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Private sector rents and rates of return, 1996/97 to 2000/01

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Key findings

Private sector rents across England 1996/97 – 2000/01

- In 2000/01, the average rent of furnished property was £91.94 and that of furnished property was £79.78.

- Through the observation period, the national averages of both furnished and unfurnished property rents continuously increased.

- By region, in 2000/01, the highest furnished property rent and unfurnished property rent were both witnessed in London (£152.39 and £134.90 respectively), while the lowest rents were both observed in North East (£64.40 and £59.02 respectively).

- Compared with 1996/97, the unfurnished property rents rose in all nine regions in 2000/01. The furnished property rents increased in all regions but North West, which saw a decrease of £1.75 or 2.5% (from £70.91 in 1996/97 to £69.16 in 2000/01).

- The distribution range of weekly average rents among the local authorities of English had widened dominantly upwards for the observation period.

- Of ten local authorities with the highest weekly average rents in 2000/01, all of them were in London for furnished property case. For unfurnished property case, eight were in London and the remaining two in South East.

- Of ten local authorities with the lowest weekly average rents, six were in East Midlands, three in North East and the remaining one in Yorkshire and the Humber for furnished property case. For unfurnished property case, seven were in North East, two in East Midlands, and the remaining one in North West.

- Of ten local authorities with the fastest increases in weekly average rents from 1996/97 to 2000/01, seven were in South East, two in London, and the reaming one in East for furnished property case. For unfurnished property case, three each were in South East and East Midlands and two each in East and London.

- Between 1996/97 and 2000/01, 25 local authorities saw decreases in furnished property rent - 13 were from North West and 4 from West Midlands. Of ten local authorities dropping unfurnished property rents, nine were in North West and the remaining one in South East.

- For furnished properties, in 2000/01, the weekly average rent of the rural area was £76.22 and that of urban area was £94.85. Through the observation period, the weekly average rent of the rural area continuously increased. Except in 1996/98, the equivalent for the urban area also increased.

- For unfurnished properties, in 2000/01, the weekly average rents of the rural and urban areas were £78.35 and £80.60 respectively. Through the observation period, the weekly average rents of both areas continuously increased.

Private sector house prices across England 1996/97 – 2000/01

- The national average of private sector house price, measured by local authorities' lower quartile (LQ) house price, was £66,191 in 2000/01.

- The national figure increased continuously through the observation period. Compared with the 1996/97 price of £45,723.2, the 2000/01 price rose by 44.8%.

- In 2000/01, the highest price was observed in London (£111,608.6), while the lowest was in North East (£34,311.7).

- All the regions witnessed consecutive increases during the observation period.

- By region, the fastest growth from 1996/97 to 2000/01 was witnessed in London by £49,781.9 or 80.5%, while the slowest increase was seen in North East by £2,467.1 or 7.7%.

- In 2000/01, the average of the urban area was £66,026.6, which was slightly below the rural level of £66,560.1.

- Over the period, the rural price marginally outperformed the urban equivalent, except in 1999/00.

- Both the urban and rural areas witnessed consecutive increases through the observation period.

- Compared with 1996/97 prices, the urban price increased by £20,818.7 or 46.1% in 2000/01. The rural price also rose by £19,725.6 or 42.1%.

Relationship between private sector rents and house prices across England 1996/97 – 2000/01

- The correlation coefficient for the weekly average rents and the LQ house prices across England over the observation period was 0.866. This means that the rents and house prices appeared to have significantly positive relationship.

- All nine regions but North East had significantly high correlation coefficients.

- The correlation coefficient was 0.420 for North East, suggesting positive but relatively week relationship between private sector rents and house prices in the region.

- The correlation coefficients for the rural and urban areas were 0.855 and 0.909 respectively, suggesting that the positive relationships between the rents and house price were seen in both areas.

- The correlation coefficient for the local authorities with fast rent growth was 0.803 while the equivalent for those with slow rent growth was 0.669.

- The correlation coefficient for the local authorities with fast house price growth was 0.765 while the equivalent for those with slow house price growth was 0.542, suggesting the relationship between rents and house prices was positive but might not be significant for the latter group.

- In terms of annual changes in relationship between private sector rents and house prices at the national level, the correlation coefficients were above 0.8 for all yeas of the observation period.

Private sector rates of return across England 1996/97 – 2000/01

- In 2000/01, the national average of rate of return, which is measured by weekly average rents divided by LQ house prices, was 7.72%.

- Starting with 9.78% in 1996/97, the figure continuously declined through the observation period.

- The rates of return dropped continuously through the period across all regions except North East whose figure increased to 9.73% in 2000/01 from 9.60% in 1999/00.

- Compared with 1996/97, all nine regions showed declines in rate of return in 2000/01.

- The starkest fall was witnessed in London (4.13 percentage points), while North East saw the most moderate fall (0.45 points) in comparison between 1996/97 and 2000/01 figures.

- In 200/01, the rates were 6.76% for the rural area and 8.38% for the urban area. The rural figure was always below the urban equivalent during the period by margins of more than 1.6 but less than 1.9 points. Through the observation period, both groups witnessed successive declines.

- In 2000/01, the rate was 6.77% for the local authorities with fast rent growth while the equivalent for those with slow rent growth was 9.15%.

- Compared with 1996/97, the figures decreased by 2.81 and 1.47 points in 2000/01 for the fast rent growth group and the slow rent growth group respectively. This suggests that despite having fast rent growth, the former group experienced more rapid expansion in house price than in rent.

- In 2000/01, the rate of return was 6.72% for the local authorities with fast house price growth while the equivalent for those with slow house price growth was 10.09%.

- Through the observation period, the former group witnessed successive declines in the rate of return, whereas the figure for the slow house price growth group marginally rose in 2000/01 from the previous year.

1 Introduction

The purpose of this paper is to analyse how private rents relate to house prices and to examine the relationship between private sector rents and house prices, and by implication the gross rates of return achievable, over the period 19996/97 to 2000/01 in England.

The original reason for this research was to assess the extent to which it would be appropriate to use lower quartile house prices as a surrogate for private rents in regional and local analysis in the light of the difficulties in obtaining Rent Officer Service data on the rents they determine for Housing Benefit purposes. Since the work was commissioned it has proved possible to obtain these data directly so the need for a surrogate is obviated. However the more fundamental issues of tenure choice among lower income households and the extent to which the two sectors act as substitutes in different markets remain - as do the questions of whether the processes of rent determination for tenants on Housing Benefit distorts outcomes in different markets.

The research now consists of three elements:

1. A detailed description of the spatial patterns of private rents and house prices and of the relationship between the two over the period 1996/97 to 2000/01 – the period for which the data were originally available;
2. A statistical analysis of the factors helping to determine the variations in rates of return across the country;
3. An update bringing in additional years to 2004/5 (or 5/6?) and drawing out the implications for tenants and providers alike.

The results will also be used to inform the annual our tenure comparison analysis.
This paper reports on the first stage of the research.

The paper is structured as follows. Section 2 reports descriptions and trends with respect to private sector rents as determined for Housing Benefit purposes by the Rent Officer Service. The analysis is in terms of weekly average rents, for furnished and unfurnished properties respectively at the national and regional levels as well as at local authority level and by rural and urban classification. Section 3 presents a similar analysis of private sector house prices concentrating on lower quartile prices as these are most likely to be comparable stock to that found in the private rented sector. Section 4 examines the strength of the relationship between private sector rents and house prices and clarifies how private rents vary in relation to house prices. Section 5 investigates private sector gross rates of return, measured by rents divided by house prices. Section 6 summarises some of the key points arising from the above analyses and draws some conclusions.

2. Private sector rents across England 1996/97 – 2000/01

2.1 Source and definition of private sector rents

Private sector rent data examined in this paper are taken from the former Department of Transport, Local Government and the Regions (DTLR) database of Rent Officer statistics that record rent determinations in housing benefit (HB) cases.

One merit of using this source lies in the fact that the records from the source are the most comprehensive dataset for private sector rents. Another advantage is that the data can be the most applicable reference for rents in social sector or rents of Housing Associations (HAs), as the HB-case private rent data are representative of the lower half of the market, that is, the section of the market in which HAs compete. [1]

From this source, we will use weekly average rents for local authorities of England during 1996/97 to 2000/01. The annual term is defined as April 1st to March 31st in the following year. The weekly average rents are based on rents of self-contained properties, that is, rents of bedsits will be excluded. Local authorities with only a few rent cases, notably City of London and Isles of Scilly, will be excluded from the analyses. Due to administrative boundary changes, there are some missing local authorities for each year in the observation period. The weekly average rents are categories by tenure – rents of furnished or unfurnished properties. The figures are inflationary unadjusted.

2.2 The national trend of private sector rents

Table 2.1 presents the national average of privet sector weekly rents from 1996/97 to 2000/01 for furnished and unfurnished self-contained properties. The national average means the average of the English local authorities' figures weighted by rent cases in each local authority. In 2000/01, the average rent of furnished property was £91.94 and that of furnished property was £79.78. The furnished property rent always outperformed the unfurnished equivalent through the observation period by a margin of £15 to £12.

Through the observation period, both furnished and unfurnished property rents continuously increased but with a different velocity. Compared with 1996/97, the rent of furnished property increased by £3.61 or 4.1% in 2000/01, while the rise in unfurnished property rent was £6.35 or 8.6%. The estimated annual growths during the observation period, thus, were 1.1% for furnished property rent and 2.1% for unfurnished property rent. Considering that the annualised CPI growth in the corresponding period was 1.3%, the increase in the furnished property rent appeared fairly modest. [2]

Table 2.1 Weekly average rent: furnished (upper row) & unfurnished (lower row), £s

1996/97	1997/98	1998/99	1999/00	2000/01	change (96/97 - 00/01)	annual change
88.33	89.30	88.90	91.66	91.94	4.1%	1.1%
73.43	75.01	76.60	77.99	79.78	8.6%	2.1%

Note: Except bedsit rents. Weighted by rent cases.

[1] The Rent Officer needs to limit payment of HB to be no higher than the median of the range of rents (excluding high outliers) within a given locality (Rent Officers estimate the median using their knowledge of the local market). Most rents referred to the Rent Officer are not significantly above the median for the locality (both sets of data are included in the Rent Officer statistics database). Therefore HB-case private rents provide a good representation of the lower half of the private rented market as well as a good reference for social housing rented market.

[2] Dataspring's estimation based on annual CPI indices available from National Statistics.

Source: Datasping's calculation based on the former Department of Transport, Local Government and the Regions (DTLR) database of Rent Officer statistics.

2.3 The regional trends of private sector rents

Table 2.2 shows weekly average rents of furnished and unfurnished properties by the Government Office Region (GOR) over the period of 1996/97 and 2000/01. The regional figures were the average of weekly average rents of local authorities constituting each region.[3]

In 2000/01, among the nine English regions, the highest furnished property rent and unfurnished property rent were both witnessed in London (£152.39 and £134.90 respectively), while the lowest rents were both observed in North East (£64.40 and £59.02 respectively). Regardless of the tenure type, London always held the highest rents through the observation period, and North East showed the lowest.

The differential between the highest and lowest regions widened from £68.65 in 1996/97 to £87.99 in 2000/01 for furnished property rents. The gap for unfurnished property rent also expanded from £58.41 in 1996/97 to £72.88 in 2000/01. This means that the growths in the regional gaps between the two points were 28.2% for the furnished property rent and 24.8% for the unfurnished property rent.

