Buy-to-let mortgage lending and the impact on UK house prices: a technical report

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Summary

This paper investigates the impact of Buy-to-let (BTL) on UK house prices. The establishment of BTL mortgages at a specified time point in 1996 Q3 made it possible to estimate their average inflationary impact on house prices. In order to control for other possible factors that influence house prices a simple regression model was built that included other variables identified by the literature as important determinants of house price movements. In controlling for these factors it was therefore possible to observe the independent effect of BTL mortgages on the time series. The results suggest that the gross amount of BTL lending may have increased the average UK house price by up to 7 per cent by 2007 Q2. This estimate represents the upper bound. The paper discusses the impact this might have on the affordability of housing and the implications for the UK housing market.

I. Introduction

Buy-to-Let (BTL) is characterised by private investors who purchase residential property using mortgages in order to rent out accommodation to tenants. The property is an investment asset on which they earn a rental return and achieve capital gains as house prices rise over time (Ball, 2006).

In the last decade one of the most significant features of the UK mortgage market has been the rapid growth in the size of the BTL market. The BTL mortgage product has given investors the means to borrow easily and at competitive rates. Since its introduction in July 1996, following an initiative launched by the Association of Residential Letting Agents (ARLA), BTL mortgages have grown to over 991,600 by end September 2007, with a value of over £116 billion (CML, 2007). This period coincides

with a large and sustained increase in real house prices and a downturn in the number of mortgages to first time buyers. This has prompted much speculation that BTL investment has added to house price inflation and has crowded out first time buyers (e.g. Sprigings, Nevin, and Leather, 2006).

There are good reasons to assume that the rapid growth in BTL investment has increased house prices. The record levels of investment could have raised demand and with supply more or less fixed in the short-term, this would help to push up prices. Furthermore, others have argued that the consequence of large scale investment activity in the housing market is the break in the relationship between house prices and average earnings (Sprigings, Nevin, and Leather, 2006). However, there is little published empirical research on the impact of BTL investment on house prices.

The published studies that have looked at this issue have been mainly qualitative. For instance, one local level study of Glasgow found that one in three landlords explicitly attributed the rental market investment to contributing to higher house prices (Gibb and Nygaard, 2005). But this is just anecdotal evidence from a small number of investors. A second local level study also included anecdotal evidence that the buoyancy of the private rented sector of Burngreave in Sheffield had contributed to house price inflation (Hickman et al, 2007).

These local qualitative studies are at odds with the findings from econometric research on UK house prices. The econometric work shows that a large proportion of the variance in house prices over time can be explained by fundamental economic and demographic factors. For instance models of the UK housing market show that prices change in relation to real incomes, the number of households, population trends, expectations, credit availability and the cost of borrowing (e.g. Meen, 2006; Muellbauer and Murphy, 1997; HM Treasury, 1992; Drake, 1993). However, the raised availability of mortgage finance is known to stimulate the demand for housing (Pain and Westaway, 1996) and this might suggest that the introduction of BTL mortgages raised demand, and therefore house prices, independently of other factors. An unpublished econometric study of the UK housing market by Oxford Economics in 2006 also suggests that this may be the case (cited by National Housing Federation, 2007).

The purpose of the current study was therefore to model UK house prices in the period before and after the introduction of BTL mortgages in the third quarter of 1996 to investigate the hypothesis that BTL mortgage investment has impacted on price levels.

The paper is divided into sections. Section II reviews the findings from a number of econometric studies on UK house prices and aims to identify the key explanatory variables on house price trends. The following Section III details the data used in the study and Section IV explains the method used to evaluate the impact of BTL on house prices. Section V reports the results and Section VI discusses the findings and their implications in relation to the UK housing market.

II. Review of the key influences on house prices

House price models

There is no single unified model of house prices but the most important determinants of long-run house prices have been found to be disposable incomes, changes in supply, demographic changes, mortgage availability, interest rates, and expectations of capital gains. The data and form in which these factors are expressed varies across the literature but most models of house prices capture these variables in some way. Seasonal effects have also been found to have some influence (Meen 2006; Reichert, 1990).

Incomes

Increases in real disposable income have been found to be one of the strongest predictors of house prices in the UK. In recent years, with low inflation and sustained economic growth, real disposable incomes have risen steadily. Income though can be measured in different ways. Aggregate real disposable income has been used by some (Drake, 1993) and real disposable non-property income has been used by others (HM Treasury, 1992) but both yield similar results (Pain and Westaway, 1996). Real household disposable income and real household disposable income per capita have also been used, which also account for population and household growth. These again have been found to be positively correlated with house prices. A variable to measure real household disposable income per capita (RHDIPC) is included in the house price model described in this paper. The expectation would be that a positive change in RHDIPC would result in increased house prices.

Demography

Population growth puts direct pressure on the demand for housing services, especially if the majority of the population growth is in the home-buying age group with significant income or effective demand. HM Treasury (1992) used population growth of the 25 to 29 age group in their dynamic model of house prices but other models have not found this to be significant (Pain and Westaway, 1996). A specific population variable is not included in the current model but it is a part of the income per capita variable, as is the number of households (RHDIPC).

Mortgage lending

The amount of mortgage lending is related to house prices (Pain and Westaway, 1996). The model used in this paper includes an explicit measure of mortgage lending in order to estimate the impact of BTL lending on house prices, and to control for the overall amount of lending and mortgage lending practices.

However, about a third of the mortgage market is made up of remortgages (CML, 2007). Among owner-occupiers over half of all remortgages are made to finance home improvements and about 40 per cent are to switch to better mortgage deals (Smith and Vass, 2004). Of the remainder only a small minority of remortgages would be made to finance a major purchase like an additional home. Remortaging within the BTL sector would appear to operate differently. The BTL investor will often remortgage in order to fund the purchase of another property because this is a more efficient use of capital (Datamonitor, 2004). Indeed, almost half of all BTL landlords funded deposits on the purchase of another property by a remortgage on an existing BTL property (Scanlon and Whitehead, 2005). Therefore, in terms of approximating the demand for housing

that arises from mortgage finance, it is more appropriate to consider the combined total value of mortgage advances for home purchases and the total of all BTL advances. In the model described in this paper this measure is expressed in real terms (MORTADV). The model would be expected to show a positive relationship between real mortgage lending and house prices.

