; land availability; planning problems.*

024/     *Availability of work for purchaser.*

025/     *Demand.*

026/     *Profitability; planning.*

027/     *Employment/increased opportunities; migration south; migration from London to the shires.*

028/     *Market forces; strength of local market, inward migration to local areas.*

**What are the main factors that influence how many dwellings your company builds each year?**

001/ Maximisation of margins to ensure best use of land bank, essential to retain sufficient cash to replace land. Utilisation of land bank to achieve targeted ROCE. Timing of planning decisions. Building procedures – new innovations should speed up production.

002/ Availability of resources – cash and land in particular.

003/ Customer demand; planning conditions; land options.

004/ Planning is an important factor in securing land. In addition availability of labour is becoming increasingly more important.

005/ Planning; site availability; sales demand projections; need for growth.

006/ Requirement to grow pre-tax profits progressively; having land in place with right planning consents; production capacity; management capacity.

007/ Land availability; capacity; internal resources; market trends.

009/ Land supply; profit requirement; planning approvals.

010/ Market supply and demand; cash constraints; profit targets; staff availability.

011/ Land availability; funding; potential profit opportunities.

012/ Demand; land supply/planning.

013/ Sites with planning; market and economic background; stock market expectations.

014/ Land availability and cost; market review; hence profitability.

015/ Availability of land and the appropriate consents; financial resources; staff resources.

016/ Land supply; planning delays.

017/ We build at the fastest rate possible on every piece of land we can buy.

018/ Sales.

019/ Demand; land supply; planning consent.

020/ Investor strategy and profit targets; land availability and planning.

021/ Land supply; level of capital employed; availability of sub-contract labour.

022/ Land and planning; usually cannot spend entire land budget. If spent next constraint will be technical information, then production - not sales.

023/ The availability of land being processed through the planning process and the market demand.

024/ Planning.

*025/  The planning process; finance.*

*026/  Profit growth; planning permission.*

*027/  Land purchase; planning consents; sales demand. Certainly land buying and planning processes are the main factors.*

*028/  Land availability; cashflow.*

**Have you any other comments regarding the issues raised in this questionnaire?**

001/     *As a plc this group has focused on sustainable growth in profits, at a targeted minimum. Return on capital employed. It has not focused on volume growth at the expense of margins.*

009/     *Government wants more housing (PPG3) – local planning authorities make it increasingly more difficult.*

012/     *The major constraint on our business is the new planning guidance issued as PPG3. This controls the number of outlets available, the type of outlet and the product. All of which constrain demand. Without these constraints demand for new housing would be much higher.*

021/     *Level of turnover and margins are given a higher priority than volume of units.*

022/     *Key trends – confused planning system; complex sites/build; skills shortage on site.*

024/     *We target profit not turnover. We target profit not number of units. We target each project individually for sales and build on a weekly basis.*

026/     *Planning delays drive decisions.*

APPENDIX THREE
Causal Chain flowchart