

Affordability of Housing Association Rents: Rent-to-Income Ratio vs. Residual Income

A Dataspring Briefing Paper on behalf of the
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Affordability of Housing Association Rents: Rent-to-Income Ratio vs. Residual Income

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The main objective of this briefing paper is to examine the residual income measures employed in investigations of the impact of housing association (HA) rents on household's capacities to afford an adequate standard of living, and to compare these findings with those for the traditional rent-to-income measure which look only at housing affordability. In the first section, the details of the two measures are set out. This is followed by a brief overview of rent-to-income ratios for new tenants from 2002/03 to 2007/08 and an examination of residual income, using the income standards set for the Income Support scheme. However, as the CORE data employed only cover new tenants, the final section addresses 'after housing costs' for existing tenants in 2006/07 using the Family Resources Survey. Notwithstanding the use of multiple sources of data it should be recognised that calculations of residual income and rent-to-income ratio represent only a 'best estimate' of housing affordability because of the high incidence of non response to income questions. For instance, nearly one-third of new tenants failed to answer the income question in CORE.

1. Affordability measures

In general, there have been two main approaches to measuring housing affordability: a proportional measure and a residual measure. The focus of the proportional measure is on the rent of the dwelling and the income of the household. The rent-to-income ratio is the oldest and the most commonly used affordability measure. It is used in Australia, Canada and the United States, as well as in many European countries (Ditch, Lewis & Wilcox, 2001). In UK, there is no official definition of housing affordability. The National Housing Federation (the representative of 1,200 HAs in England) defines affordable rents as those below 25 percent of household income for new tenant households in work (NHF, 1999, p.17). The Department of Communities and Local Government in 2007 adopted the same definition for council tenants. The affordability ratio does not account for household size and type, for households with very different income levels and for the nature of the housing provided (Chaplin & Freeman, 1999). For example, Stone (1990) argues that many of the lowest income households cannot afford to pay even 25 percent of their very limited incomes for housing. Such weakness in the traditional ratio standard of affordability¹ has led to a strong argument to use an alternative measure of affordability, residual income.

Residual income is commonly used by policy makers to quantify government income assistance and is influential in determining the eligibility and levels of housing subsidies in Hong Kong, New Zealand and the United States (Ho & Chiu, 2002; Gabriel *et al.*, 2005; Robinson, Scobie & Hallinan, 2006). There are two generally acceptable ways of setting an affordable residual income standard:² the poverty line and a budget standard, with the former the more common. In the UK, the official measure of poverty is set at 60 percent or less of median household income (e.g., Brewer, Goodman & Leicester, 2006; Palmer & Kenway, 2007; Kenway, 2008; McKendrick *et al.*, 2008). Each year, the Department for Work and Pensions' (DWP) survey of Households Below Average Income calculates this for different family types, adjusted for household size and composition, before and

¹ The discussion on the deficiencies of a ratio indicator as a measure of affordability can be found elsewhere, e.g., in Hancock (1993); Bramley (1994); Hulchanski (1995); Thalmann (2003); and Bramley (2006).

² Another alternative to rent-to-income measure is the housing benefit dependency measure. It identifies the level of household incomes where households are just at the point at which they are not eligible for housing benefit (Marshall *et al.*, 2000). This measure, however, is more commonly used in economic analyses of work incentives, rather than housing affordability analyses (CLG, 2009).

after housing costs. In the case of the budget standard method, it assumes that housing programmes should be designed to reduce housing costs to an amount that leaves sufficient income left to pay for the other necessities of life (Whitehead, 1991; Burke, 2003). In the UK, budget standards have recently become a popular method for calculating minimum incomes in assessments of poverty (Bradshaw & Finch, 2003; Deeming, 2005, 2009; Evans & Scarborough, 2006; Bradshaw *et al.*, 2008). So far, studies of housing affordability using a budget standard are very limited in scope. Hancock (1993), for example, used the Income-Support-scale rates to calculate acceptable residual income standards for social rental housing in Glasgow. Stone (2006), on the other hand, drawing on his experience in the United States, formulated a residual income housing affordability standard for the UK based on his 'shelter poverty' scales.

For practical reasons, much of the empirical research on affordability has used a single measure. However, as a matter both of principle and of practice, housing affordability should be measured by the affordability ratio and the residual income standard, as the latter is sensitive to differences in household composition and income. This study will employ the two measures to identify the different ways that HA rents impact on different household types and different groups of households living in different property types. Understanding the differential impacts of HA rents on individual households across regions and property types helps make it possible to assess different ways forward, both in terms of rent policy and implementation.

2. Rental affordability for new tenants in 2002/03–2007/08 using CORE: Findings from rent-to-income ratios

2.1 Rent-to-income ratios by region

Table 1 shows average rent-to-income ratios by region for the years 2002/03, 2004/05 and 2007/08. Average HA rents for new tenants in London were the least affordable for these three years, both with and without Housing Benefit (HB). The South East was consistently the second least affordable region although its affordability ratios, both before and after HB, fell by one percentage point between 2002/03 and 2007/08. The North East and Yorkshire and the Humber were the most affordable regions. Excluding London, the differences in affordability between the other regions are small. All regions, with the exception of London, have experienced improved affordability of HA rents as rent-to-income ratios have declined. London was the only region where affordability of HA rents has deteriorated, its affordability ratios increased from 0.44 in 2002/03 to 0.46 in 2007/08 before HB.