Mortgage interest rates

House prices are sensitive to changes in mortgage interest rates. A rise in mortgage interest rates increases the cost of home ownership relative to other consumption items. Furthermore, rising interest rates increase the opportunity cost associated with property investment and therefore both factors work to reduce real house prices. Consequently a negative relationship is observed in the literature between mortgage interest rates and real house prices. The nominal mortgage rate is included in the current model (MORTRATE) as a separate independent variable and as part of the housing user cost (see below).

Housing User Cost of Capital

Accelerating house price inflation reduces the real cost of housing and may stimulate property investment as buyers increase their consumption of housing services in anticipation of future capital gains.

There are various ways of measuring the expectation of capital gains or the speculative demand for housing. The simplest measure is to measure house price inflation at time t over the previous period. This has been shown to be positively correlated with house prices (Reichert, 1990) but other have used a more sophisticated measure of the User Cost of Capital (UCC) that measures the real user cost of housing by subtracting the cost of housing from the anticipated capital gain (Meen, 1990). The UCC is used in the current model and is calculated as:

$$\varphi = r + t + \delta - \frac{p_h}{p_h}$$

Where:

φ is the user cost,

r is the nominal mortgage interest rate

t property tax as a percentage of house price

δ the rate of deprecation assumed to be 1 percent of the real house price,

$\frac{p_h}{p_h}$ the capital gain in real house prices.

Seasonality

Seasonality commonly affects house prices and is built into national and regional models (Meen, 2006; Reichert, 1990). Historically UK house prices (as a measure of demand) are weakest in the fourth quarter and strongest during the second. The current model does not need to include seasonal effects because the house price time series that is used is seasonally adjusted. This is important because it allows the modelling of the underlying change in prices.

Housing stock

The size of the housing stock has been found to be negatively related to house prices. In other words prices fall in real terms, all other things being equal, when the housing stock increases (Meen 2006). However, the price effects of changes to the housing stock are partly mitigated by changes to the number of households. When the number of households grows faster than the rate of supply then shortages occur and this is reflected in increased house prices. The current model attempts to measure these relationships by taking the ratio of the housing stock to the number of households (VACANCY). When the ratio increases (i.e. when there is more stock in relation to the number of households) prices would be expected to fall.

Repossessions

The number of mortgage repossessions in relation to the housing stock has been included in a number of house price models (e.g. Breedon and Joyce, 1993; HM Treasury, 1992). A rise in the repossession rate directly impacts on house prices because it brings more properties onto the market. It can also be seen as a proxy variable that is related to a number of influences on house prices. For instance, repossessions in the UK have been shown to be related to the homeownership rate, the income distribution, the proportion of part-time workers, the unemployment rate, the proportion of first time buyers, change in the household debt to income ratio, the mortgage interest rate, and previous house price growth (Meen, 2006). The repossession rate is therefore included in the current house price model (REPRO) and a positive change in the repossession rate would, all other things being equal, be expected to lower house prices.

III. Data

Quarterly data house price data was obtained from the Nationwide Building Society for the 15 year period 1993Q1 to 2007Q2 (see Figure 1). There are other house prices indices that use different methodologies but they give very similar long run trends (Wood, 2005). The Nationwide series though was chosen over the alternatives because it is mix adjusted and so controls for possible bias in the type of stock sold in any one period and is therefore preferable to simple average house price data. The Nationwide also produce a time series that adjusts their mix adjusted price for the Retail Price Index (RPI) and this allows house prices to be compared in real terms over time. It is also seasonally adjusted (Nationwide, 2007).

Figure 1: ΔLog real house price (1993Q1 to 2007Q2)

Data on economic, demographic and housing variables was obtained from the Office of National Statistics (ONS) and the Department of Communities and Local Government (CLG). Mortgage data was provided by the Council of Mortgage Lenders (CML) and by a major BTL mortgage lender. Full details are contained in the Data Appendix.

IV. Method

In order to estimate the impact of BTL mortgage investment on house prices a form of quasi-experimental design was used that compared actual house prices to a counterfactual house price following the introduction of BTL mortgages in 1996 Q3. The counterfactual house price was the estimate of what house prices would have been had there been no BTL mortgage lending. The difference between the actual and counterfactual house price was assumed to be attributable to BTL. It should be noted that this also assumes that non-BTL mortgage lending would have remained unchanged if there had been no BTL mortgage lending. In reality, if BTL mortgages had not existed, there probably would have been some upward shift in non-BTL mortgage advances. Therefore the estimates reported in Section V represent the upper bound.

The counterfactual house price was estimated from an ordinary least squares time series regression model (OLS) of house prices. This model was based on variables identified by the literature as important determinants of house prices. In controlling for these factors it was possible to observe the independent affect of BTL mortgages on the time series.

While less serious in time series data, multicollinearity is a potential problem in explanatory models. This can lead to less precise estimates in the regression terms. The house price model was systematically checked for possible collinearity problems. Inter-correlated variables were either deleted from the model to observe the impact on the coefficients of the remaining variables or were combined into composite variables. For example, there was a high level of correlation between the number of households and the total housing stock. These variables were consequently combined to produce a single VACANCY variable that attempted to measure the ratio of housing stock to the number of households. Similarly variables related to real disposable income, households and population were highly inter-correlated and so were formed into a variable to measure *Real household disposable income per capita* (RHDIPC).