Compared with 1996/97, the unfurnished property rents rose in all nine regions in 2000/01. The furnished property rents increased in all regions but North West, which saw a decrease of £1.75 or 2.5% (from £70.91 in 1996/97 to £69.16 in 2000/01). The fastest growth was observed in London both for furnished and furnished property rents – by £20.44 or 15.5% (from £131.95 in 1996/97 to £152.39 in 2000/01) and by £20.93 or 18.9% (from £110.97 in 1996/97 to £131.90 in 2000/01) respectively. Following this, the rents in South East rapidly increased by £12.51 or 13.2% for the furnished property (from £94.70 in 1996/97 to £107.21 in 2000/01) and by £13.24 or 15.3% for unfurnished property (from £86.47 in 1996/97 to £99.71 in 2000/01). The slowest growth in the unfurnished property rent was seen in North West – by £2.39 or 3.6% (from £66.46 in 1996/97 to £68.85 in 2000/01). [4]

[3] There had been ten GORs but in 1998 Merseyside was merged with the rest of the North West. In our analyses, local authorities were categorised according to regions to which they belonged as at 2000/01. This means that local authorities in Merseyside until1998 were treated as that they were in North West from the beginning of the observation period.

[4] In the two years' comparison, North East had the most disharmonised growth rates between furnished property rent and unfurnished property rent – 1.6% and 12.2% respectively. By producing the same table with a 5%-timmed sample for North East, it was examined whether extreme values caused the large discrepancy. The results (the table below) were not significantly different from Table 2.2, suggesting the region's uniqueness arising from other reasons, which should be a subject for further research.

	1996/97	1997/98	1998/99	1999/00	2000/01	change (96/97 - 00/01)	annualised change
North East	63.49	64.06	64.61	64.73	64.43	1.4%	0.4%
	52.83	54.37	55.54	56.57	59.21	12.1%	2.7%

Table 2.2 Weekly average rents by region furnished (upper row) & unfurnished (lower row), £s

	1996/97	1997/98	1998/99	1999/00	2000/01	change (96/97 - 00/01)	annualised change
East	78.73	79.81	80.96	84.89	86.22	9.5%	2.5%
	75.86	78.22	80.37	82.80	84.22	11.0%	2.7%
East Midlands	63.30	64.46	65.77	66.96	68.24	7.8%	1.9%
	58.32	59.64	60.94	62.46	63.95	9.7%	2.3%
London	131.95	134.86	138.52	146.90	152.39	15.5%	3.8%
	110.97	115.61	118.92	121.51	131.90	18.9%	4.0%
North East	63.36	63.98	64.60	64.66	64.40	1.6%	0.4%
	52.56	54.26	55.38	56.55	59.02	12.3%	2.8%
North West	70.91	71.12	70.00	69.55	69.16	-2.5%	-0.7%
	66.46	67.96	68.26	68.27	68.85	3.6%	0.8%
South East	94.70	96.76	98.29	104.55	107.21	13.2%	3.3%
	86.47	88.53	91.72	94.76	99.71	15.3%	3.6%
South West	75.26	76.38	77.14	78.91	82.13	9.1%	2.1%
	74.97	76.75	78.95	80.26	83.89	11.9%	2.7%
West	71.23	71.69	73.40	74.89	76.73	7.7%	1.9%
Midlands	67.13	69.1	70.07	71.85	73.63	9.7%	2.3%
Yorkshire and	64.93	65.20	65.62	66.37	67.63	4.2%	1.0%
The Humber	59.79	61.63	63.06	63.96	65.19	9.0%	2.1%
Range	68.65	70.88	73.92	82.24	87.99	28.2%	6.7%
(Max.-Min.)	58.41	61.35	63.54	64.96	72.88	24.8%	5.1%

Note and Source: As Table 2.1

2.4 Private sector rents at local authority level

Range of weekly average rents

Table 2.3 presents range of private sector rents for local authorities across England over the period 19996/97 to 2000/01. It is shown that the range between the highest to lowest local authorities had broadened for the observation period.

In 1996/97, the lowest weekly average rent of furnished property at a local authority level was £51.77, while the highest £180.61. This means that a weekly average rent range was £128.84. The standard deviation of the rent for the same year was £23.33. In 2000/01, the lowest and the highest were £52.67 and £238.66 respectively, and thus the range expanded to £185.99. The standard deviation also increased to £30.89.

The widening pattern of the rent range was also witnessed for unfurnished properties. In 1996/97, the lowest rent was £41.43 whereas the highest was £174.92, which means that a range was £135.48. The standard deviation for the year was £21.90. In 2000/01, the lowest and highest were £49.56 and £219.30 respectively, resulting in a range of £219.30. The standard deviation grew to £29.24.

Table 2.3 Range of weekly average rents at local authority level: £s

		1996/97	1997/98	1998/99	1999/00	2000/01
furnished	Median	73.86	74.54	75.79	77.51	78.98
	Std. Deviation	23.33	24.62	26.81	29.38	30.89
	Minimum	51.77	53.96	55.55	52.18	52.67
	Maximum	180.61	198.13	209.20	222.80	238.66
	Range	128.84	144.16	153.64	170.61	185.99
unfurnished	Median	71.38	73.67	75.54	77.00	79.35
	Std. Deviation	21.90	23.10	25.30	27.37	29.24
	Minimum	41.43	43.47	46.70	48.37	49.56
	Maximum	174.92	174.46	205.72	226.31	219.30
	Range	133.48	130.99	159.01	177.94	169.74

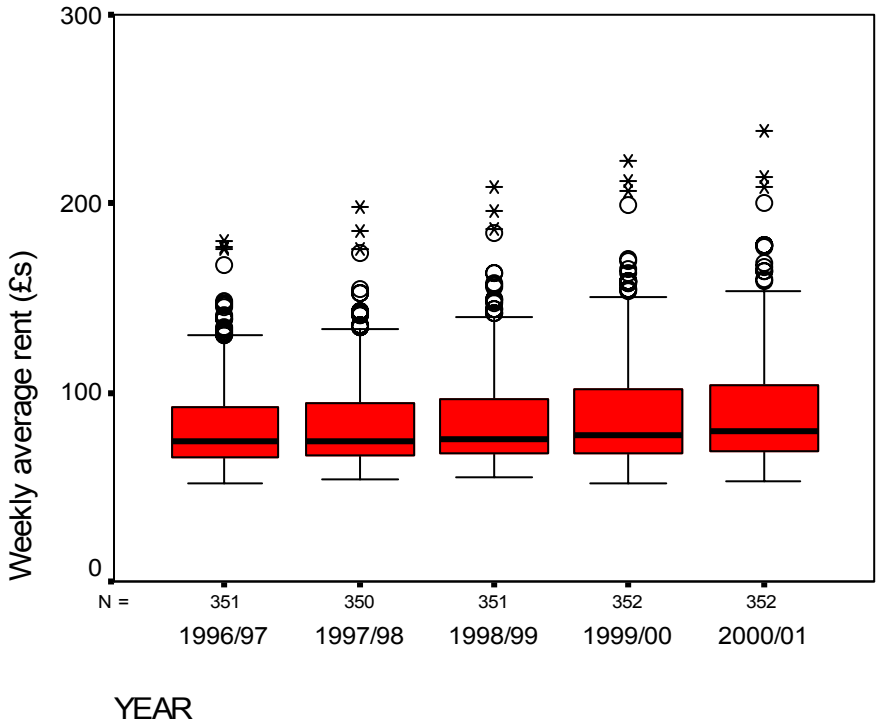
Note: Excluded local authorities without enough rent cases.
Source: As Table 2.1

Figures 2.1 and 2.2 illustrate ranging patterns of local authorities' weekly average rents for each year of the observation period. In the figures, each box explains an inter-quartile (i.e., from the 25th to 75th percentile) range of weekly average rents for local authorities across England, and a line in the boxes represents the median of the rents. The whiskers, which extend from the boxes, show the highest and lowest rents within a range of 1.5 times the box length. Values outside the ends of the whiskers are outliers of weekly average rents, which appear as circles (weekly average rents between 1.5 and 3 box lengths from the upper or lower edge of the box) or asterisks (weekly average rents more than 3 box lengths from the upper or lower edge of the box).

Figure 2.1 reports the rent range for furnished property. In each year, there was a positive skew to the data, as more local authorities' rents were located above the median line, and the rent range broadened from the previous year dominantly upwards. The outliers of weekly average rents existed only in a high value area of the graph. This suggests that a widening regional discrepancy in weekly average rents of furnished property across England was owing to local authorities with high weekly average rents.

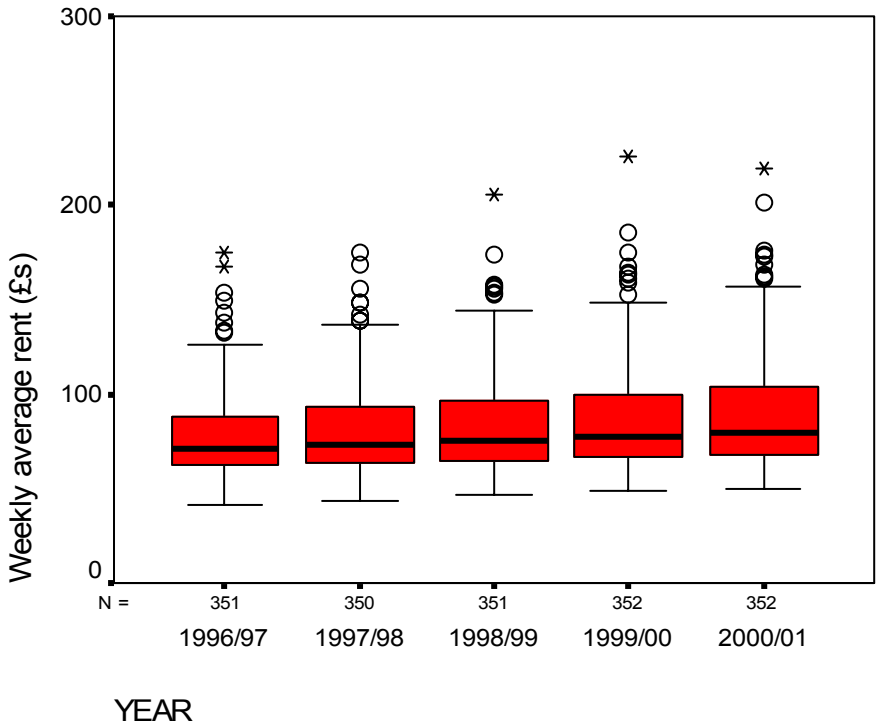
Figure 2.2 also displays the similar trend for a range of weekly average rents of unfurnished properties. The data set had a positive skew and the rent range expanded upwards. Only some high values of weekly average rents for local authorities were recognised as outliers but no outlying values were found among the low weekly average rents in every year.

Figure 2.1 Distribution of weekly average rents of the English local authorities (furnished)



Note & Source: As Table 2.3

Figure 2.2 Distribution of weekly average rents of the English local authorities of England (unfurnished)



Note & Source: As Table 2.3

Local authorities with a high weekly average rent

Table 2.4 presents ten local authorities with the highest weekly average rents in 1996/97 and 2000/01 respectively for furnished properties. In 1996/97, Kensington and Chelsea had the highest weekly average rent (£180.61) followed by Westminster (£177.20) and Camden (£176.33). All the highest ten local authorities were from the London GOR, except Oxford from South East.

In 2000/01, Kensington and Chelsea kept the highest place with £238.66. The followers were also unchanged - Westminster (£213.76) and Camden (£208.37). In fact, the highest ten local authorities for the year did not change significantly from 1996/97 – eight of ten local authorities were on the both year's list. All the 10 local authorities for 2000/01 were located in London, suggesting that London contributed to the regional discrepancies in rents, which were found in Figure 2.1.

Table 2.4 10 local authorities with the highest weekly average rents (furnished) £s

1996/97			2000/01		
Kensington and Chelsea	L	180.61	Kensington and Chelsea	L	238.66
Westminster	L	177.20	Westminster	L	213.76
Camden	L	176.33	Camden	L	208.37
Hammersmith and Fulham	L	167.15	Hammersmith and Fulham	L	200.08
Islington	L	147.94	Wandsworth	L	178.61
Barnet	L	147.60	Islington	L	178.58
Richmond Upon Thames	L	146.59	Richmond Upon Thames	L	178.28
Wandsworth	L	145.73	Barnet	L	176.94
Oxford	SE	141.37	Tower Hamlets	L	168.39
Haringey	L	140.34	Kingston upon Thames	L	166.35

Notes & Source: As Table 2.3

Table 2.5 presents ten local authorities with the highest weekly average rents as in 1996/97 and 2000/01 for unfurnished properties. In 1996/97, Kensington and Chelsea had the highest average weekly rent (£174.92) followed by Camden (£167.90) and Hammersmith and Fulham (£153.46). Among the 10 local authorities for the year, eight were also named as the highest ten for furnished property rent. All the top ten local authorities were from London GOR, except Elmbridge from South East.