Table 1 Rent-to-income ratios for new tenants before and after HB by region, 2002/03, 2004/05 and 2007/08

	2002/03		2004/05		2007/08	
	Before HB	After HB	Before HB	After HB	Before HB	After HB
London	0.44	0.35	0.42	0.33	0.46	0.35
South East	0.37	0.31	0.34	0.29	0.36	0.30
South West	0.36	0.30	0.32	0.28	0.32	0.28
Eastern	0.35	0.30	0.32	0.28	0.33	0.28
East Midlands	0.36	0.31	0.33	0.28	0.33	0.28
West Midlands	0.36	0.31	0.33	0.28	0.34	0.28
North West	0.36	0.31	0.33	0.28	0.33	0.28
North East	0.35	0.30	0.31	0.27	0.31	0.27
Yorkshire and the Humber	0.35	0.30	0.32	0.28	0.31	0.27
ENGLAND	0.37	0.31	0.34	0.29	0.35	0.29

Sources: 2002/03 from Banks and Whitehead (2008) Tables 7 and 8; 2004/05 and 2007/08 from calculation based on 2004/05 and 2007/08 CORE, excluded new tenants who did not report incomes in the CORE.

Table 2 shows how London's affordability ratios have been rising much faster than those in other regions. Between 2002/03 and 2007/08, average HA weekly rents for new tenancies in London rose the fastest in England. Average rent was 20 percent above the national average in 2002/03, increasing to 26 percent in 2007/08. The pace of increases in average incomes of new tenants in London fell behind the rate of rent increases. Average income for new tenants in 2002/03 was two percent *above* the national average, but in 2007/08, it was one percent *below* the national average. Thus, it is the combination of the very large rate of rent increases and the slow growth of household incomes that contributed to the increased affordability ratios in London. By contrast, average rents and average incomes for Yorkshire and the Humber rose least. Yorkshire's average rent was seven percent below national average in 2002/03. By 2007/08, it was 13 percent below. Likewise, its average incomes fell from being four percent below national average in 2002/03 to nine percent in 2007/08. The much slower growth in rents than incomes made Yorkshire and the Humber the most affordable region in England.

Table 2 Indices of weekly net rents and weekly incomes for new tenants by region (England = 1.00), 2002/03, 2004/05 and 2007/08

	Rent			Income			2002/03–2007/08	
	2002/03	2004/05	2007/08	2002/03	2004/05	2007/08	Rent	Income
London	1.20	1.23	1.26	1.02	1.00	0.99	5%	-3%
South East	1.14	1.13	1.15	1.15	1.13	1.16	0%	1%
South West	1.02	0.99	1.00	1.05	1.05	1.06	-2%	1%
Eastern	1.02	1.03	1.03	1.09	1.09	1.08	1%	2%
East Midlands	0.93	0.93	0.94	0.96	0.98	0.98	1%	-1%
West Midlands	0.94	0.93	0.93	0.95	0.95	0.96	-1%	1%
Yorkshire and the Humber	0.93	0.88	0.87	0.96	0.93	0.91	-7%	-5%
North East	0.85	0.84	0.85	0.90	0.93	0.94	1%	5%
North West	0.90	0.89	0.89	0.92	0.93	0.93	-2%	1%

Note: Excluded new tenants who did not report incomes in CORE.

Source: Calculation based on 2002/03, 2004/05 and 2007/08 CORE.

2.2 Rent-to-income ratios by household type and bedsize

At the household level, Table 3 shows average rent-to-income ratios for each household type by bedsize, focusing on new tenants who reported their total incomes in CORE. Rent-to-income ratios, both before and after HB, were higher for households with only one adult (single elder, single adult and single parent) than they were for those with two or more adults (two elders, two adults and two-parent families). This may be because of the insensitivity of affordability ratios to household size as smaller households tend to have lower household incomes than larger households.

Table 3 Rent-to-income ratios for new tenants before and after HB by household type and bedsize, 2002/03, 2004/05 and 2007/08

	2002/03		2004/05		2007/08	
	Before HB	After HB	Before HB	After HB	Before HB	After HB
1 elder	0.39	0.34	0.38	0.34	0.38	0.34
<i>Bedsit</i>	<i>0.33</i>	<i>0.29</i>	<i>0.33</i>	<i>0.30</i>	<i>0.35</i>	<i>0.31</i>
<i>1 bedroom</i>	<i>0.39</i>	<i>0.34</i>	<i>0.38</i>	<i>0.34</i>	<i>0.38</i>	<i>0.34</i>
<i>2 bedrooms</i>	<i>0.42</i>	<i>0.38</i>	<i>0.41</i>	<i>0.37</i>	<i>0.41</i>	<i>0.37</i>
<hr/>						
1 adult	0.41	0.34	0.42	0.34	0.43	0.35
<i>Bedsit</i>	<i>0.38</i>	<i>0.31</i>	<i>0.39</i>	<i>0.32</i>	<i>0.42</i>	<i>0.33</i>
<i>1 bedroom</i>	<i>0.41</i>	<i>0.33</i>	<i>0.41</i>	<i>0.34</i>	<i>0.43</i>	<i>0.35</i>
<i>2 bedrooms</i>	<i>0.43</i>	<i>0.35</i>	<i>0.43</i>	<i>0.35</i>	<i>0.43</i>	<i>0.35</i>
<hr/>						
2 elders	0.24	0.21	0.23	0.21	0.23	0.21
<i>Bedsit</i>	<i>0.00</i>	<i>0.00</i>	<i>0.17</i>	<i>0.16</i>	<i>0.12</i>	<i>0.12</i>
<i>1 bedroom</i>	<i>0.24</i>	<i>0.21</i>	<i>0.23</i>	<i>0.20</i>	<i>0.22</i>	<i>0.20</i>
<i>2 bedrooms</i>	<i>0.24</i>	<i>0.22</i>	<i>0.23</i>	<i>0.21</i>	<i>0.24</i>	<i>0.21</i>
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2 adults	0.23	0.21	0.22	0.21	0.22	0.21
<i>Bedsit</i>	<i>0.29</i>	<i>0.26</i>	<i>0.18</i>	<i>0.17</i>	<i>0.31</i>	<i>0.27</i>
<i>1 bedroom</i>	<i>0.21</i>	<i>0.20</i>	<i>0.21</i>	<i>0.20</i>	<i>0.21</i>	<i>0.20</i>
<i>2 bedrooms</i>	<i>0.24</i>	<i>0.22</i>	<i>0.22</i>	<i>0.21</i>	<i>0.23</i>	<i>0.22</i>
<hr/>						
1 adult & children	0.41	0.31	0.40	0.30	0.40	0.30
<i>2 bedrooms</i>	<i>0.44</i>	<i>0.32</i>	<i>0.43</i>	<i>0.32</i>	<i>0.43</i>	<i>0.32</i>
<i>3 bedrooms</i>	<i>0.39</i>	<i>0.29</i>	<i>0.37</i>	<i>0.28</i>	<i>0.37</i>	<i>0.28</i>
<i>4+ bedrooms</i>	<i>0.36</i>	<i>0.27</i>	<i>0.33</i>	<i>0.26</i>	<i>0.31</i>	<i>0.25</i>
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2+ adults & children	0.25	0.23	0.24	0.22	0.24	0.22
<i>2 bedrooms</i>	<i>0.25</i>	<i>0.23</i>	<i>0.24</i>	<i>0.22</i>	<i>0.24</i>	<i>0.22</i>
<i>3 bedrooms</i>	<i>0.24</i>	<i>0.22</i>	<i>0.23</i>	<i>0.21</i>	<i>0.23</i>	<i>0.21</i>
<i>4+ bedrooms</i>	<i>0.26</i>	<i>0.22</i>	<i>0.26</i>	<i>0.22</i>	<i>0.25</i>	<i>0.22</i>