The final model therefore took the following form:

$$\Delta \ln(HP_t) = \beta_0 + \beta_1 \ln(HP_{t-1}) + \beta_2 (MORTRATE_t) + \beta_3 \ln(VACANCY_{t-1}) + \beta_4 \Delta \ln(VACANCY_{t-4}) + \beta_5 \ln(RHDIPC_{t-1}) + \beta_6 \ln(REPRO_{t-1}) + \beta_7 (UCC_t) + \beta_8 \ln(MORTADV_t) + e_t$$

where:

HP = Real mix adjusted UK house price

MORTRATE = Nominal mortgage rate (%)

MORTADV = Real mortgage advances for house purchases, plus total BTL advances

VACANCY = Ratio of estimated UK housing stock to total households

RHDIPC = Real household disposable income per capita

UCC = Housing user cost of capital

REPRO = Repossessions as a proportion of the housing stock (%)

$\beta_0 \ldots \beta_7$ = Represent the intercept and the regression coefficients (or elasticities) associated with their respective explanatory variables

ln = the natural log of the continuous variables described above

e_t = error term for the quarter

$_t$ = time period in quarters

V. Results

All the variables included in the final model apart from UCC, RHDIPC and the change in the VACANCY variable were statistically significant at the 5 per cent level or better and all carried a sign in the expected direction. The variable RHDIPC and was significant at the 10 per cent level. The UCC and the change in the VACANCY variable were statistically significant at just outside the 10 per cent level and had a sign in the expected direction and were therefore included in the model.

Table 1: House price OLS model (1993Q1 to 2007Q2)

Dependent variable: $\Delta \ln(HP_t)$

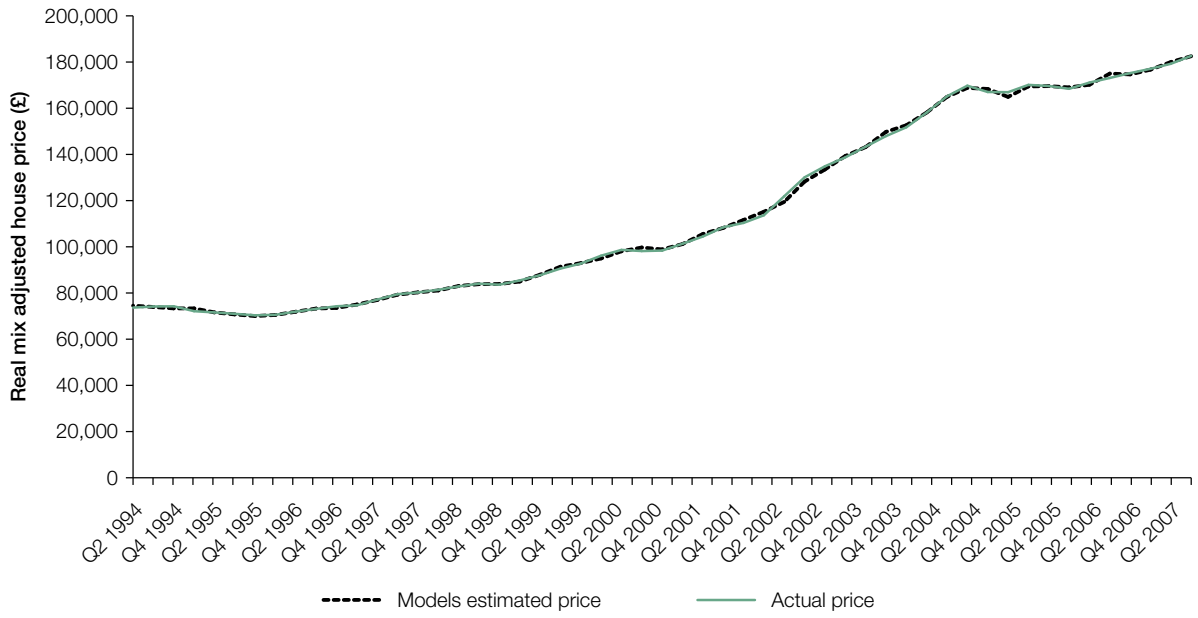
Variables	Coefficients	
Constant	1.145	***
	(0.51)	
$\ln(HP_{t-1})$	-0.226	***
	(0.044)	
$MORTRATE_t$	-0.005	***
	(0.002)	
$Ln(VACANCY_{t-1})$	-0.064	***
	(0.028)	
$\Delta \ln(VACANCY_{t-4})$	-0.003	
	(0.030)	
$Ln(RHDIPC_{t-1})$	0.133	*
	(0.083)	
UCC_t	-0.001	
	(0.000)	
$Ln(REPRO_{t-1})$	-0.029	***
	(0.010)	
$Ln(MORTADV_t)$	0.081	***
	(0.012)	
R^2	0.835	
SEE	0.009	
F	18.927	

*Note: ***, **, * represents significance at 1%, 5% and 10% levels respectively. Figures in parenthesis are standard errors.*

The final model had a R^2 value of 0.835. In other words the model explains more than 83 per cent of the variation in house prices over the time period. The Standard Error of the equation was also small at 0.9 per cent (SEE=.009).

Figure 2 shows the fit of the model in comparison with actual house prices over the period. No prediction is made post 2007Q2 due to data on all predictor variables not being available.

Figure 2 Actual versus estimated UK real mix adjusted house prices (1994Q2 to 2007Q2)



The regression results suggest that a 1 percentage point increase in the mortgage interest rate (MORTRATE) would reduce house prices by 0.005 per cent in the next quarter. The long-run elasticity implied by the model is for there to be a 2 per cent fall in house prices for a 1 percentage point rise in interest rates.

Per capita real household disposable income (RHDIPC) contributes positively to house prices, with a 1 percent increase in income increasing house prices by 0.13 per cent in the next quarter, with the long-run effect suggesting that a 1 per cent increase in incomes increases house prices by 0.58 per cent. This is less than that reported in other studies but it should be noted that the results from the model are not comparable to others because the model is specified differently, particularly since it includes mortgage advances.

The ratio of houses over the number of households (VACANCY) also lowers house prices. The model suggests that a 1 per cent increase in the ratio of houses to households should decrease prices in the next quarter by 0.064 per cent and in the long-run by 0.28 per cent.