In 2000/01, Kensington and Chelsea kept the highest place with £219.30, followed by Camden (£201.46) and Richmond upon Thames (£176.31). Of the highest ten local authorities for the year, eight local authorities had ranked as such in 1996/97. Compared with the list for furnished property rents, eight local authorities were listed on the both table for the year. By region, eight were from London and the remaining two from South East, hinting that as well as the former region, the latter appeared to be an engine for the upward expansion of the regional rent discrepancy for unfurnished properties.

Table 2.5 10 local authorities with the highest weekly average rents (unfurnished) £s

1996/97			2000/01		
Kensington and Chelsea	L	174.92	Kensington and Chelsea	L	219.30
Camden	L	167.90	Camden	L	201.46
Hammersmith and Fulham	L	153.46	Richmond upon Thames	L	176.31
Westminster	L	149.54	Islington	L	173.64
Elmbridge	SE	142.62	Elmbridge	SE	172.85
Islington	L	138.12	Westminster	L	168.29
Richmond upon Thames	L	133.53	Kingston upon Thames	L	163.15
Wandsworth	L	132.33	Hammersmith and Fulham	L	161.83
Kingston upon Thames	L	125.81	Wandsworth	L	160.99
Brent	L	124.47	Woking	SE	156.97

Notes & Source: As Table 2.3

Local authorities with a low weekly average rent

Table 2.6 presents ten local authorities with the lowest weekly average rents in 1996/97 and 2000/01 respectively for furnished properties. In 1996/97, Boston had the highest average weekly rent (£51.77) followed by Wansbeck (£54.11) and West Lindsey (£54.23). Of the lowest ten local authorities, seven were from East Midlands and three were from North East.

In 2000/01, Boston remained at the lowest place with £52.67, followed by Kingston upon Hull (£57.45) and East Lindsey (£57.45). Seven local authorities appeared on the lowest-ten lists both for 1996/97 and 2000/01. Of the ten local authorities for 2000/01, six were from East Midlands, three from North East and the remaining one from Yorkshire and the Humber.

Table 2.6 10 local authorities with the lowest weekly average rents (furnished) £s

1996/97			2000/01		
Boston	EM	51.77	Boston	EM	52.67
Wansbeck	NE	54.11	Kingston upon Hull UA	YH	57.45
West Lindsey	EM	54.23	East Lindsey	EM	57.48
Mansfield	EM	54.61	West Lindsey	EM	57.85
East Lindsey	EM	54.68	Berwick-upon Tweed	NE	58.13
Berwick-upon Tweed	NE	54.89	Easington	NE	58.28
Ashfield	EM	55.41	Mansfield	EM	58.50
Alnwick	NE	56.34	Ashfield	EM	58.58
South Holland	EM	56.68	South Holland	EM	58.90
North Kesteven	EM	57.00	Derwentside	NE	59.28

Notes & Source: As Table 2.3

Table 2.7 presents ten local authorities with the lowest weekly average rents as in 1996/97 and 2000/01 for unfurnished properties. In 1996/97, Wansbeck had the lowest weekly average rent (£41.43) followed by Berwick-upon Tweed (£45.38) and Gateshead (£45.76). Among the 10 local authorities for the year, three were also named as the lowest ten for furnished property rent. The regional constituents of the ten local authorities were seven from East Midlands and the remainders were each from North West, East Midlands and Yorkshire and the Humber.

In 2000/01, Wansbeck kept the lowest place with £49.56, followed by Berwick-upon Tweed (£51.95) and South Tyneside (£53.32). Of the lowest ten local authorities for the year, seven local authorities had ranked as such in 1996/97. Three local authorities were named on the lists of the lowest rents both for furnished and unfurnished properties in 2000/01. By region,

seven were from North East, two from East Midlands, and the remaining one from North West.

Table 2.7 10 local authorities with the lowest weekly average rents (unfurnished) £s

1996/97			2000/01		
Wansbeck	NE	41.43	Wansbeck	NE	49.56
Berwick-upon Tweed	NE	45.38	Berwick-upon Tweed	NE	51.95
Gateshead	NE	45.76	South Tyneside	NE	53.32
Castle Morpeth	NE	47.42	Gateshead	NE	53.90
Barrow-in-Furness	NW	48.14	Castle Morpeth	NE	54.66
South Tyneside	NE	48.39	Teesdale	NE	56.15
Alnwick	NE	48.93	West Lindsey	EM	56.45
Bolsover	EM	50.43	Barrow-in-Furness	NW	56.78
Barnsley	YH	50.43	Bolsover	EM	56.93
North Tyneside	NE	50.53	Derwentside	NE	57.05

Notes & Source: As Table 2.3

Local authorities with fast rent growth

In comparison between 1996/97 and 2000/01, some local authorities witnessed significantly rapid increases in weekly average rents. For example, increases of more than 20% were observed in 30 local authorities for furnished property rents and in 71 local authorities for unfurnished property rents.

Table 2.8 displays the regional distributions of such local authorities. As for furnished property rents, 46.7% or 14 local authorities were from South East while 40.0% or 12 were from London. The two regions shared greatly for unfurnished property rent increases as well – 39.4% or 28 local authorities were from South East and 23.9% or 17 from London. East and East Midlands had equally eight local authorities on the list and South West had seven.

Table 2.8 No. of local authorities with the average weekly rents increasing by 20% or more from 1996/97 to 2000/01

	furnished		unfurnished	
East	2	6.7%	8	11.3%
East Midlands	-	-	8	11.3%
London	12	40.0%	17	23.9%
North East	-	-	-	-
North West	-	-	-	-
South East	14	46.7%	28	39.4%
South West	-	-	7	9.9%
West Midlands	2	6.7%	3	4.2%
Yorkshire and the Humber	-	-	-	-
England	30	100.0%	71	100.0%

Notes & Source: As Table 2.3

Table 2.9 presents ten local authorities with the fastest increase in weekly average rent of furnished properties from 1996/97 to 2000/01. Kensington and Chelsea had the highest increase rate of 32.1% for the period – from £180.61 in 1996/97 to £238.66 in 2000/01. As previously seen, the local authority's weekly average rent was the highest at the beginning of the observation period, and thus, the area's fastest increase rate accelerated the regional gap. The second fastest rate was observed in Reading (29.0% - from £102.18 in 1996/97 to £131.77 in 2000/01). This was followed by Tunbridge (28.5% - from £86.33 in 1996/97 to £110.95 in 2000/01). Of the ten local authorities with the fastest rent increase, seven were from South East, two from London, and the reaming one from East.

Table 2.9 10 local authorities with the highest increase in weekly average rents (furnished) £s

		1996/97	2000/01	change
Kensington and Chelsea	L	180.61	238.66	32.1%
Reading UA	SE	102.18	131.77	29.0%
Tunbridge Wells	SE	86.33	110.95	28.5%
Three Rivers	E	110.14	139.29	26.5%
Bracknell Forest UA	SE	114.74	144.90	26.3%
Spelthorne	SE	119.04	150.18	26.2%
Tower Hamlets	L	133.54	168.39	26.1%
Woking	SE	118.57	148.47	25.2%
Horsham	SE	97.07	121.40	25.1%
West Berkshire UA	SE	100.26	124.86	24.5%

Notes & Source: As Table 2.3

Table 2.10 presents ten local authorities with the fastest increase in weekly average rent of unfurnished properties from 1996/97 to 2000/01. Cambridge had the highest increase rate of 80.0% for the period – from £70.36 in 1996/97 to £126.88 in 2000/01. [5] This was followed by Harrow (51.8% - from £98.76 in 1996/97 to £149.89 in 2000/01), and South Northamptonshire (50.4% - from £63.63 in 1996/97 to £95.67 in 2000/01). Only one local authority, Woking, appeared simultaneously on the fastest rent increase lists for furnished and unfurnished properties rents. Of the ten local authorities with the fastest rent increase, three were each from South East and East Midlands and two each from East and London.

Table 2.10 10 local authorities with the highest increase in weekly average rents (unfurnished) £s

		1996/97	2000/01	change
Cambridge	E	70.36	126.68	80.0%
Harrow	L	98.76	149.89	51.8%
South Northamptonshire	EM	63.63	95.67	50.4%
Slough UA	SE	90.60	134.74	48.7%
South Cambridgeshire	E	65.09	96.46	48.2%
Haringey	L	111.4	154.38	38.6%
Northampton	EM	57.18	78.3	36.9%
Wellingborough	EM	53.26	72.4	35.9%
Woking	SE	117.65	156.97	33.4%
Test Valley	SE	88.07	116.65	32.5%

Notes & Source: As Table 2.3

Local authorities with a decrease in rents

There were some local authorities experienced decreases in weekly average rents between 1996/97 and 2000/01. Table 2.8 displays the regional distributions of such local authorities. As for furnished property rents, of 25 local authorities with a rent decrease, 13 were from North West and 4 from West Midlands (16.0%). Of 10 local authorities with a decrease in rent for unfurnished properties, 9 were from North West.

[5] For reference, Cambridge's increase rate of furnished property rent for the corresponding period was 15.1%, while increase rate of unfurnished property rent for Kensington and Chelsea was 25.4%.

Table 2.11 No. of local authorities with the average weekly rents decreasing from 1996/97 to 2000/01

	furnished		unfurnished	
East	1	4.0%	-	-
East Midlands	-	-	-	-
London	-	-	-	-
North East	3	12.0%	-	-
North West	13	52.0%	9	90.0%
South East	1	4.0%	1	10.0%
South West	1	4.0%	-	-
West Midlands	4	16.0%	-	-
Yorkshire and the Humber	2	8.0%	-	-
England	25	100.0%	10	100.0%

Notes & Source: As Table 2.3

Table 2.12 presents ten local authorities with the largest decrease in weekly average rent of furnished properties from 1996/97 to 2000/01. Manchester had the largest decline of 16.0% for the period – from £74.31 in 1996/97 to £62.44 in 2000/01. The second fastest drop was observed in Stockport (6.1% - from £89.31 in 1996/97 to £83.88 in 2000/01). This was followed by Liverpool (5.2% - from £69.55 in 1996/97 to £65.95 in 2000/01). Of the ten local authorities in the table, six were from North West, two from West Midlands, and one each from South West and Yorkshire and the Humber.

Table 2.12 10 local authorities with the largest decrease in weekly average rents (furnished) £s

		1996/97	2000/01	change
Manchester	NW	74.31	62.44	-16.0%
Stockport	NW	89.31	83.88	-6.1%
Liverpool	NW	69.55	65.95	-5.2%
Mid Devon	SW	70.73	67.51	-4.6%
South Shropshire	WM	71.84	68.65	-4.4%
Trafford	NW	88.08	84.47	-4.1%
Tameside	NW	72.71	69.86	-3.9%
Ryedale	YH	74.95	72.37	-3.4%
Stafford	WM	74.49	72.43	-2.8%
St. Helens	NW	71.13	69.17	-2.8%

Notes & Source: As Table 2.3

Table 2.13 presents ten local authorities with the largest decrease in weekly average rents of unfurnished properties from 1996/97 to 2000/01. Manchester had the largest decline of 13.1% for the period – from £67.50 in 1996/97 to £58.66 in 2000/01. The second fastest drop was observed in Liverpool (2.6% - from £63.82 in 1996/97 to £62.18 in 2000/01). This was followed by Stockport (2.1% - from £80.30 in 1996/97 to £78.61 in 2000/01). Four local authorities appeared in this table as well as the table for furnished property rent decreases. Of the ten local authorities in the table, nine were from North West and the remaining one from South East.