Note: Excluded new tenants who did not report incomes in CORE.

Source: Calculation based on 2002/03, 2004/05 and 2007/08 CORE.

Cross-tabulation between household type and bedsize (shown in italics in Table 3), however, reveals the possible effect of property size on the magnitude of affordability ratios. It is clear that households pay higher rents for living in larger size properties. Thus, it is unsurprisingly to find that one-person (single elder and single adult) and two-elder households living in two-bedroom properties, and two-

parent households living in properties with four or more bedrooms had affordability ratios that were larger than their respective averages. However, for two-adult and single-parent households, there was no positive relationship between rents and affordability ratios. Two-adult households living in bedsits and single-parent households living in two-bedroom properties had rent-to-income ratios that were larger than their respective averages. Thus, for these two household groups, there is a possibility that the impact of lower incomes may supersede the impact of property size on affordability ratios.

Table 4 explains some of the possible effects of changes in rents and incomes on affordability ratios between bedsizes. While rent increases for smaller properties (i.e., bedsits and properties with one or two bedrooms) have remained quite consistent between 2002/03 and 2007/08, rent increases for larger properties (i.e., those with three or more bedrooms) have slowed down. For instance, the average weekly rent for three-bedroom properties was 16 percent above the average for all bedsizes in 2002/03, reducing to 12 percent in 2007/08. The rate of increase in average rents for properties with four or more bedrooms was even smaller. In 2002/03, these properties were 35 percent above the average for all bedsizes but by 2007/08, this figure had fallen to 30 percent. On the other hand, average weekly incomes for households living in larger size properties increased steadily over the period, particularly for those living in properties with four or more bedrooms. Affordability ratios thus fell. By contrast, average rents for bedsits were the largest across all bedsizes with average rents 23 percent below the average for all bedsizes in 2002/03, falling to 20 percent below by 2007/08. As average incomes for households living in bedsits fell from being 24 percent below the average for all households in 2002/03 to 32 percent in 2007/08, the much slower growth in incomes than rents led to the increase of affordability ratios during this period (Table 3).

Table 4 Indices of weekly net rents and weekly incomes for new tenants by bedsize (All bedsizes = 1.00), 2002/03, 2004/05 and 2007/08

	Rent			Income			2002/03–2007/08	
	2002/03	2004/05	2007/08	2002/03	2004/05	2007/08	Rent	Income
Bedsit	0.77	0.79	0.80	0.76	0.74	0.68	5%	-10%
1 bedroom	0.89	0.89	0.89	0.83	0.81	0.79	0%	-4%
2 bedrooms	1.03	1.04	1.03	1.02	1.04	1.03	0%	1%
3 bedrooms	1.16	1.14	1.12	1.28	1.29	1.29	-3%	1%
4+ bedrooms	1.35	1.34	1.30	1.55	1.55	1.58	-4%	1%

Note: Excluded new tenants who did not report incomes in CORE.

Source: Calculation based on 2002/03, 2004/05 and 2007/08 CORE.

The rent-to-income ratios analysis suggests that, in general, HA rents would not be classified as affordable for most new HA tenants, particularly those in London, and particularly for one adult household. In the next section, the residual income measure is used to address in more detail the rental affordability of new tenants in the HA sector.

3. Rental affordability for new tenants in 2002/03–2007/08 using CORE: Findings from residual incomes

Residual income is the net weekly income left after the net rent, i.e.

Residual income = total income (include take home pay, child benefit, occupational pension, tax credits and other income, exclude HB, council tax credit, interest from savings and Income Support) – net rent

The higher the residual income the more affordable the HA accommodation is, as the tenant has more disposable income left over to purchase other goods. To calculate acceptable residual income standards for social tenants, Hancock (1993) and CLG (2009) use the Income-Support-scale rates. This is because the purpose of the means-tested HB system is to ensure that households at or below the official Income Support standard can meet their housing costs. Households with incomes above that level have their HB withdrawn at a fairly steep rate. Thus, Income Support levels can be used to define acceptable residual income after paying rent. Based on details of net weekly income and household composition, CORE estimated the Income Support applicable amounts for each new HA tenant who provided information on his/her income. Following Hancock's (1993) approach, the acceptable standard used to define the affordability of HA rents in the residual income analysis is that new tenants should have 120 percent of Income Support allowances.