As expected mortgage repossessions depress house prices. A 1 per cent rise in repossessions reduce prices by 0.029 per cent in the next period and by 0.13 per cent in the long-run.

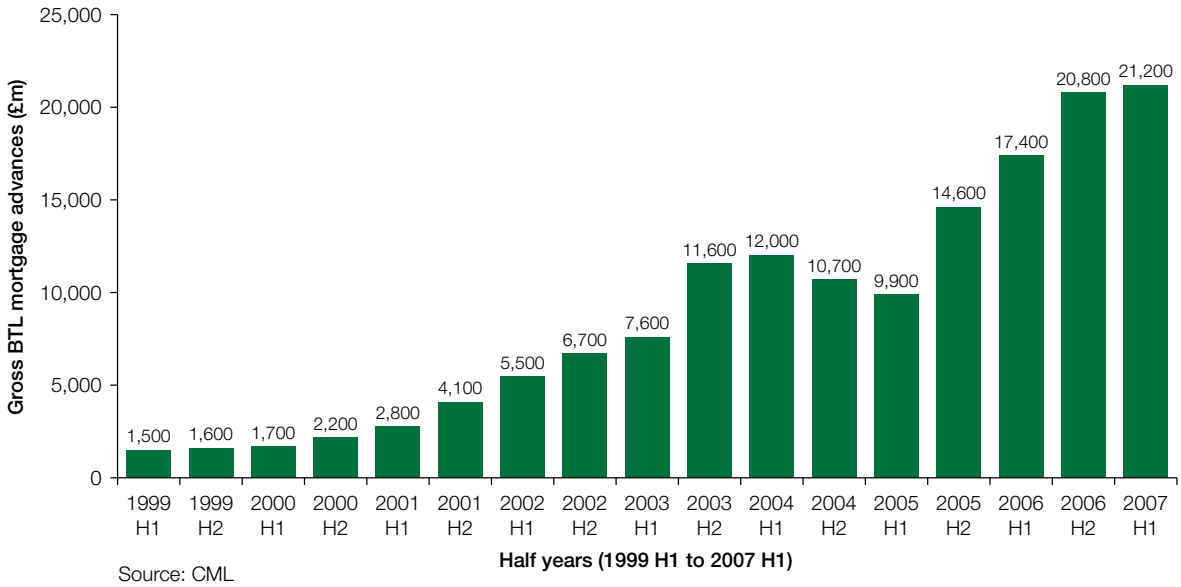
A rise of 1 percentage point in the housing User Cost of Capital (UCC) decreases prices by 0.001 per cent in the next quarter and by 0.44 per cent in the long-run.

However, the variable of primary interest to this study is gross mortgage lending for house purchases, including BTL (MORTADV). This variable is shown to be highly statistically significant and suggests that a 1 per cent increase in mortgage lending inflates house prices by 0.08 per cent in the next quarter and by 0.36 in the long-run.

Since the advent of BTL mortgage in 1996 Q3 the amount of gross mortgage advances has been driven more and more by BTL lending. Indeed, BTL mortgages advances have been growing exponentially since their introduction in 1996 Q3 (see Figure 3) and in 2007 Q3 they made up 10 per cent of total outstanding mortgage debt, and 13 per cent of all mortgage advances (CML, 2007).

This, together with the results from the model, implies that had BTL not existed, house prices would have been lower because overall lending levels would have been lower. This assumes that non-BTL advances would have remained unchanged.

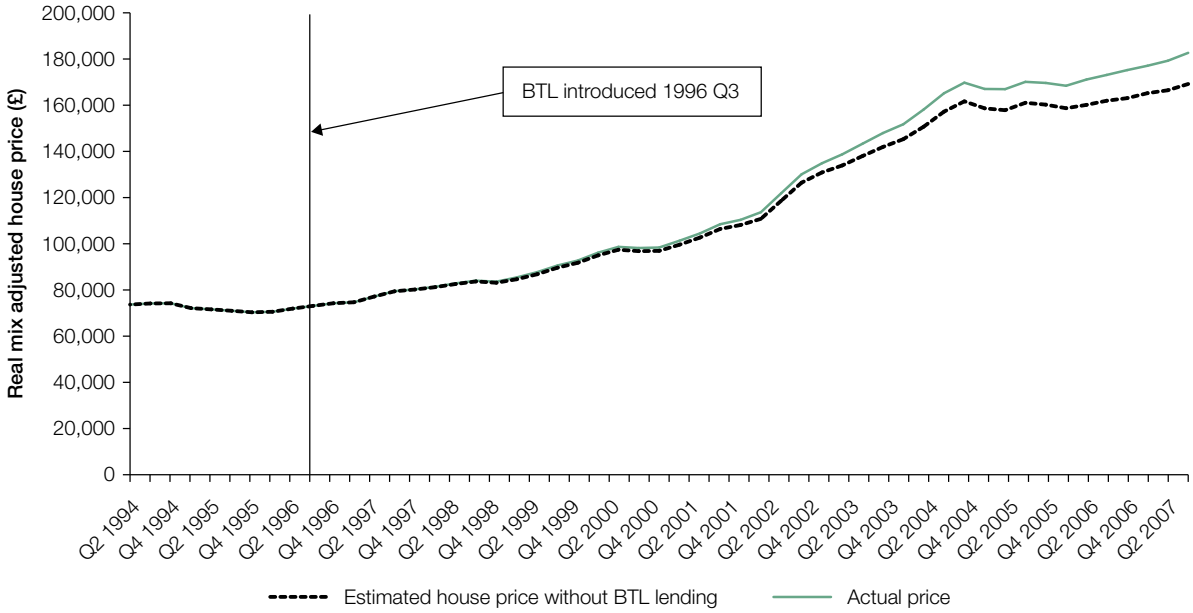
Figure 3 Buy-to-let gross mortgage advances (£m)



Source: CML

In order to estimate the impact on house prices of the increasing value of BTL mortgage advances the house price model was fitted to the data in a dynamic simulation, but with BTL mortgage advances subtracted from the mortgage advances variable (MORTADV). This gave an estimate of what house prices would have been had there been no BTL lending. This can be referred to as the counterfactual house price. The counterfactual house price can then be compared to the actual price. The observed difference is assumed to be the impact of BTL on prices. This is shown in Figure 4.