Table 2.13 10 local authorities with the largest decrease in weekly average rents (unfurnished) £s

		1996/97	2000/01	change
Manchester	NW	67.50	58.66	-13.1%
Liverpool	NW	63.82	62.18	-2.6%
Stockport	NW	80.30	78.61	-2.1%
Bolton	NW	66.48	65.38	-1.7%
Halton UA	NW	74.32	73.48	-1.1%
Copeland	NW	58.58	58.16	-0.7%
Bury	NW	66.32	66.09	-0.3%
Salford	NW	64.29	64.16	-0.2%
Hart	SE	104.98	104.89	-0.1%
Knowsley	NW	69.01	68.97	-0.1%

Notes & Source: As Table 2.3

2.5 Private sector rents of rural and urban areas

Table 2.14 presents the average of privet sector weekly rents of furnished and unfurnished properties for local authorities in rural and urban areas over the period of 1996/97 to 2000/01. The categorisation of rural or urban area is based on the definition by Department for Environment, Food and Rural Affairs (DEFA). [6]

As for furnished properties, in 2000/01, the weekly average rents were £76.22 and £94.85 for the rural and urban areas respectively. Through the observation period, the weekly average rent of the rural area continuously increased. Except in 1996/98, the equivalent for the urban area also increased. Compared with 1996/97, the weekly average rents in 2000/01 rose by £3.52 or 4.8% for the rural area and by £2.74 or 3.0% for the urban area.

Regarding unfurnished properties, in 2000/01, the weekly average rents were £78.35 and £80.60 in the rural and urban areas respectively. Through the observation period, the weekly average rents both for the rural and urban areas continuously increased. Compared with 1996/97, the weekly average rents in 2000/01 rose by £7.20 or 10.1% for the rural area and by £5.76 or 7.7% for the urban area

Table 2.14 Weekly average rents by rural-urban classification £s

		1996/97	1997/98	1998/99	1999/00	2000/01	Change (96/97 - 00/01)	annualised change
Furnished	Rural	72.70	73.59	73.67	74.79	76.22	4.8%	1.1%
	Urban	92.11	92.69	92.05	94.89	94.85	3.0%	0.8%
Unfurnished	Rural	71.15	72.80	74.24	75.75	78.35	10.1%	2.4%
	Urban	74.84	76.32	78.01	79.25	80.60	7.7%	1.9%

Notes & Source: As Table 2.1 (weighted by cases)

[6] DEFA (2006) 'Rural Definition and Local Authority Classification', available from http://www.defra.gov.uk/rural/ruralstats/rural-definition.htm#defn, accessed in September 2006.

3. Private sector house prices across England 1996/97 – 2000/01

3.1 Definition of private sector house prices

Private sector house prices in this paper are provided by the ODPM/Land Registry. Lower quartile (LQ) house prices for local authorities of England are used in the analyses, because the rent data set used is representative of the lower end of the market and the lower quartile is the mid-point of lower half of the distribution of house prices.

The data consist of five years' sets corresponding the period of the private sector rent cases. An annual term is from April to the following year's March. Cases from the local authorities which were excluded in the analyses on the private sector rents of furnished properties are also excluded in this section. The LQ house prices are neither categorised by tenure nor inflationary adjusted.

3.2 The national trend of private sector house prices

Table 3.1 presents the average of local authorities' LQ house prices across England from 1996/97 to 2000/01. During the observation period from 1996/97 to 2000/01, the national average increased continuously. Compared with the 1996/97 price of £45,723.2, the figure rose to £66,191 in 2000/01. This means that the growth rate of the LQ house price during the period was 44.8% or 9.8% at an annualised base. This upward trend agrees with the private sector rent movement in the same period, but the house prices increased more promptly.

Table 3.1 Lowest quarter house price, £s

1996/97	1997/98	1998/99	1999/00	2000/01	change (96/97 - 00/01)	annual change
44,859.2	48,323.9	52,165.2	58,277.9	66,194.6	47.6%	10.1%

Note: Local authorities subject to Table 2.1 only.
Source: Dataspring's calculation, based on the ODPM/Land Registry.

3.3 The regional trend of private houses

Table 3.2 shows the average of LQ house prices by GOR region. In 2000/01, the highest price was observed in London (£111,608.6), while the lowest was in North East (£34,311.7). All the regions witnessed consecutive increases during the observation period.

London showed the fastest rise in a house price during the period – by £49,781.9 or 80.5% (annualised 16.2%). The slowest increase was seen in North East – by £2,467.1 or 7.7% (annualised 2.1%).

Table 3.2 Lowest quarter house price by region, £s

	1996/97	1997/98	1998/99	1999/00	2000/01	change (96/97 - 00/01)	annualised change
East	46,880.4	51,102.1	55,549.6	62,138.6	71,796.7	53.1%	11.0%
East Midlands	36,835.7	38,987.9	40,758.6	43,605.8	47,623.1	29.3%	6.5%
London	60,646.8	67,948.3	77,430.4	93,820.0	112,030.2	84.7%	16.8%
North East	32,075.1	32,877.7	33,452.7	35,327.2	35,376.6	10.3%	2.7%
North West	34,528.9	35,759.1	36,847.5	38,497.3	39,690.0	14.9%	3.6%
South East	55,127.2	60,884.9	67,367.1	76,797.9	90,369.8	63.9%	13.0%
South West	45,109.6	48,487.7	52,040.2	58,552.9	67,646.7	50.0%	10.5%
West Midlands	42,071.3	44,320.5	46,663.6	50,286.7	55,106.9	31.0%	6.9%
Yorkshire and The Humber	37,808.2	38,966.8	39,834.2	42,002.6	44,416.3	17.5%	4.1%

Note & Source: As Table 3.1

3.4 Private sector house prices at local authority level

Range of LQ house prices

Table 3.3 presents range of LQ house prices for local authorities across England over the period 19996/97 to 2000/01. It is shown that the range had widened for observation period.

In 1996/97, the lowest LQ house price among the English local authorities was £18,000, while the highest £124,250. This means that a range of LQ house prices across the local authorities was £106,250. The standard deviation for the year was £13,380.5. In 2000/01, the lowest and the highest were £17,500 and £222,500 respectively, and thus the range expanded to £205,000. The standard deviation also increased to £30,197.5.

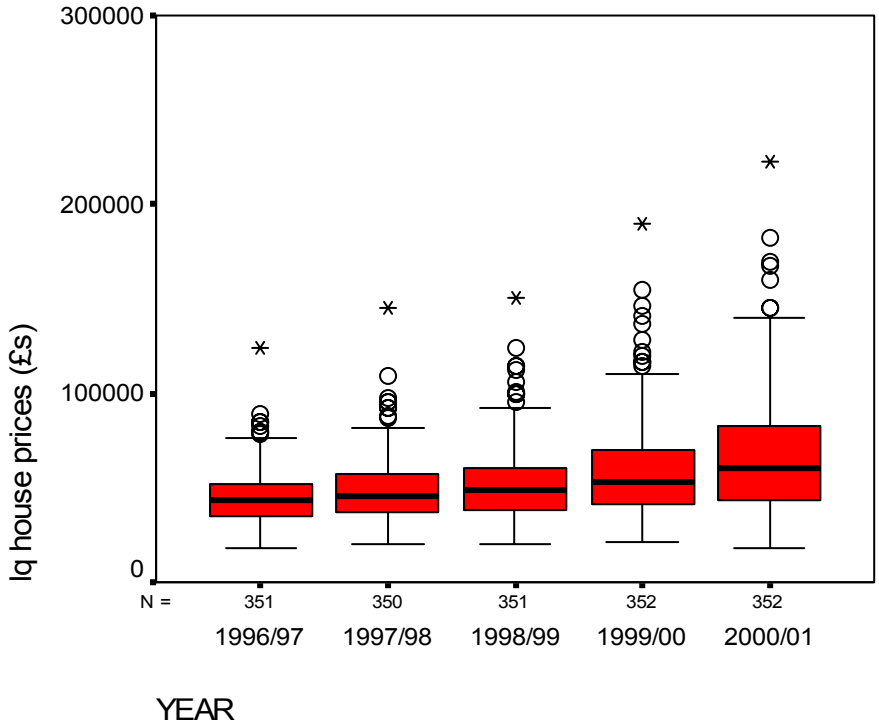
Table 3.3 Range of the lowest quarter house price at local authority level: £s

	1996/97	1997/98	1998/99	1999/00	2000/01
Median	43,250.0	45,625.0	48,995.0	53,531.5	60,000.0
Std. Deviation	13,380.5	15,877.2	18,994.6	24,007.3	30,197.5
Minimum	18,000.0	20,000.0	19,950.0	21,000.0	17,500.0
Maximum	124,250.0	145,000.0	150,000.0	190,000.0	222,500.0
Range	106,250.0	125,000.0	130,050.0	169,000.0	205,000.0

Note & Source: As Table 3.1

Figure 3.1 illustrates the ranging patterns of the LQ house prices of the English local authorities from 1996/97 to 2000/01. The notations of the figure follow those of Figure 2.1. The figure explains that in each year there was a positive skew to the data, as more local authorities' LQ house prices were located above the median line, and the range broadened from the previous year dominantly upwards. The outliers of LQ house prices only in a high value area of the graph. This suggests that a widening regional discrepancy of LQ house prices across England was owing to local authorities with high LQ house prices.

Figure 3.1 Distribution of LQ house prices of the English local authorities



Local authorities with a high/low LQ house price

Table 3.4 presents ten local authorities with the highest LQ house prices among the English local authorities in 1996/97 and 2000/01. In 1996/97, Kensington and Chelsea had the highest LQ house price (£124,250), followed by Westminster (£89,500) and Camden (£85,000). The top-three order was identical to that for furnished property rent in the same year (see Table 2.4). The highest ten local authorities were evenly from London and South East.

2000/01 kept the same local authorities at the top three positions – Kensington and Chelsea (£222,500), Westminster (£182,642.5) and Camden (169,612.5) – and they were also listed as the highest three for furnished property rents in the same year. Of ten local authorities, seven were from London and three were from South East. Eight local authorities remained on the list from 1996/97.

Table 3.4 10 local authorities with the highest in the LQ house price £s

1996/97			2000/01		
Kensington and Chelsea	L	124,250.0	Kensington and Chelsea	L	222,500.0
Westminster	L	89,500.0	Westminster	L	182,642.5
Camden	L	85,000.0	Camden	L	169,612.5
Richmond Upon Thames	L	84,500.0	Hammersmith and Fulham	L	168,000.0
Hammersmith and Fulham	L	83,000.0	Richmond Upon Thames	L	159,950.0
South Buckinghamshire	SE	80,000.0	Islington	L	145,000.0
Elmbridge	SE	80,000.0	Elmbridge	SE	145,000.0
Chiltern	SE	78,500.0	South Buckinghamshire	SE	140,000.0
Windsor and Maidenhead	SE	76,000.0	Windsor and Maidenhead	SE	137,500.0
Mole Valley	SE	76,000.0	Wandsworth	L	135,000.0

Note & Source: As Table 3.1

Table 3.4 presents ten local authorities with the lowest LQ house prices among the English local authorities in 1996/97 and 2000/01. In 1996/97, Burnley had the lowest LQ house price (£18,000), followed by Pendle (£19,000) and Hyndburn (£20,000). None of the three, however, appeared as the lowest in terms of weekly average rents both for furnished and unfurnished properties (see Tables 2.6 and 2.7). Of the ten local authorities, seven were from North West, two from North East and the remaining one from West Midlands.

2000/01 kept the same local authorities at the bottom three positions – Burnley (£17,500), Pendle (£20,000) and Hyndburn (£20,186.8). None of them were named on the lowest lists of furnished property rent and unfurnished property rents for the same year. Of the ten local authorities, five were from North West, four from North East and the remaining one from Yorkshire and the Humber. Seven local authorities remained on the list from 1996/97.