3.1 Residual incomes by region

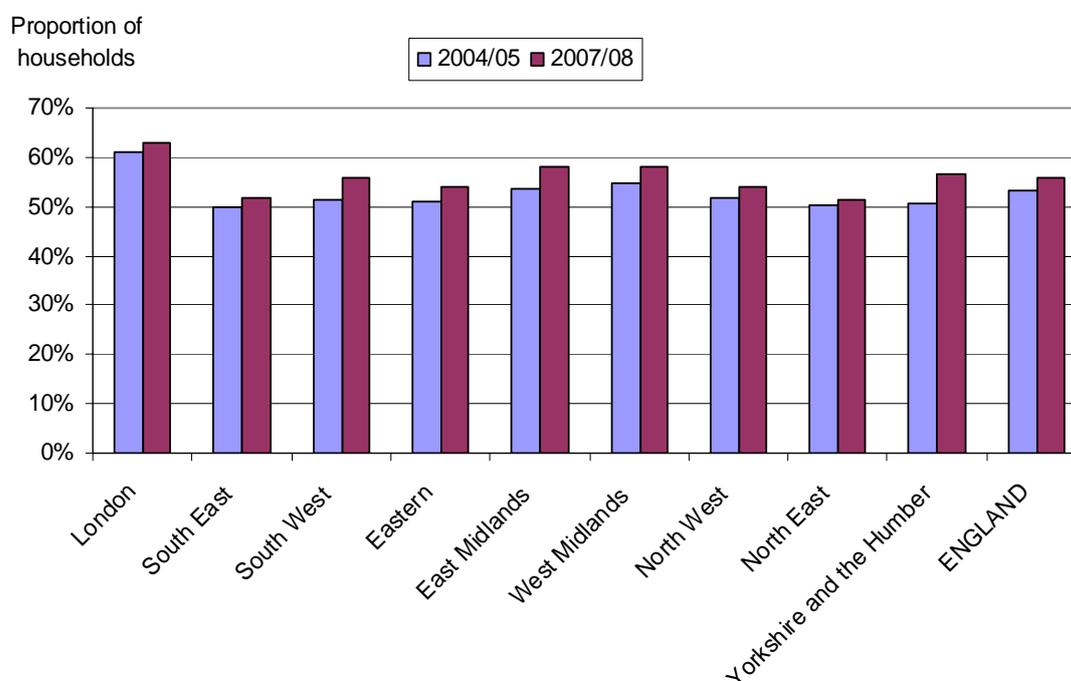
Table 5 shows the regional pattern of residual and total incomes for new tenant households. On average, new tenants in England enjoyed an improvement in affordability in the period 2002/03–2007/08; the growth of residual incomes (18%) was larger than that of total household incomes (13%). With the exception of London, new tenants in southern regions had relatively higher levels of residual incomes than those in northern regions. New tenants in London had the lowest residual incomes, and their average residual incomes increased the least, seven percent, between 2002/03 and 2007/08. This is mainly because London's new tenants had the second smallest increase in average incomes, after Yorkshire and the Humber (last column in Table 5; see also Table 2). By contrast, new tenants in the North East had the largest increases in residual income, 26 percent, due to the slow growth of average rents and higher growth of average incomes.

Table 5 Average residual and total incomes of new tenants by region (per week), 2002/03, 2004/05 and 2007/08

	2002/03		2004/05		2007/08		2002/03–2007/08	
	Residual income	Total income	Residual income	Total income	Residual income	Total income	Residual income	Total income
London	£92.84	£167.61	£92.84	£178.53	£98.88	£184.32	7%	10%
South East	£117.85	£188.84	£117.85	£202.75	£139.59	£215.29	18%	14%
South West	£108.63	£172.29	£108.63	£187.46	£131.23	£197.18	21%	14%
Eastern	£115.87	£178.90	£115.87	£195.36	£132.29	£200.25	14%	12%
East Midlands	£98.88	£157.22	£98.88	£174.97	£119.94	£182.12	21%	16%
West Midlands	£97.28	£155.68	£97.28	£170.42	£116.77	£178.43	20%	15%
North West	£95.13	£151.29	£95.13	£167.45	£113.83	£172.60	20%	14%
North East	£94.11	£146.78	£94.11	£165.91	£118.47	£174.12	26%	19%
Yorkshire and the Humber	£98.61	£156.87	£98.61	£166.58	£111.46	£168.52	13%	7%
ENGLAND	£101.74	£163.96	£101.74	£179.29	£119.69	£185.94	18%	13%

Note: Excluded new tenants who did not report incomes in CORE.

Source: Calculation based on 2002/03, 2004/05 and 2007/08 CORE.

**Figure 1 Proportion of new tenants having residual incomes below the 120 percent Income Support standards by region, 2004/05 and 2007/08**

Note: Excluded new tenants who did not report incomes in CORE.

Source: Calculation based on 2004/05 and 2007/08 CORE.

Figure 1 shows proportions of new tenants with residual income below the 120 percent Income Support standard in 2004/05 and 2007/08.³ In 2004/05, about 53 percent of new tenants in England had residual income below this standard. This proportion increased slightly to 56 percent in 2007/08. All regions experienced an increase in proportions of new tenants falling below the standard. The largest increase was found in Yorkshire and the Humber, 51 percent of new tenants in 2004/05, rising to 57 percent in 2007/08. London was the region with the largest

³ Amounts of residual income after the 120 percent Income Support levels were not available in the 2002/03 CORE.

proportion of new tenants below the standard (61% in 2004/05 and 63% in 2007/08), confirming the fall in the average incomes of new tenants over that period. The North East, on the other hand, had the smallest proportion of new tenants who were below the standard (50% in 2004/05 and 51% in 2007/08).