Figure 4: Actual mix adjusted house prices and the estimated house price if there had been no BTL mortgage lending (1994Q2 to 2007Q2)



The actual and counterfactual house prices can be compared in each quarter from 1996 Q3. For instance, taking the last period that a comparison can be made in 2007 Q2, the actual mix adjusted house price was then £182,667 and the counterfactual price was estimated to be £169,182. This implies that BTL lending had increased prices by £13,485 (or 7.4 per cent) over and above what they would otherwise have been. These estimates represent an upper bound on the BTL impact because, as mentioned earlier, the counterfactual assumes that non-BTL advances would have remained unchanged. In reality, if BTL mortgages had not existed, there probably would have been some upward shift in non-BTL mortgage advances. The impact of BTL on prices may therefore have been less than he 7.4 per cent reported for 2007 but it is not clear by how much because it is difficult to estimate would have happened to non-BTL lending under this scenario.

It should be noted that there is only a significant difference between the actual and counterfactual house price from the second half of 2001. This is not surprising given the step change observed in BTL lending at this point when BTL advances increased from £2.8 billion in the first half of 2001 to £4.1 billion in the second half of that year. There was also a further step change increase in BTL lending between the first and second half of 2003 and 2005, which again is reflected in house prices (see Figure 4). For the earlier part of the series BTL made no significant difference to prices which again is to be expected because the amount of lending was relatively modest at that point.

VI. Discussion

In this paper the impact of Buy-to-Let on house prices is investigated. An econometric model was used to determine the impact of gross BTL lending on house prices by comparing actual house prices to an estimate of what house prices would have been had there been no BTL lending.

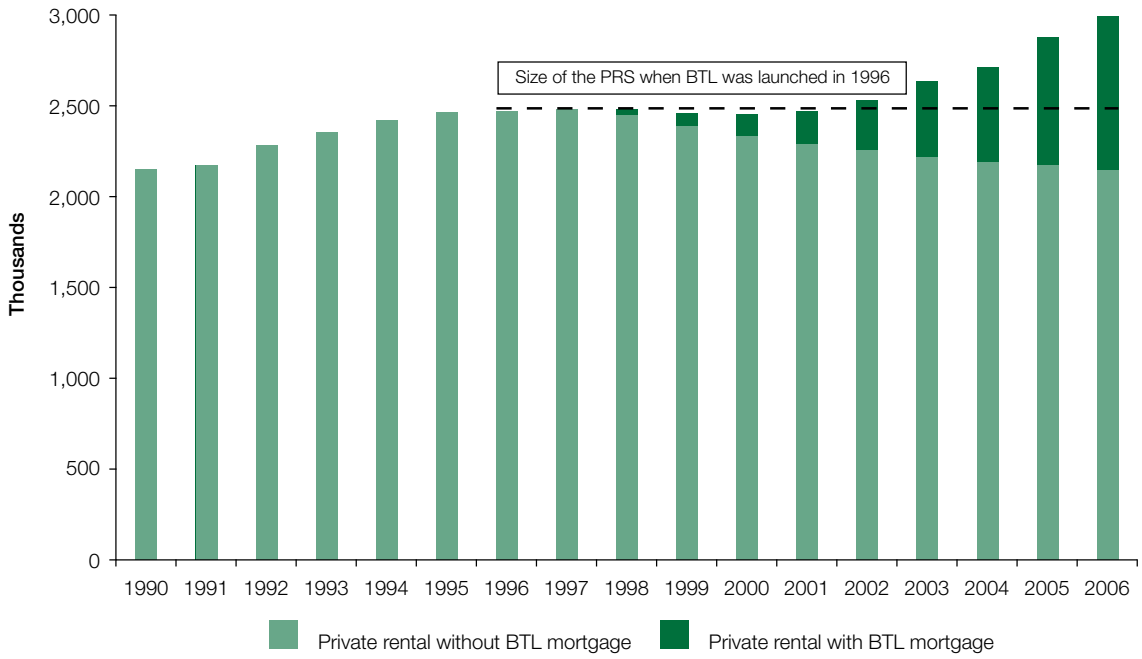
Between 1996 Q3 and 2007 Q2 the overall impact of BTL on house prices was relatively modest and illustrates the point made by others that movement's in house prices are largely determined by fundamental economic and demographic factors (Meen etc).

The model discussed in this paper attributes much of the variation in house prices to mortgage interest rates, changes in disposable income, and the stock of housing to the number of households, and the availability of credit. For instance, since 1996Q3 house prices increased in real terms by 150 per cent and, even without the estimated effect of BTL, they would still have been expected to increase by more than 130 per cent. It would therefore be wrong to say that BTL has been responsible for all of the growth in house prices over the last decade but it has played a part, as other have argued (e.g. NHF, 2007; Sprigings et al, 2006).

In term of affordability it is an open question as to whether a 7 per cent increase in house prices in 2007 Q2 represents a significant additional cost. For example, the monthly mortgage repayment on a property priced at around £183,000 in 2007 Q2 would be around £1,190, assuming a 100 per cent mortgage at an interest rate of 6 per cent over 25 years. The equivalent monthly repayment for a property priced at £169,000 (the models estimated house price for this period had there been no BTL lending), would be £1,100. A difference of £90 per month in mortgage repayments could be significant for some but not for others. However, if one assumes that BTL investment has provided no wider benefits then the additional amount it adds to house prices and households mortgage repayments is undesirable because it has reduced the opportunity for home ownership, particularly for those on lower incomes.