Table 3.5 10 local authorities with the lowest in the LQ house price £s

1996/97			2000/01		
Burnley	NW	18,000.0	Burnley	NW	17,500.0
Pendle	NW	19,000.0	Pendle	NW	20,000.0
Hyndburn	NW	20,000.0	Hyndburn	NW	20,186.8
Barrow-in-Furness	NW	20,200.0	Middlesbrough UA	NE	24,000.0
Easington	NE	22,000.0	Barrow-in-Furness	NW	24,500.0
Blackburn with Darwen UA	NW	22,500.0	Easington	NE	24,950.0
Manchester	NW	22,500.0	Blackburn with Darwen UA	NW	25,000.0
Wansbeck	NE	23,000.0	Wansbeck	NE	25,000.0
Stoke-on-Trent UA	WM	23,000.0	Hartlepool UA	NE	25,000.0
Rossendale	NW	25,537.5	Kingston upon Hull UA	YH	25,500.0

Notes & Source: As Table 3.1

Local authorities with a fast /slow growth in LQ house price

In comparison between 1996/97 and 2000/01, some local authorities witnessed significantly fast increases in LQ house prices. For example, increases of more than 60% were observed in 81 local authorities. Table 3.6 displays the regional distributions of such local authorities. Of 81, 38 local authorities (46.9%) were from South East and 28 (34.6%) were from London.

Table 3.6 No. of local authorities with LQ house price increasing by more than 60% from 1996/97 to 2000/01

East	8	9.9%
East Midlands	2	2.5%
London	28	34.6%
North East	-	-
North West	-	-
South East	38	46.9%
South West	5	6.2%
West Midlands		
Yorkshire and the Humber	-	-
England	81	100.0%

Note & Source: As Table 3.1

Table 3.7 presents ten local authorities with the fastest increase in LQ house prices from 1996/97 to 2000/01. Southwark had the highest increase rate of 120.0% for the period – from £50,000 in 1996/97 to £110,000 in 2000/01. The second fastest rate was observed in Tower Hamlets (112.1% - from £58,000 in 1996/97 to £123,000 in 2000/01). This was followed by Lambeth (111.1% - from £54,000 in 1996/97 to £114,000 in 2000/01). London's local authorities dominated the table – 9 of 10 were from the region, and the remaining one from South East. Of the ten local authorities, only one local authority, Tower Hamlets, was named on the equivalent table for the furnished property rents (see Table 2.9). None of the local authorities were listed as such in the equivalent table for unfurnished property rent.

Table 3.7 10 local authorities with the highest increase in LQ house price £s

		1996/97	2000/01	change
Southwark	L	50,000.0	110,000.0	120.0%
Tower Hamlets	L	58,000.0	123,000.0	112.1%
Lambeth	L	54,000.0	114,000.0	111.1%
Hackney	L	48,000.0	100,000.0	108.3%
Westminster	L	89,500.0	182,642.5	104.1%
Hammersmith and Fulham	L	83,000.0	168,000.0	102.4%
Wandsworth	L	67,400.0	135,000.0	100.3%
Islington	L	72,612.5	145,000.0	99.7%
Camden	L	85,000.0	169,612.5	99.5%
Reading UA	SE	49,000.0	95,500.0	94.9%

Note & Source: As Table 3.1

Table 3.8 displays the regional distributions of 35 local authorities with LQ house prices decreasing or increasing by 10% or less. Of 35, 14 local authorities (40.0%) were from North West and 12 (34.3%) were from North East.

Table 3.8 No. of local authorities with LQ house price increasing by 10% or less from 1996/97 to 2000/01

East	-	-
East Midlands	3	8.6%
London	-	-
North East	12	34.3%
North West	14	40.0%
South East	-	-
South West	-	-
West Midlands	1	2.9%
Yorkshire and the Humber	5	14.3%
England	35	100.0%

Note & Source: As Table 3.1

Table 3.9 presents ten local authorities with the slowest increase (including decreases) in LQ house prices from 1996/97 to 2000/01. Middlesbrough had the largest decrease rate of 15.3% for the period – from £28,340.8 in 1996/97 to £24,000 in 2000/01. The second largest drop rate was observed in Hartlepool (7.4% - from £27,000 in 1996/97 to £25,000 in 2000/01). This was followed by Oldham (3.6% - from £28,000 in 1996/97 to £27,000 in 2000/01). Of the ten local authorities on the list, four each were from North East and North West, and one each from Yorkshire and the Humber and East Midlands.

Table 3.9 10 local authorities with the lowest change in LQ house price £s

		1996/97	2000/01	change
Middlesbrough UA	NE	28,340.8	24,000.0	-15.3%
Hartlepool UA	NE	27,000.0	25,000.0	-7.4%
Oldham	NW	28,000.0	27,000.0	-3.6%
Burnley	NW	18,000.0	17,500.0	-2.8%
Kingston upon Hull UA	YH	25,950.0	25,500.0	-1.7%
Preston	NW	34,000.0	34,000.0	0.0%
Sunderland	NE	29,950.0	30,000.0	0.2%
Hyndburn	NW	20,000.0	20,186.8	0.9%
Chester-le-Street	NE	35,000.0	35,500.0	1.4%
North East Lincolnshire UA	EM	28,950.0	30,000.0	3.6%

Note & Source: As Table 3.1

3.5 Private sector house prices of rural and urban areas

Table 2.10 presents the average of LQ house prices for rural and urban local areas over the period of 1996/97 to 2000/01. The categorisation of rural or urban area agrees with that in Section 2. In 2000/01, the average of LQ house prices rents were £65,746.5 and £66,504.8 for the rural and urban areas respectively. Through the observation period, the average of LQ house prices of both groups continuously increased. Compared with 1996/97, the average of LQ house prices in 2000/01 rose by £19,978.9 or 43.7 for the rural area and by £22,277.6 or 50.4% for the urban area.

Table 3.3 Lowest quarter house price by rural or urban, £s

	1996/97	1997/98	1998/99	1999/00	2000/01	change (96/97 - 00/01)	annualised change
Rural	45,767.6	49,010.0	52,426.1	57,991.9	65,746.5	43.7%	9.3%
Urban	44,227.2	47,844.3	51,983.7	58,476.0	66,504.8	50.4%	10.7%

Note & Source: As Table 3.1

4. Relationship between private sector rents and house prices across England 1996/97 – 2000/01

This section explains how private rents vary in relation to house prices. Firstly, we will examine a degree of correlation between private sector rents and house prices across England over the period of 1996/97 to 2000/01. Then, we will study how the private sector rents are associated with the house prices. Our study will elaborate the test results by geographical and annual breakdowns.

4.1 Methodology

Data, which we will use in this section, are the same as those described in Sections 1 and 2 (for the details, see Table 4.1). The private sector rents only for furnished properties will be tested, as the overall movements of rents for furnished properties and unfurnished properties were in tandem with each other during the observation period. The measurement unit of the house prices in the tests is a thousand pounds. [7]

Table 4.1 Data for the test

variable	description	unit	period	source	note
private sector rent	Weekly average rent for the local authorities across England	£s	annual (1996/97 - 2000/01)	as in Section 1	Rents for furnished property only. Data for local authorities with fewer rent cases or missing values are excluded
private sector house price	Lower quartile (LQ) house price for the local authorities across England	'000 £s	annual (1996/97 - 2000/01)	as in Section 2	Data for local authorities with fewer rent cases or missing values are excluded

In our tests, firstly, correlation coefficients between the private sector rents and house prices will be measured to see a degree of relationship between the two variables. Then, we will run the following simple linear regression to examine how private sector rents are associated with private sector house prices.

Model: Weekly rent (£s) = $\alpha + \beta$ * LQ house price ('000 £s) + u;

where α is a constant term,
β is a coefficient for private house price and
u is an error term.

Many pieces of literature explained similar determinants for rent and prices. If this applies to private sector rents and house prices markets across England, then the rents and house prices positively correlated regardless of time and region. Therefore, the hypotheses of the tests are that the correlation coefficients will be positive and close to unity, and that in the regression β will appear positive with statistical significance.

[7] The natural logarithm form for the rents and/or house prices presented the similar test results, while not having significant convenience for the description and interpretation, and thus we used non-log forms.

4.2 Relationship between private sector rents and house price: England, 1999/97 to 2000/01

First of all, the tests for the local authorities across all over England in the sample period were implemented. The results are:

The correlation coefficient for the rents and house prices is 0.866. This means that the rents and house prices appeared to have significantly positive relationship.

The regression results are:

Weekly rent = 30.146 + 1.046 * LQ house price.
(35.920)*** (72.933)***
t-value in parenthesis, R^2 = 0.752, Adjusted R^2 = 0.752
N=1,756
*** 1-% significance level

The equation confirms the significantly positive relationship between rent and house price. The coefficient of house price was significantly positive (1.046) and the reasonably high adjusted R^2 implies that the model fit the data well. The model explains that a local authority where an LQ house price was £50,000, on average over the period 19996/97 to 2000/01 had a weekly average rent of £82.45 (= 30.146 + 1.046 * £50) for the same period. [8] The illustration of the linear model and the scattering patterns of local authorities according to their rents and house prices during the five year are presented in Figure 4.1

Figure 4.1 Relationship between private sector rents and house prices: England

[8] It should be remembered that this does not equal that a house priced for £50,000 was being let with a rent of £82.45.

4.3 Relationship between private sector rents and house price by region

Across the country, the significantly positive relationship between private sector rents and house prices has been observed. Next, we will examine whether the similar relationship can be found at regional level for the same period by sampling local authorities in each Government Office Region (GOR).

East

The correlation coefficient was 0.829, suggesting that the positive relationship between the two variables.

The regression result was:

Weekly rent = 34.083 + 0.936 * LQ house price
(13.876)*** (22.899)***
t-value in parenthesis, R^2 = 0.688, Adjusted R^2 = 0.686
N=240
*** 1-% significance level

The coefficient of house price was significantly positive (0.936) and the high adjusted R^2 implies that the model fit the data fairly well. This explains that if an average LQ house price was £50,000 in a local authority of the East region over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £80.88 (below the national level by £1.57) for the same period. Figure 4.2 illustrates the relationship and the scattering patterns of ther region's local authorities.

Figure 4.2 Relationship between private sector rents and house prices in East

East Midlands

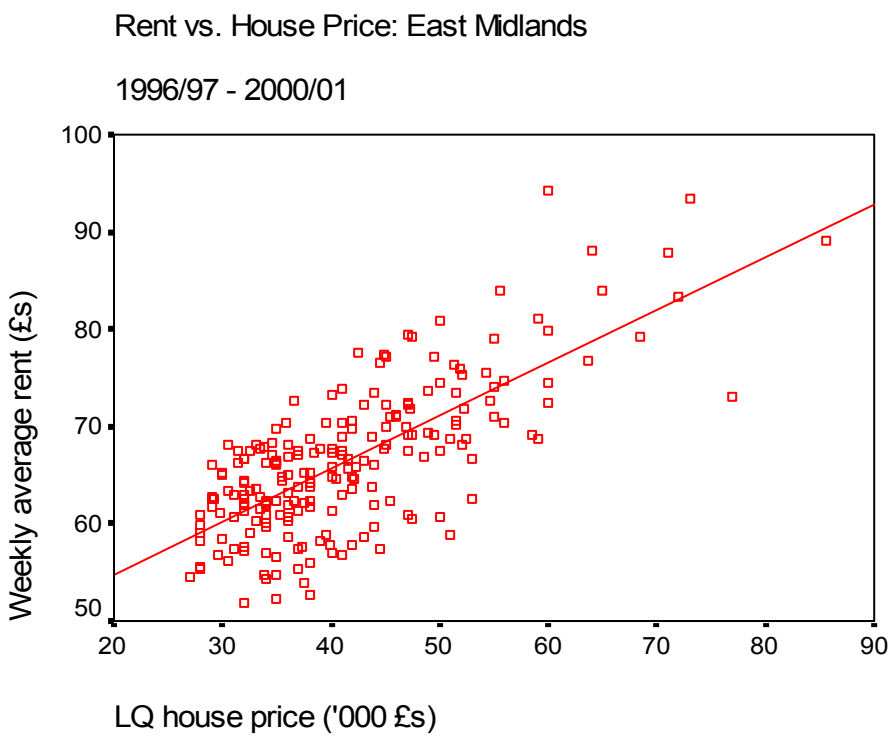
The correlation coefficient was 0.735, suggesting that the positive relationship between the two variables.