These figures confirm that on average, new tenants in London were most likely to have affordability problems, not only because they paid higher rents, but also because their residual income was lower.

3.2 Residual incomes by household type and bedsize

Table 6 shows the amounts of average residual and total incomes by household type and bedsize. Within single person households, non-elderly adults (those below 60 years old) had the lowest average incomes, £124.16 per week in 2002/03 and £133.57 in 2007/08, and also the smallest increase during this period, eight percent. As a result, they had the lowest level and the smallest increase in residual incomes amongst all new tenants. Their average residual income was down slightly from £73.33 in 2004/05 to £72.26 in 2007/08. Particularly, average rents of bedsits were found to have increased faster than average incomes leading to a reduction (-4%) in residual incomes between 2002/03 and 2007/08 for those non-elderly single adults who occupied them. By contrast, the average income for elderly single adults, which was slightly below that of non-elderly single adults in 2002/03, rose by 13 percent, increasing to £147.39 in 2007/08. Their average residual income was the lowest in 2002/03, and increased by 30 percent to £84.76 in 2007/08.

For couples without children, two elders had a lower level of average total income and therefore a lower level of average residual income than their younger counterparts (Table 6). However, the residual income gaps between these two types of couples narrowed over time. This is because two elders experienced a larger increase in their average incomes between 2002/03 and 2007/08 than their younger counterparts. As a result, in 2002/03, the average residual income for two non-elderly adults was 10 percent higher than that for two elders, but in 2007/08, it was only three percent higher. These increases may be the result of the introduction of Pension Credit in April 2003 which aimed to tackle pensioner poverty.

Table 6 Average residual and total incomes (per week) of new tenants by household type and bedsize, 2002/03, 2004/05 and 2007/08

	2002/03		2004/05		2007/08		2002/03–2007/08	
	Residual income	Total Income						
1 elder	£65.40	£130.53	£80.29	£142.45	£84.76	£147.39	30%	13%
Bedsit	£66.76	£129.65	£80.65	£140.77	£80.43	£141.34	20%	9%
1 bedroom	£64.39	£130.69	£80.34	£142.85	£85.14	£147.54	32%	13%
2 bedrooms	£70.16	£130.73	£79.63	£141.98	£85.17	£148.90	21%	14%
1 adult	£69.05	£124.16	£73.33	£132.35	£72.26	£133.57	5%	8%
Bedsit	£68.27	£119.23	£69.11	£126.03	£65.71	£122.87	-4%	3%
1 bedroom	£69.38	£124.61	£73.69	£132.51	£71.83	£133.07	4%	7%
2 bedrooms	£68.75	£124.58	£74.34	£134.56	£76.02	£138.70	11%	11%
2 elders	£170.36	£232.48	£196.20	£258.64	£203.84	£268.09	20%	15%
Bedsit	£0.00	£0.00	£197.48	£255.00	£319.87	£385.00	n.a.	n.a.
1 bedroom	£161.21	£223.91	£187.03	£247.18	£194.76	£255.33	21%	14%
2 bedrooms	£179.76	£241.40	£203.74	£268.05	£207.29	£274.13	15%	14%
2 adults	£187.73	£245.71	£209.98	£271.84	£210.69	£274.19	12%	12%
Bedsit	£120.98	£174.56	£238.38	£296.58	£120.33	£181.67	-1%	4%
1 bedroom	£195.38	£252.09	£207.02	£265.89	£213.89	£274.91	9%	9%
2 bedrooms	£182.09	£240.56	£212.18	£275.82	£209.42	£274.65	15%	14%
1 adult & children	£87.37	£155.14	£99.25	£169.52	£103.42	£175.14	18%	13%
2 bedrooms	£74.41	£140.25	£84.33	£153.48	£88.67	£159.60	19%	14%
3 bedrooms	£101.28	£170.81	£116.80	£187.71	£122.59	£194.78	21%	14%
4+ bedrooms	£134.43	£212.37	£163.93	£247.05	£175.33	£257.97	30%	21%
2+ adults & children	£199.53	£270.42	£224.91	£296.50	£230.10	£303.36	15%	12%
2 bedrooms	£183.79	£251.47	£208.20	£278.06	£212.15	£283.92	15%	13%
3 bedrooms	£208.68	£280.45	£237.78	£309.31	£244.07	£317.40	17%	13%
4+ bedrooms	£225.85	£307.85	£240.79	£322.83	£257.21	£340.02	14%	10%

Note: Excluded new tenants who did not report incomes in CORE.

Source: Calculation based on 2002/03, 2004/05 and 2007/08 CORE.

For new tenant households with children, the introduction of Child Tax Credit to low-income families with dependent children led to a similar large increase of average residual incomes. In particular, lone parents were treated more generously in the tax credit scheme. Table 6 shows that between 2002/03 and 2007/08, total incomes for lone parents increased by 13 percent while their residual incomes increased by 18 percent. The equivalent figures for two-parent families were 12 percent and 15 percent, respectively.

Finally, Table 6 clearly illustrates the trade-offs between housing expenditures and expenditures for non-housing goods made by poorer households. Households with below average incomes tend to occupy properties with a smaller number of bedrooms than their household size. This is particularly apparent in single adults and two adults without children. Single adults (both non-elderly and elderly) and two non-elderly adults living in bedsits had below average total incomes and consequently below average residual incomes. Similarly, families with children

living in two-bedroom properties had the lowest level of average total incomes and residual incomes within their respective household groups.