There is some evidence to suggest that BTL has increased the size of the private rental (PRS). For example, BTL mortgages were estimated to make-up over a quarter (28 per cent) of the whole private rented stock in 2006, rising from less than 1 per cent in 1996 (see Figure 5). However, one cannot necessarily conclude from this data that the PRS would have declined from its pre-BTL level had BTL *not* existed. This is because the statistics mask the fact that some investors will have taken out BTL mortgages on rental stock that they already owned, once the BTL product became available.

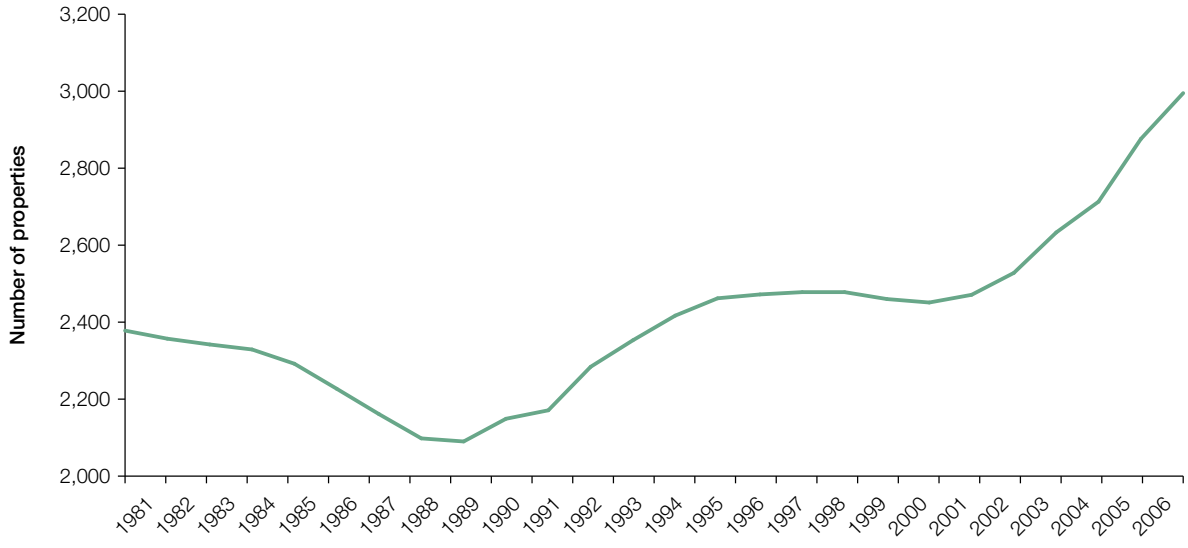
Figure 5: Private sector rental properties with and without a buy-to-let mortgage, UK (1990 to 2006)



Source: Based on analysis by CML (2007)

The size of the private rented sector (PRS) at large was in steady decline throughout most of the twentieth century. Its lowest point in England was in the late-1980s, when the sector dropped to just over 2 million properties, representing just 9 per cent of all stock (Thomas, 2006). Following the 1988 Housing Act, that introduced the Assured Shorthold Tenancy, it became easier for landlords to evict tenants where they had a clear right to possession. This helped to grow the sector significantly. It was further boosted by the introduction of the BTL mortgage product in 1996, although this did not have an impact until 2000/2001, when new lending started to increase rapidly. As a result of these changes the sector now represents 11 per cent of all stock (CLG, 2007), housing nearly 3 million households (see Figure 6).

Figure 6 Number of dwelling in the private rental sector (thousands), UK (1981 to 2006)



Source: CLG

The private rental sector provides flexible accommodation that helps to facilitate labour mobility and this is beneficial to the national economy. It can also be said to provide housing to those who cannot afford to buy and enables them to build up their own equity and, although tenants do not share in capital gains directly, they do so through lower rents as a result of competition between the increased numbers of landlords (Ball, 2007; Paragon, 2006). However, further research would be required to estimate the number of tenants that could have afforded to buy a home of their own had there been no BTL lending.

There is a debate about whether or not BTL investment has increased housing supply over and above what it would otherwise have been. One hypothesis is that BTL has promoted increased supply by effectively forward funding housing development. The argument is that high density development requires significant amounts of advance funding for the necessary infrastructure involved. The viability of these cash intensive developments is said to have been improved through off-plan sales to investors who have provided evidence of take-up for banks and other lenders (owner-occupiers generally purchase much later). In this regard, banks that supply development funding often require a forward sales schedule as part of the development loan agreement. Therefore, the confidence that is brought to a scheme by investor sales leads to housing starts in less established residential areas, particularly in town centres that are undergoing large-scale urban regeneration, which generally costs more and is viewed as higher risk. This form of development now forms a significant proportion of new housing supply (Savills Research, 2007). It though should be said that mortgage data suggests that only around 10 per cent of BTL mortgages between 2004 and 2006 were on newly built properties[1].

[1] This is from a sample of BTL mortgage deals between 2004 and 2007.

The relationship between house prices and the BTL sector has received much comment with some leading commentators suggesting that a downturn in the sector could precipitate a slow down in house price inflation (Barker, 2007). This could be facilitated in two ways. Firstly, BTL borrowing may fall as housing user costs rise as a result of higher interest rates or, and perhaps more significantly, there is a reduced expectation of capital gains. These factors will deter *new* investors from entering the market. Secondly, if *existing* BTL investors do not anticipate future capital gains or rental yields fall they may decide to sell properties. This would be more likely if other forms of investment such as equities start to outperform property (RICS, 2004). It also appears to be the prospect of capital gains that has motivated BTL investment rather than rental yields (Farlow, 2004). Indeed, rental yields have been falling since 2004 but BTL lending has continued to rise. Thus, a fall in expectations about housing price inflation might be more significant than falling rental yields.

The results of the modelling in this study would suggest that house price inflation may moderate if the amount of BTL lending decreased. This *could* also bring a glut of BTL properties onto the market *if* existing investors attempted to sell properties because of lower expectations about capital growth. However, the available evidence suggests that most BTL investors are long-term investors in property (Scanlon and Whitehead, 2005). Furthermore, fundamental factors like increases in real disposable income and growth in the number of households in relation to the housing stock will work to support prices. There will also come a point at which prices reach a level to be affordable to more first time buyers. The first time buyer would then presumably take the place of former investors in the housing market.