The regression result was:

Weekly rent = 43.813 + 0.545 * LQ house price
(29.377)***(15.620)***
t-value in parenthesis, R^2 = 0.540, Adjusted R^2 = 0.538
N=210
*** 1-% significance level

The coefficient of house price was significantly positive (0.545) and the high adjusted R^2 implies that the model fit the data fairly well. This explains that if an average LQ house price was £50,000 in a local authority of the East Midlands region over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £71.06 (below the national level by £11.39) for the same period. Figure 4.3 illustrates the relationship and the scattering patterns of the region's local authorities.

Figure 4.3 Relationship between private sector rents and house prices in East Midlands



London

The correlation coefficient was 0.895, suggesting that the positive relationship between the two variables.

The regression result was:

Weekly rent = 78.885 + 0.769 * LQ house price
(29.254)*** (25.195)***
t-value in parenthesis, R^2 = 0.801, Adjusted R^2 = 0.799
N=160
*** 1-% significance level

The coefficient of house price was significantly positive (0.769) and the high adjusted R^2 implies that the model fit the data fairly well. This explains that if an average LQ house price was £50,000 in a local authority of London region over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £117.34 (above the national level by £34.89) in the same period. The equation for London displayed a particularly high intercept (78.885), explaining that even a local authority with a relatively low LQ house price had a high average weekly rent in the observation period. Figure 4.4 illustrates the relationship and the scattering patterns of the region's local authorities.

Figure 4.4 Relationship between private sector rents and house prices in London

North East

The correlation coefficient was 0.420, suggesting positive relationship between private sector rents and house prices in the region but significance of the linkage appeared weak in comparison with the national and other regions' results.

The regression result was:

Weekly rent = 55.054 + 0.213 * LQ house price
(36.730)***(4.917)***
t-value in parenthesis, R^2 = 0.176, Adjusted R^2 = 0.169
N=115
*** 1-% significance level

The significantly positive coefficient of LQ house price suggests that the house prices might have an upward influence on rents. According to the equation, that if an average LQ house price was £50,000 in a local authority of the North East region over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £65.70 (below the national level by £16.75) for the same period.

The fairly low adjusted R^2, however, cautions that rents could not be satisfactory explained solely by house prices, implying that one or more other explanatory variables were associated with private sector rents. The unique scattering pattern of the region's local authorities (presented in Figure 4.5) also blurs a relationship between rents and house prices.

Figure 4.5 Relationship between private sector rents and house prices in North East

North West

The correlation coefficient was 0.739, suggesting that the positive relationship between the two variables.

The regression result was:

Weekly rent = 51.502 + 0.538 * LQ house price
(39.882)*** (16.006)***
t-value in parenthesis, R^2 = 0.546, Adjusted R^2 = 0.544
N=215
*** 1-% significance level

The coefficient of house price was significantly positive (0.538) and the high adjusted R^2 implies that the model fit the data fairly well. This explains that if an average LQ house price was £50,000 in a local authority of the North West region over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £78.40 (below the national level by £4.05) for the same period. Figure 4.6 illustrates the relationship and the scattering patterns of the region's local authorities.

Figure 4.6 Relationship between private sector rents and house prices in North West

South East

The correlation coefficient was 0.841, suggesting that the positive relationship between the two variables.

The regression result was:

Weekly rent = 51.840 + 0.772 * LQ house price
(25.827)*** (28.297)***
t-value in parenthesis, R^2 = 0.707, Adjusted R^2 = 0.706
N=334
*** 1-% significance level

The coefficient of house price was significantly positive (0.772) and the high adjusted R^2 implies that the model fit the data fairly well. This explains that if an average LQ house price was £50,000 in a local authority of the South East region over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £90.44 (above the national level by £7.99) for the same period. Figure 4.7 illustrates the relationship and the scattering patterns of the region's local authorities.

Figure 4.7 Relationship between private sector rents and house prices in South East

South West

The correlation coefficient was 0.698, suggesting that the positive relationship between the two variables.

The regression result was:

Weekly rent = 49.441 + 0.538 * LQ house price
(23.674)*** (14.395)***
t-value in parenthesis, R^2 = 0.487, Adjusted R^2 = 0.485
N=220
*** 1-% significance level

The coefficient of house price was significantly positive (0.538) and the high adjusted R^2 implies that the model fit the data fairly well. This explains that if an average LQ house price was £50,000 in a local authority of the South West region over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £76.34 (above the national level by £6.11) for the same period. Figure 4.8 illustrates the relationship and the scattering patterns of the region's local authorities.

Figure 4.8 Relationship between private sector rents and house prices in South West

West Midlands

The correlation coefficient was 0.761, suggesting that the positive relationship between the two variables.

The regression result was:

Weekly rent = 45.767 + 0.608 * LQ house price
(23.072)*** (15.090)***
t-value in parenthesis, R^2 = 0.580, Adjusted R^2 = 0.587
N=167
*** 1-% significance level

The coefficient of house price was significantly positive (0.608) and the high adjusted R^2 implies that the model fit the data fairly well. This explains that if an average LQ house price was £50,000 in a local authority of the West Midlands region over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £76.17 (below the national level by £6.28) for the same period. Figure 4.9 illustrates the relationship and the scattering patterns of the region's local authorities.

Figure 4.9 Relationship between private sector rents and house prices in West Midlands

Yorkshire and the Humber

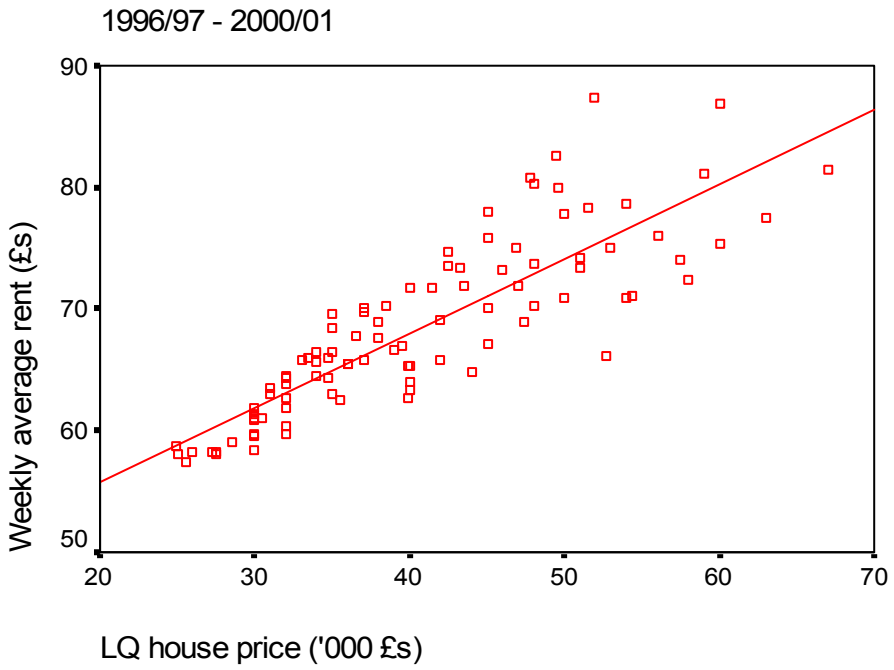
The correlation coefficient was 0.854, suggesting that the positive relationship between the two variables.

The regression result was:

Weekly rent = 43.553 + 0.612 * LQ house price
(27.018)*** (15.862)***
t-value in parenthesis, R^2 = 0.730, Adjusted R^2 = 0.727
N=95
*** 1-% significance level

The coefficient of house price was significantly positive (0.608) and the high adjusted R^2 implies that the model fit the data fairly well. This explains that if an average LQ house price was £50,000 in a local authority of the North West region over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £76.17 (below the national level by £6.28) for the same period. Figure 4.10 illustrates the relationship and the scattering patterns of the region's local authorities.

Figure 4.10 Relationship between private sector rents and house prices in West Midlands



Integrated regions for reference

As presented previously, all nine GORs expect North East, the private sector rents and house prices were in significantly positive correlation, and the former was explained satisfactorily by the latter in a linear equation form. For reference, the same tests were implemented for all the regions excluding this unique region. In addition, sampling three regions with relatively high private sector rents (East, London and South East), the reference tests were undertaken. As reported in Table 4.2, the selected regions also showed the significantly positive relationship between private sector rents and house prices.

Table 4.2 Relationship between private sector rents and house prices in the selected regions

region	correlation coefficient	regression results				
		Constant		Coefficient for LQ house price		Adjusted R^2
All but NE (N=1,641)	0.862	30.581	***	1.042	***	0.742
E, L & SE (N=734)	0.827	41.216	***	0.972	***	0.684

*** 1-% significance level

4.4 Relationship between private sector rents and house prices by rural-urban classification

Using the definition of rural and urban areas for mentioned in Section 1, the same tests were undertaken for the rural and urban areas as below.

Rural local authorities

The correlation coefficient was 0.855, suggesting that the positive relationship between the two variables.

The regression result was:

Weekly rent = 32.392 + 0.851 * LQ house price
(29.719)*** (44.163)***
t-value in parenthesis, R^2 = 0.731, Adjusted R^2 = 0.731
N=720
*** 1-% significance level

The coefficient of house price was significantly positive (0.851) and the high adjusted R^2 implies that the model fit the data fairly well. This explains that if an average LQ house price was £50,000 in a rural local authority over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £74.92 (below the national level by £7.53) for the same period. Figure 4.11 illustrates the relationship and the scattering patterns of the rural local authorities.

Figure 4.11 Relationship between private sector rents and house prices in rural areas

Urban local authorities

The correlation coefficient was 0.909, suggesting that the positive relationship between the two variables.

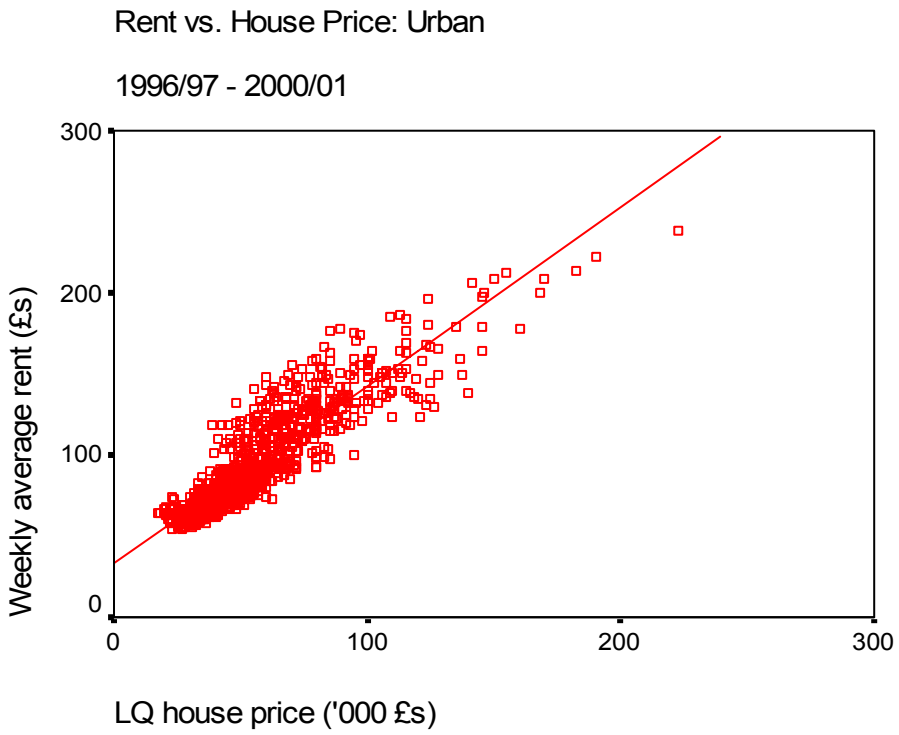
The regression result was:

Weekly rent = 32.993 + 1.100 * LQ house price
(35.101)*** (70.064)***
t-value in parenthesis, R^2 = 0.826, Adjusted R^2 = 0.826
N=1,036
*** 1-% significance level

(note) the intercept is close to the equivalent for Rural, thus steeper slope decides larger urban rent.