Table 7 Proportion of new tenants having residual incomes below the 120 percent Income Support standards by household type and bedsize, 2004/05 and 2007/08

	2004/05		2007/08	
	No. of household below the residual income standard	% of household within each household type for each bedsize	No. of household below the residual income standard	% of household within each household type for each bedsize
1 elder	1,349	11%	1,024	15%
Bedsit	193	11%	48	14%
1 bedroom	1,003	11%	777	15%
2 bedrooms	148	10%	191	13%
1 adult	17,071	50%	16,784	51%
Bedsit	1,486	53%	1,268	58%
1 bedroom	11,876	49%	12,025	51%
2 bedrooms	3,370	48%	3,213	48%
2 elders	593	61%	508	60%
1 bedroom	279	63%	217	63%
2 bedrooms	297	59%	285	59%
2 adults	1,408	25%	1,495	27%
Bedsit	5	26%	7	47%
1 bedroom	576	27%	605	28%
2 bedrooms	730	25%	786	26%
1 adult & children	21,089	88%	20,295	87%
2 bedrooms	11,910	86%	11,860	84%
3 bedrooms	8,259	90%	7,620	90%
4+ bedrooms	723	94%	630	92%
2+ adults & children	7,132	53%	7,071	52%
2 bedrooms	2,829	48%	2,881	47%
3 bedrooms	3,525	55%	3,483	55%
4+ bedrooms	744	72%	674	71%

Note: Excluded new tenants who did not report incomes in CORE. There was only one two-elderly couple living in bedsit in both 2004/05 and 2007/08.

Source: Calculation based on 2004/05 and 2007/08 CORE.

Next, we look at the numbers and proportions of new tenants who had residual incomes below the 120 percent Income Support Standards (Table 7). Lone parents experienced the worst affordability problems. In 2004/05 and 2007/08, over 22,000 lone parents and around 88 percent of total lone parents had residual incomes below the standards. In particular, lone parents living in properties with four or more bedrooms (who were most likely to have more than two dependent children) were most likely to have residual incomes below the standards (94% in 2004/05 and 92% in 2007/08). For two-parent families, over half had residual incomes below the standards, but over 70 percent of those living in properties with four or more bedrooms had residual incomes below the standards. Thus, even though families with three or more dependent children had relatively higher average total and residual incomes than families with one or two children (Table 6), they still tended to have residual incomes that were below the standards.

Amongst couples who did not have children, the household group facing the greatest affordability problem was two elders. Over 60 percent were below the standards in both 2004/05 and 2007/08 (Table 7). Conversely, for single person households, non-elderly adults were more likely to have residual incomes below the standards. This was particularly so for non-elderly single adults living in bedsits, who had the lowest level of average total and residual incomes (Table 6). Sixty three percent had residual incomes below the standards. By contrast, only 11 percent of single elderly adults had residual incomes below the standards in 2004/05, although this figure rose slightly to 15 percent in 2007/08.

Thus, residual income analyses between household types and bedsize produce a detailed picture of affordability:

- Families with children were most likely to have affordability problems. Lone parents, having the largest rent-to-income ratios, not only had the smallest amount of residual income amongst families with children between 2002/03 and 2007/08, but also had the largest proportion with residual incomes below the 120 Income Support standards;
- Rent-to-income ratios for two elders and two non-elder adults were below the 25 percent benchmark, however, the residual income analyses showed clearly that two elders were more likely to have residual incomes below the standards, indicating their very low level of total incomes; and
- Rent-to-income ratios for one-person households were all above 0.30, but residual income analyses revealed that it was non-elderly adults, rather than elderly adults, who were more likely to have the problem. Having the smallest increase in their incomes amongst all new tenants in the period of 2002/03 to 2007/08, single non-elderly adults had the largest rent-to-income ratios and were more likely to have residual incomes below the standards.

4. Rental affordability for existing tenants in 2006/07 using Family Resources Survey

4.1 Rent-to-income ratios between existing and new tenants

Although CORE provides a wealth of data on household income and rent, it covers new tenants only. New tenants account for around 10 percent of all HA tenants in any given year. To get a better picture of rental affordability in the sector, the Existing Tenants Survey provides the best available data for England; however, the income data are grouped in categories which do not allow for detailed analysis. The Family Resources Survey (FRS) may have more utility here. The FRS collects information on the incomes and circumstances of private households in the UK. It has been running since October 1992. Approximately 26,000 households are interviewed each year. FRS covers household characteristics, assets and savings, occupation and employment, tenure and housing costs, and income and state support receipts. The number of HA tenant counts in England varies between 1,000 and 1,900 each year. This study uses income data, net rents and total housing costs provided by HA respondents in the 2006–07 FRS, the latest dataset available at the time of this analysis.

Table 8 Household types in the Census, FRS and CORE compared

	Existing tenants		New tenants
	2001 Census	2006–07 FRS	2006–07 CORE
1 elder	24.1%	24.9%	7.6%
2 elders	n.a.*	7.2%	3.4%
1 adult	20.2%	18.4%	36.5%
2 adults	12.9%*	10.0%	6.6%
1 adult & 1+ children	19.7%	18.4%	24.0%
2+ adults & 1+ children	17.3%	17.9%	14.9%
Other	5.7%	3.3%	7.1%
		N = 1,607	N = 89,231

Note: The two-adult households in the Census include two young as well as old adults.

Source: Calculations based on 2006/07 FRS and 2007/07 CORE.

Table 8 shows the descriptive statistics for HA tenant profiles drawn from the 2001 Census, the 2006–07 FRS and the 2006–07 CORE. It is clear that the household type patterns in new tenancies are significantly different from those of existing tenancies. Single non-elderly adults were the dominant household group in new tenancies recorded in CORE, with lone parent families the second largest group. On the other hand, while both the Census and the FRS showed the dominance of single elderly persons in existing tenancies, CORE recorded a very small proportion of them among new tenants. Similarly, the share of two-parent households in existing tenancies was slightly larger than that for new tenancies.