There is also some tentative evidence to suggest that the inflationary impact of BTL investment could impact on some UK regions more than others. Data kindly provided to the NHPAU by a major BTL mortgage lender suggests that BTL investment is concentrated in certain regions, particularly London, South East and the North West (see Table 2). These data may not be representative of all BTL lending but they are indicative of the regional distribution.

Table 2: Proportion of BTL mortgages approved, by region (2004 to 2006)

Government Office Region	% BTL mortgages	% All mortgages[2]
London	22.2	13.9
SE	15.2	16.7
NW	13.9	12.5
East	8.8	11.1
Y&H	8.0	9.6
WM	7.6	8.9
SW	7.2	9.8
EM	6.8	8.3
NE	5.5	4.6
Wales	4.7	4.4
Total	**100.0**	**100.0**

It would be useful to consider the regional impact of BTL in more detail by modelling house prices on a regional basis, particularly in the high pressure markets in the South of England. However, at the time of this study comprehensive regional BTL lending data was not available. It would also be desirable to consider the impact of BTL on local housing markets, where there is a concentration of BTL activity, because the impact on UK prices reported in this study may disguise the fact that at a local level the impact could be even more significant.

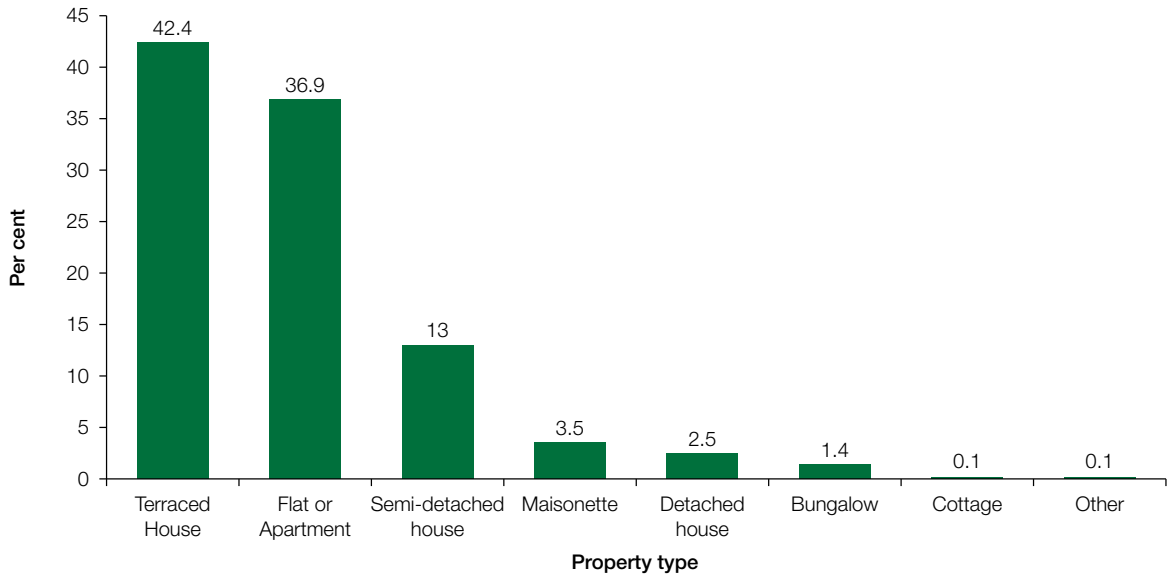
There is evidence to suggest that BTL investment is concentrated towards the lower end of the housing market, particularly on the purchase of flats and terraced houses (see Figure 7). Indeed the average price of a BTL property was approximately £156,000 in 2006[3]. This compared to an average price of £201,000 for all UK properties in that year.[4]

[2] NHPAU analysis of Land Registry data.

[3] Based on a large sample provided to the NHPAU by a major BTL mortgage lender. The sample may not be representative of all BTL properties.

[4] Based on NHPAU analysis of Land Registry data of residential property transactions in 2006, purchased using mortgage finance.

Figure 7 BTL properties by type, UK (2004 to 2006)



In terms of the characteristics of BTL investors, the typical BTL investor would appear to be affluent and middle-aged. For example in 2006 the average gross annual income of a single BTL mortgage applicant was around £50,000 and the average age was 42 years. In terms of their motivations for investing, it has been suggested that falling stock markets and companies closing final salary pension schemes have been the two main drivers for people to invest in residential property (eg Rhodes and Bevan, 2003). It has given people greater confidence in managing their own long-term investment affairs rather than rely on financial market specialists (Ball, 2004).

There are some methodological points that need to be addressed. The most significant is that the impact of BTL could be attributed to other factors not controlled for in the model. The model though does control for variables identified by the literature as important determinants of house price movements. The model also explains a large proportion of the variance in house prices over the period, and in terms of fit it compares very well to other models of its type (see Pain and Westaway, 1996; HM Treasury 1992; Drake, 1993; Dicks, 199). However, a more sophisticated model might explain more of the variance.

There is also the possibility that some BTL mortgage lending started before 1996 Q3. For instance, Paragon Plc report BTL mortgage lending in 1995 and claim that investment in private rented property was taking place long before 1996 Q3 through commercial mortgages and regular residential mortgages (Paragon, 2006). However, the specific scheme launched by ARLA in 1996 Q3 was qualitatively different from previous mortgage products because it offered reduced interest rates for investors wishing to purchase properties to let and it was this that led to the rapid growth in investment levels from 1996 Q3 (ARLA, 2007). It is therefore the specific impact of the BTL mortgage product that is being evaluated in this study.