The coefficient of house price was significantly positive (0.851) and the high adjusted R^2 implies that the model fit the data fairly well. This explains that if an average LQ house price was £50,000 in an urban local authority over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £88.00 (above the national level by £5.55) for the same period. Compared with the rural areas' results, the coefficient for house price is relatively large, while the intercept fairly close. This implies that a higher average weekly rent for an urban local authority than for a rural local authority when both have the same level of an LQ house price. Also this suggests that a change in LQ house prices reflects a larger degree of change in rents in urban areas than rural areas. Figure 4.12 illustrates the relationship and the scattering patterns of the urban local authorities.

Figure 4.12 Relationship between private sector rents and house prices in urban areas



4.5 Relationship between private sector rents and house price by fast and slow growth in rents and house prices

As reported in Sections 1 and 2, changes in private sector rents and house prices varied across England over the period of 1996/97 to 2000/01. Sampling local authorities with fast and slow changes in private sector rents and house prices in the observation period, the same empirical tests will be implemented as follows. The definition of a fast or slow change is a change belonging to a top or bottom quartile cohort. The distributions of such local authorities across the regions are reported in Tables 4.3 and 4.4 for private sector rents and house prices respectively. [9]

Table 4.3 The number of local authorities with fast/slow growth in rent by region

	growth in weekly average rents from 1996/97 to 2000/01			
	fast	middle	slow	Total
East	12	28	8	48
East Midlands	4	32	6	42
London	25	7		32
North East		8	15	23
North West	2	12	29	43
South East	28	34	5	67
South West	10	26	8	44
West Midlands	7	19	7	34
Yorkshire and the Humber		9	10	19
England	88	175	88	352

Note: Local authorities with fewer rent cases or without corresponding figures between the comparison points were excluded.

Table 4.4 The number of local authorities with fast/slow growth in house price by region

	growth in LQ house price from 1996/97 to 2000/01			
	fast	middle	slow	Total
East	10	38		48
East Midlands	2	27	13	42
London	28	4		32
North East		3	20	23
North West		9	34	43
South East	40	27		67
South West	8	36		44
West Midlands		25	8	33
Yorkshire and the Humber		6	13	19
England	88	175	88	351

Note: As Table 4.3

[9] The sample local authorities in the two tables are not identical for the fast/slow categorisation. See the distribution of the local authorities by rent and house price growth as in the below table.

		LQ house price growth			Total
		fast	middle	slow	
rent growth	fast	63	25		88
	middle	25	116	34	175
	slow		34	54	88
Total		88	175	88	351

Local authorities with fast growth in rents

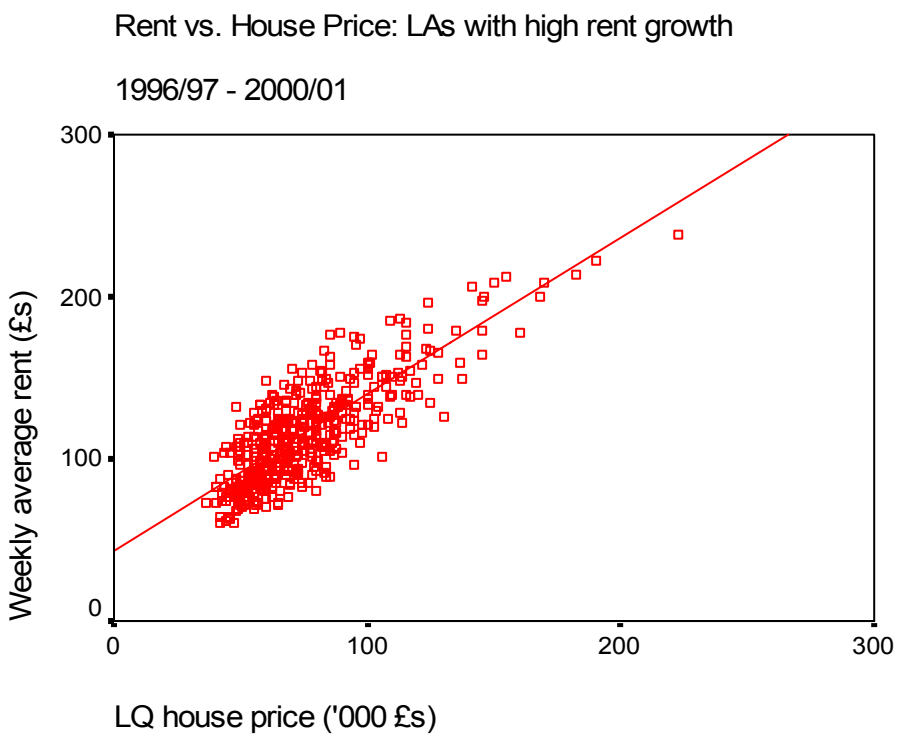
The correlation coefficient was 0.803, suggesting that the positive relationship between the two variables.

The regression result was:

Weekly rent = 42.848 + 0.966 * LQ house price
(15.713)*** (28.186)***
t-value in parenthesis, R^2 = 0.655, Adjusted R^2 = 0.644
N= 440
*** 1-% significance level

The coefficient of house price was significantly positive (0.966) and the high adjusted R^2 implies that the model fit the data fairly well. This explains that if an average LQ house price was £50,000 in a local authority with fast growth over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £91.15 (above the national level by £8.70) for the same period. Figure 4.13illustrates the relationship and the scattering patterns of local authorities with fast growth in rents.

Figure 4.13 Relationship between private sector rents and house prices in local authorities with raid growth in rent



Local authorities with slow growth in rents

The correlation coefficient was 0.669, suggesting that the positive relationship between the two variables.

The regression result was:

Weekly rent = 49.406 + 0.522 * LQ house price
(44.713)*** (18.828)***
t-value in parenthesis, R^2 = 0.447, Adjusted R^2 = 0.446
N= 440
*** 1-% significance level

The coefficient of house price was significantly positive (0.522) and the high adjusted R^2 implies that the model fit the data fairly well. The relatively moderate adjusted R^2, however, cautions the fitness of the model, implying other explanatory variables being associated with private sector rents. This explains that if an average LQ house price was £50,000 in a local authority with a slow growth in rents over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £75.51 (below the national level by £6.94) for the same period. Figure 4.14illustrates the relationship and the scattering patterns of local authorities with slow growth in rents.

Figure 4.14 Relationship between private sector rents and house prices in local authorities with slow growth in rent

Local authorities with fast growth in house prices

The correlation coefficient was 0.765, suggesting that the positive relationship between the two variables.

The regression result was:

Weekly rent = 58.883 + 0.805 * LQ house price
(21.977)*** (24.873)***
t-value in parenthesis, R^2 = 0.585, Adjusted R^2 = 0.585
N= 439
*** 1-% significance level

The coefficient of house price was significantly positive (0.805) and the high adjusted R^2 implies that the model fit the data fairly well. This explains that if an average LQ house price was £50,000 in a local authority with fast growth in house prices over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £99.13 (above the national level by £16.68) for the same period. Figure 4.15 illustrates the relationship and the scattering patterns of local authorities with fast growth in house prices. Figure 4.15 Relationship between private sector rents and house prices in local authorities with fast growth in house prices.

Local authorities with slow growth in house prices

The correlation coefficient was 0.542, suggesting that the positive relationship between the two variables.

The regression result was:

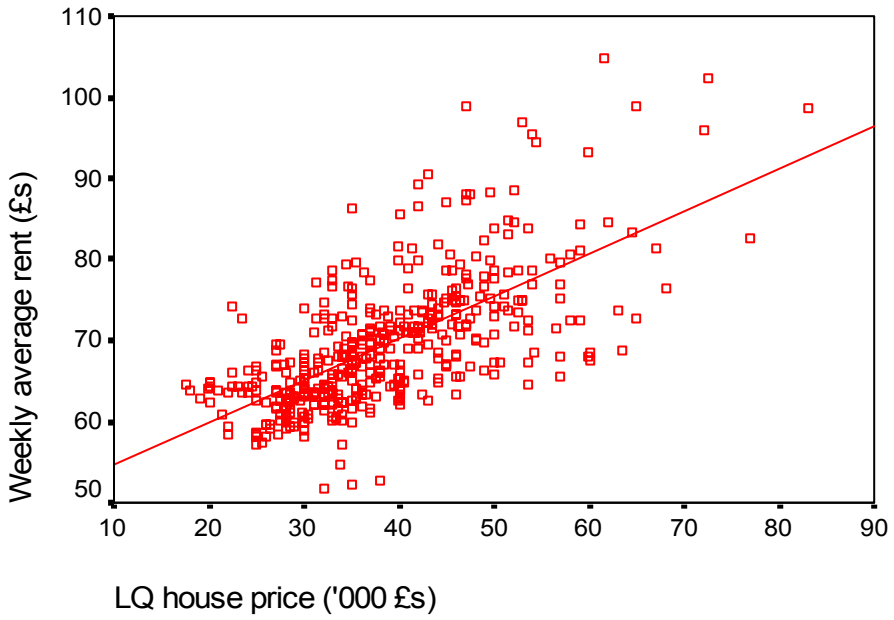
Weekly rent = 48.691 + 0.513 * LQ house price
(36.791)*** (13.503)***
t-value in parenthesis, R^2 = 0.294, Adjusted R^2 = 0.292
N= 440
*** 1-% significance level

The coefficient of house price was significantly positive (0.513) and the high adjusted R^2 implies that the model fit the data fairly well. The fairly low adjusted R^2, however, cautions that rents could not be satisfactory explained solely by house prices, implying that one or more other explanatory variables were associated with private sector rents. The scattering pattern of the sampled local authorities (presented in Figure 4.16) also does not hint the relationship between the two variables is not as significant as the equivalent for the local authorities with a fast house price increase.

This explains that if an average LQ house price was £50,000 in a local authority with slow growth in house prices over the period 19996/97 to 2000/01, the local authority had a weekly average rent of £74.31 (below the national level by £8.11) for the same period. Figure 4.16 Relationship between private sector rents and house prices in local authorities with slow growth in house prices.

Rent vs. House Price: LAs with low rent growth

1996/97 - 2000/01



4.6 Annual changes in relationship between private sector rents and house prices

Finally, we will look at the relationship between private sector rents and house price across England for each year in the observation period of 1996/97 to 200/01. The empirical test results are summarised in Table 4.5. The correlation coefficients between the private sector rents and house prices for all the five years were above 0.8, indicating significantly positive correlation between the private sector rents and house prices.

The regression results always have a significantly positive coefficient for an explanatory variable of LQ house price, explaining that for the local authorities across England a weekly average rent was positively explained by an LQ house price. The model equations, however, sequent changes of an increasing constant term and a decreasing coefficient for LQ house prices. The changes are illustrated in Figure 4.17 as five lines with lowering intercepts and fattening slope according to the observation year.

These annual changes give examples of estimated weekly average rents for two local authorities with LQ house prices of £50,000 and £100,000 for the same period. In 1996/97, those two local authorities were estimated to have weekly average rents of £90.14 and £163.69 respectively, and thus the rent gap was £73.55 or 81.6% for the former rent (see Table 4.6). In 2000/01, the target local authorities were estimated to have weekly average rents of £75.70 and £123.04, which means that the differential was £47.35 or 62.6%. This reflects the fact that the growth rate of weekly average rents was smaller than that of LQ house prices in the observation period, as see in Sections 2 and 3.