Existing and new tenants also have different rent-to-income ratios because of differences in average income levels and HA rents. Existing tenants tend to have a higher average income because FRS defines income as gross income. The gross income is total household income before tax, including earnings, investments, retirement pensions, income support, tax credits, benefits (HB, council tax benefit, disability benefits and other benefits), and other income, such as interest from savings. By contrast, CORE uses net income (income excluding tax credits, HB, council tax benefit and interest from savings) for new tenants.⁴ Because of the different definitions of income, direct comparison between the two groups is impossible. Nonetheless, there was some consistency between the two in relation to regional distributions of rent-to-income ratios (Table 9a). Affordability ratios for existing tenants were all below 0.25 with London and the South East having the largest ratios, 0.23. But for new tenants (excluding those who did not report income in the CORE), ratios were all above 0.30, with London having the largest ratio, 0.47. This is because existing tenants in London had the highest level of gross income, some 15 percent higher than the national average and 38 percent higher than the average income of the lowest region, Yorkshire and the Humber. But for new tenants, the average net income in London was slightly below the national average and only five percent higher than that of Yorkshire. Income variation in London between existing and new tenant groups once again confirms that HAs in London are increasingly accommodating families with very low incomes into their new or re-let units, compared to other regions.

⁴ The average level of net income for HA tenants as reported in the Existing Tenants Survey 2008 was £292 per week (Tenant Services Authority, 2009, p.16).

Table 9 Rent-to-income ratios for existing and new tenants, 2006–07*a) By region*

	Existing tenants (2006–07 FRS)			New tenants (2006–07 CORE)		
	Gross income	Net rent	Rent-to-income ratio	Net income	Net rent	Rent-to-income ratio
London	£384.08	£89.77	0.23	£189.15	£89.55	0.47
South East	£369.13	£83.14	0.23	£214.91	£78.86	0.37
South West	£323.31	£68.69	0.21	£204.35	£68.76	0.34
Eastern	£339.43	£71.70	0.21	£207.40	£70.81	0.34
East Midlands	£303.81	£61.57	0.20	£189.00	£66.00	0.35
West Midlands	£312.19	£69.21	0.22	£181.41	£64.00	0.35
North West	£308.76	£64.07	0.21	£180.31	£61.62	0.34
North East	£312.55	£59.95	0.19	£182.53	£58.93	0.32
Yorkshire & Humberside	£278.29	£62.36	0.22	£180.21	£59.30	0.33
ENGLAND	£333.11	£72.56	0.22	£191.73	£69.13	0.36

b) By household type

	Existing tenants (2006–07 FRS)			New tenants (2006–07 CORE)		
	Gross income	Net rent	Rent-to-income ratio	Net income	Net rent	Rent-to-income ratio
1 elder	£235.60	£66.14	0.28	£150.35	£58.76	0.39
1 adult	£235.18	£68.82	0.29	£134.29	£58.96	0.44
2 elders	£346.23	£65.07	0.19	£242.85	£62.85	0.26
2 adults	£411.76	£70.16	0.17	£275.04	£62.95	0.23
1 adult & 1+ children	£292.48	£78.28	0.27	£181.65	£71.82	0.40
2+ adults & 1+ children	£514.26	£83.87	0.16	£314.68	£74.28	0.24

Note: Gross income for existing tenants was the weekly income including earnings, investments, retirement pensions, income support, tax credits, benefits (HB, council tax benefit, disability benefits and other benefits), and other income, such as interest from savings for existing tenants. Net income for new tenants was the weekly income excluding tax credits, HB, council tax benefit and interest from savings.

Source: Calculations based on 2006/07 FRS and 2006/07 CORE.

In terms of income distribution by household type, both groups of tenants shared the same pattern, with single non-elderly adults having the lowest average income and the largest rent-to-income ratios, and couples with children having the highest level of income and the lowest rent-to-income ratios (Table 9b). Such patterns reflect the probable effect of household size on the level of income. Because of the difference of gross and net incomes, 60 percent of median income is used as a residual income measure for existing tenants, rather than the 120 percent used for Income Support.

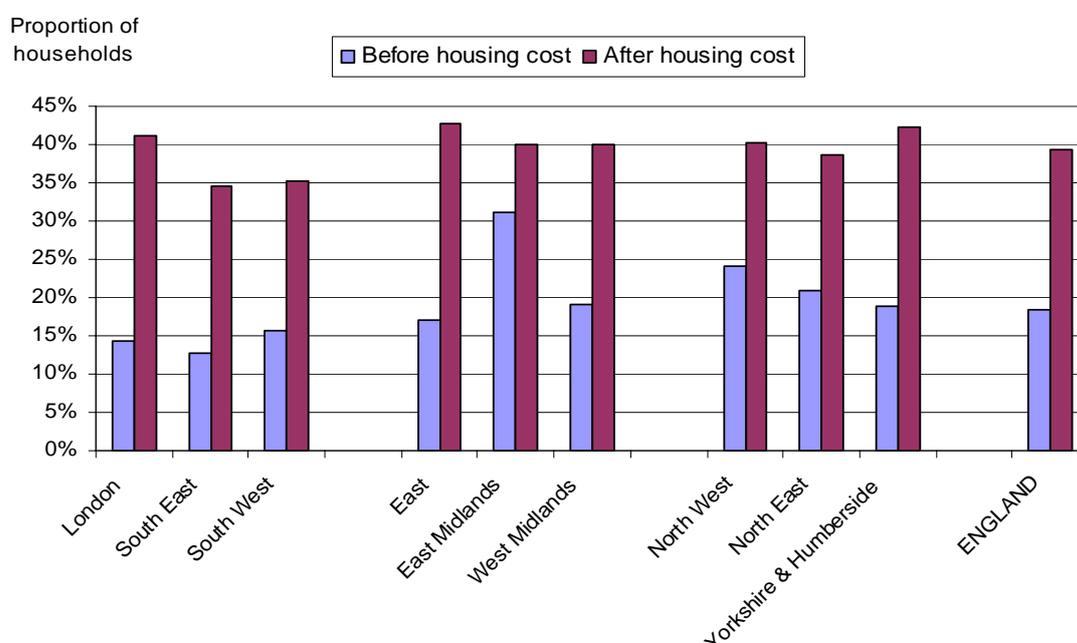
4.2 Residual incomes of existing tenants by region