It is also important to see the findings in the context of overall investment in residential property rather than just the effect of BTL mortgage lending. BTL mortgage lending should be seen as a proxy measure for overall investment activity. The study did not consider the impact of cash investment from individuals or institutions on house prices because this information, unlike BTL mortgage data, is not readily available. This raises the possibility that the combined impact of all these different sources investment on house prices might be much greater than BTL alone. However, unlike BTL mortgages, these other forms of investment in the private rented sector have always existed.

Conclusions

BTL mortgage lending would appear to have increased house prices since its introduction in 1996 Q3 but it is important to note that the impact is small in relation to the effect of household growth, the size of the housing stock, mortgage interest rates, and changes in disposable income. However, it has nevertheless had some impact on prices and therefore affordability. For instance, by 2007 Q2 BTL investment was estimated to have increased prices by up to 7 per cent, which was the equivalent of £13,000 on the average house price in that period. This may have been enough to price out some potential buyers from the housing market. On the upside, it is important to acknowledge that there are significant economic and social benefits being delivered by the sector.

The results from the econometric modelling also concur with analysts that have suggested that a downturn in BTL lending could potentially create modest downward pressure on house price inflation.

Data Appendix

HP(£) = Quarterly mixed and seasonally adjusted UK house price, expressed in real terms using the RPI (*Nationwide Building Society*).

MORTRATE (%) = Quarterly nominal average mortgage rate (*Council of Mortgage Lenders*)

VACANCY = ratio of the total UK housing stock to the estimated number of UK households, per quarter* (*Department of Communities and Local Government*).

RHDIPC (£m) = Quarterly real household disposable income per capita (ONS *Monthly Digest of Statistics*).

REPRO(%) = The rate of mortgage possessions per quarter (Council of Mortgage Lenders).

MORTADV (£m) = Quarterly total mortgages for house purchases (*Council of Mortgage Lenders*) and BTL advances expressed in real terms using the RPI.

BTL advances (£m)= Quarterly gross Buy-to-Let mortgage advances expressed in real terms using the RPI* (*Council of Mortgage Lenders 1998-2007; ARLA 1996-1997*).

UCC = Housing user cost of capital (see text).

** Interpolation was used when quarterly data was not available.*

R^2 = Coefficient of determination
SEE = equation standard error
Δ = denotes the first difference of variable

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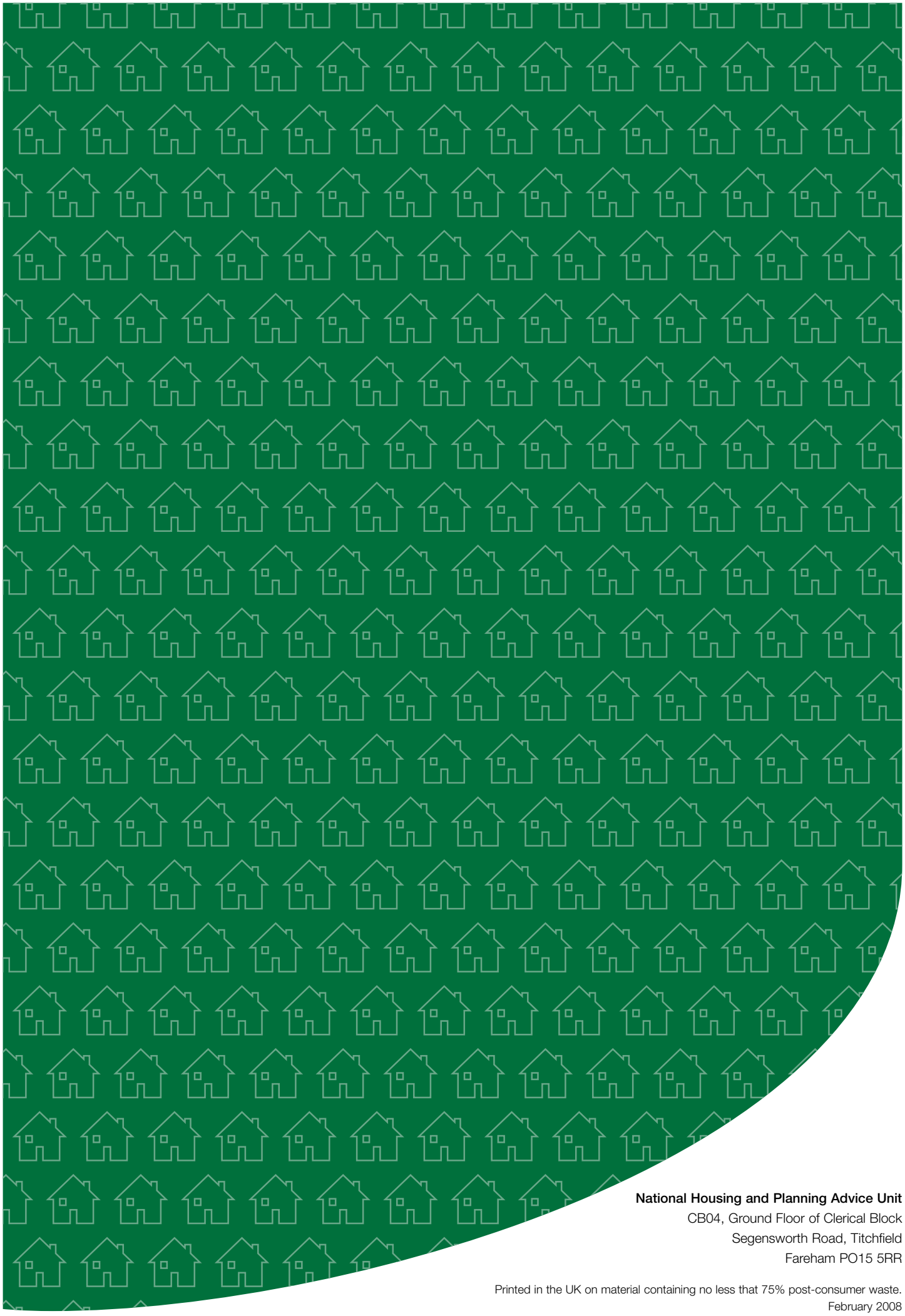

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