Table 4.5 Correlation coefficients and the test results for each year

	correlation coefficient	regression results				
		Constant		Coefficient for LQ house price		Adjusted R^2
1996/97 (N=351)	0.843	16.593	***	1.471	***	0.711
1997/98 (N=350)	0.867	19.140	***	1.344	***	0.751
1998/99 (N=351)	0.897	20.101	***	1.265	***	0.803
1999/00 (N=352)	0.914	23.914	***	1.119	***	0.836
2000/01 (N=352)	0.926	28.352	***	0.947	***	0.858

*** 1-% significance level
Note & Source: As Figure 4.1

Figure 4.17 Relationship between private sector rents and house prices for local authorities across England: 1996/97 to 2000/01

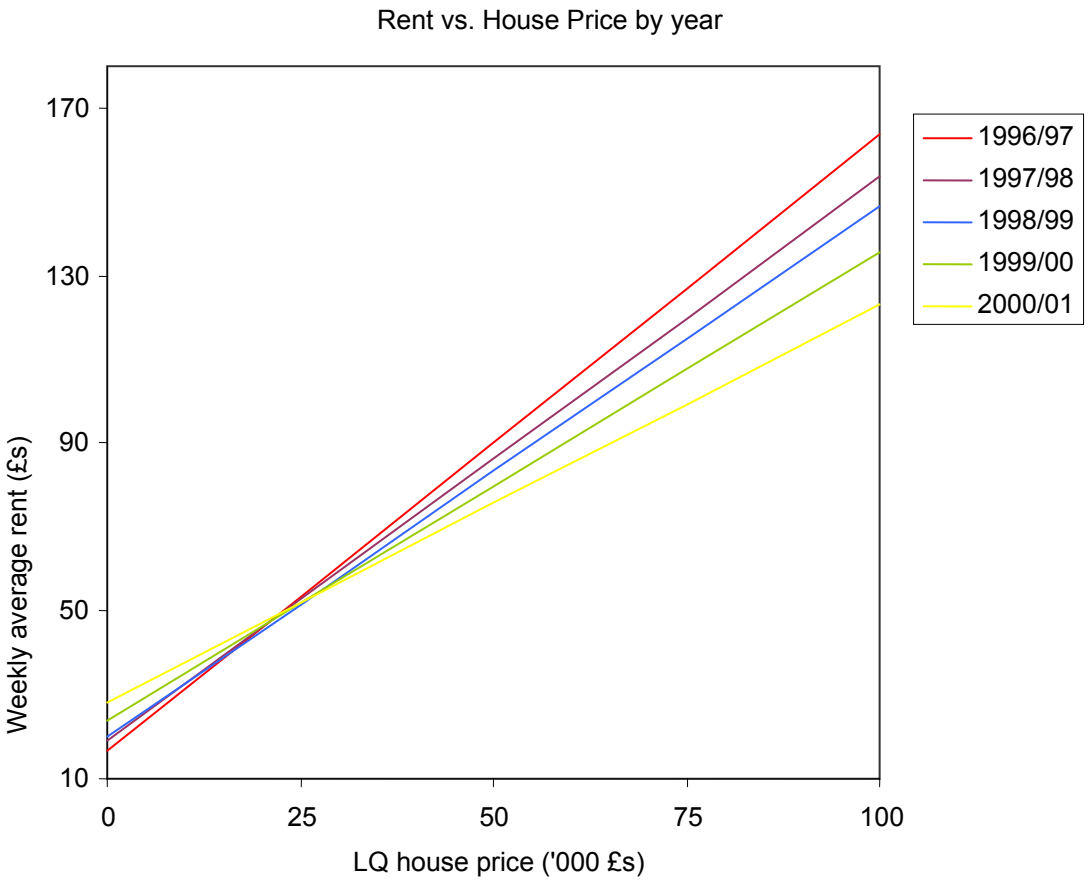


Table 4.6 Estimated weekly average rents

	for a local authority		differential	
	whose LQ house price = £50,000, estimated weekly average rent (a)	whose LQ house price = £100,000, estimated weekly average rent (b)	a-b	(a-b)/b
1996/97	90.14	163.69	73.55	81.6%
1997/98	86.34	153.54	67.20	77.8%
1998/99	83.35	146.60	63.25	75.9%
1999/00	79.86	135.81	55.95	70.1%
2000/01	75.70	123.05	47.35	62.6%

5. Private sector rates of return across England 1996/97 – 2000/01

5.1 Definition of rate of return

This section examines the characteristics of private sector rates of return. A rate of return in this paper is measured by a private sector weekly average rent of a local authority divided by an LQ house price of the corresponding local authority in terms of a percentage. The datasets of the numerators and denominators are the same as those used in Sections 2 and 3 respectively. Therefore the notes of the datasets described in the previous sections are also applied to this section.

5.2 The national trend of private sector rates of return

Table 5.1 presents private sector rates of return for England, that is, the averages of the local authorities' figures, over the period 1996/97 to 2000/01. In 2000/01, the national average of rate of return was 7.72%. Starting with 9.78% in 1996/97, the figure continuously declined through the observation period. This reflects that the growth rate of LQ house price outperformed that of weekly average rent, as seen in Sections 1 and 2,

Table 5.1 Rate of return (%, %-point for change from the previous year: lower)

1996/97	1997/98	1998/99	1999/00	2000/01
9.78	9.31	8.89	8.34	7.72
	-0.47	-0.42	-0.55	-0.62

Note: Rents of furnished properties. Average of local authorities except those with enough cases.
Source: Dataspring's calculation, based on the former Department of Transport, Local Government and the Regions (DTLR) database of Rent Officer statistics (for rents); and the ODPM/Land Registry (for house price).

5.3 The regional trends of private sector rates of return

Table 5.2 shows the rates of return by GOR in the observation period. In 2000/01, the highest rate of return was witnessed in North West (10.17%). This was followed by North East (9.73%) and Yorkshire and the Humber (8.58%). The lowest three regions were South West (6.45%), South East (6.71%) and East (6.85%). The rates of returns dropped continuously through the period in all the regions except North East whose figure increased to 9.73% in 2000/01 from 9.60% in 1999/00. This was owing to the fact that the LQ house price for the region nearly unchanged for the period (see in Table 3.2 in Section 3).

Compared with 1996/97, all nine regions showed declines in rate of return in 2000/01. The starkest fall was witnessed in London (4.13 points), while North East saw the most moderate fall (0.45 points). The drastic decline in London appeared to be owing to rapid increase in house prices (see Table 3.2).

Table 5.2 Rate of return by region (%, %-point for change)

	1996/97	1997/98	1998/99	1999/00	2000/01	change (00/01-96/97)
East	9.46	8.78	8.32	7.70	6.85	-2.61
East Midlands	9.21	8.86	8.66	8.42	7.90	-1.31
London	11.56	10.65	9.71	8.60	7.43	-4.13
North East	10.18	10.11	10.01	9.60	9.73	-0.45
North West	11.21	10.95	10.56	10.22	10.17	-1.04
South East	9.55	8.90	8.34	7.64	6.71	-2.84
South West	8.81	8.32	7.90	7.26	6.45	-2.36
West Midlands	9.10	8.77	8.56	8.21	7.73	-1.37
Yorkshire and The Humber	9.45	9.30	9.21	8.84	8.58	-0.87

Note & Source: As Table 5.1

5.4 The trends of private sector of return for the rural and urban areas

Table 5.3 presents the rates of return for the rural and urban local authorities respectively. In 2000/01, the rates were 6.76% for the rural area and 8.38% for the urban area. The rural figures were always below the urban equivalents during the period by margins of more than 1.6 but less than 1.9 percentage points. Through the observation period, both groups witnessed successive declines.

Compared with 1996/97, the figure decreased by 1.92 and 2.17 points in 2000/01 for the rural and urban areas respectively. This suggests that the growth rate of LQ house prices outperformed that of weekly average rents by a larger margin for the urban area than for the rural area during the period.

Table 5.3 Rate of return by rural-urban classification (%, %-point)

	1996/97	1997/98	1998/99	1999/00	2000/01	change (96/97-00/01)
Rural	8.68	8.27	7.91	7.42	6.76	-1.92
Urban	10.55	10.04	9.58	8.98	8.38	-2.17
R-U	-1.87	-1.77	-1.67	-1.56	-1.62	0.25

Note & Source: As Table 5.1

5.5 Private sector rates of return for local authorities with fast/slow growth in rents

Table 5.4 presents the rates of return for the two groups of local authorities with fast and slow growth in weekly average rent. The grouping methodology is the same as in the previous section. In 200/01, the rate of return was 6.77% for the local authorities with fast rent growth while the equivalent for those with slow rent growth was 9.15%. Through the observation period, both groups witnessed successive declines in the rate of return.

Compared with 1996/97, the figures decreased by 2.81 and 1.47 points in 2000/01 for the fast rent growth group and the slow rent growth group respectively. This suggests that despite having fast rent growth, the former group experience more rapid expansion in house price than rent.

Table 5.4 Rate of return: local authorities with fast/slow growth in rent

	1996/97	1997/98	1998/99	1999/00	2000/01	change (96/97-00/01)
Fast	9.58	8.96	8.36	7.60	6.77	-2.81
Slow	10.62	10.23	9.96	9.43	9.15	-1.47
F-S	-1.04	-1.27	-1.60	-1.83	-2.38	-1.34

5.6 Private sector rates of return for local authorities with fast/slow growth in house prices

Table 5.5 presents the rates of return for the two groups of local authorities with fast and slow growth in LQ house price. The grouping methodology is the same as in the previous section. In 2000/01, the rate of return was 6.72% for the local authorities with fast house price growth while the equivalent for those with slow house price growth was 10.09%. Through the observation period, the former group witnessed successive declines in the rate of return, while the figure for the slow house price growth group marginally rose in 2000/01 from the previous year.

Compared with 1996/97, the figures for the both group decreased but the fast group showed a much large margin of drop (3.35 points) while the margin for the slow group was fairly moderate 0.65 points.

Table 5.5 Rate of return: local authorities with fast/slow growth in house price

	1996/97	1997/98	1998/99	1999/00	2000/01	change (96/97-00/01)
Fast	10.07	9.28	8.59	7.76	6.72	-3.35
Slow	10.74	10.61	10.41	10.06	10.09	-0.65
F-S	-0.67	-1.33	-1.82	-2.3	-3.37	-2.70

6 Summary and Conclusion

Over the period of 1996/97 to 2000/01, the average of private sector rentsin England increased regardless of the properties' tenure type. Private sector rents in all GORs, except furnished properties' rents of North West, followed the national trend. At a lower geographical level, the majority of the English local authorities also saw consistent increases.

In the same observation period, average private sector house prices, measured by the average of Q house prices for the English local authorities, rose sharply. All GORs also witnessed increases in private sector house prices without exception. Private sector house prices rose in almost all local authorities, while some local authorities, particularly in London, showed particularly significant increases.

As the basic trends of the private sector rents and house prices were consistent with one another during the period, the correlation between the English private sector rents and house prices was significantly positive and the former could be expressed by the latter using a linear equation form. The correlation and the similar linear relationship can be observed across the regions except the North East. This casts some doubt on whether private sector rents can be satisfactory explained solely by house prices. However it also suggests some specific factors are operating in the North East (or possibly in lower demand areas which happen to be concentrated in the North East). The analysis therefore also examined the groups of local authorities with slower rent growth and with slower house price growth. Further research is necessary on whether there were other variables affecting the relationship between private sector rents and house prices.

Through the observation period, the English private sector rate of return, measured by rent divided by house price, continuously decreased. This has arisen because, despite the fact that both variables increased in the period, private house prices (the denominators) grew faster than rents (the numerators) in relative terms. The decreases in rates of return were observed in all the English regions. However the decline in the North East appeared fairly moderate. The group of local authorities whose house price increased slowly also witnessed a modest decrease. In order to investigate the causes of these relationships, other aspects, such as socio-economic factors, might be taken into consideration for further research.