Figure 2 shows the proportion of existing tenants having their equivalised income below 60 percent median (equivalised) income for each region in 2006–07 both Before Housing Costs and After Housing Costs.⁵ Housing costs, here, included

⁵ To correct the differential effect of household size on rental affordability, an equivalence scale is used to adjust the income to take account of differences in the size and type of household. The equivalence scale used in research on income poverty in Britain has recently changed from McClements scale to the one used commonly in the OECD (Organisation for Economic Cooperation and Development) countries. From 2005/06, in line with European Union conventions, the DWP began to use the modified OECD scale in the Households Below Average Income poverty analysis based on the FRS. The modified OECD scale assigns a weight of 0.67 point to the first adult in the household, 0.33 point to each additional person aged 14 years or older, and 0.20 point to each child

gross rent, water and sewerage charges. East Midlands had the largest proportion of existing tenants (31%) with incomes below the standard Before Housing Costs, while the Eastern region (43%) had the largest proportion After Housing Costs. However, London had the largest gap between Before Housing Costs (14%) and After Housing Costs (41%). The proportions of households below the standard in London and the Eastern region were very close to those in the North West and the Yorkshire and the Humber. This indicates that households in the two former regions had relatively higher average household incomes (Table 9a), but had to contribute more in housing costs. Most importantly, the particular large difference between before and after housing costs in London supports the findings from the Poverty and Social Exclusion Survey of Britain (Bradshaw & Finch, 2003) that London is a region with a comparatively low-income poverty rate but a comparatively high deprivation rate, which is likely to be caused by comparatively high housing costs (p.518).

Figure 2 Proportion of existing tenants, below 60 percent of contemporary median (equivalised) income by region, 2006–07



Note: Equivalised values of 60% contemporary median income for the total population in UK in 2006–07 were £226 per week Before Housing Costs and £193 After Housing Costs (DWP, 2008, Figs. 2.1 and 2.2).

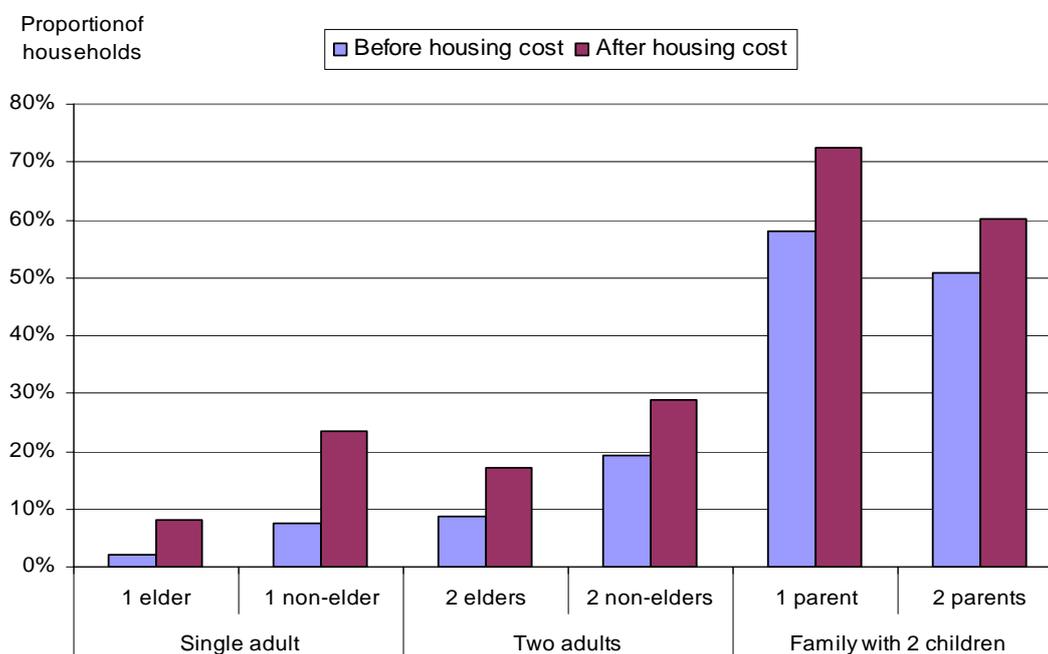
Source: Calculation based on total household income drawn from 2006–07 FRS.

under the age of 14. The equivalised household income is derived by dividing total household income by the sum of the equivalence points allocated to the household members.

4.3 Residual incomes of existing tenants by household type

Data based on the 60 percent median (equivalised) income level defined by DWP are only available for single persons, couples with no children and families with two dependent children (children aged below 14). Figure 3 therefore shows only the comparisons between these three groups of existing tenants. Families with children clearly experience greater affordability problems. In 2006–07, over half such families had incomes well below the standard Before Housing Costs, with over 60 percent below the standard After Housing Costs. In particular, lone parents with two children had the largest proportion of households below the standards for both Before Housing Costs (58%) and After Housing Costs (72%).⁶

Figure 3 Proportion of existing tenants, below 60 percent of contemporary median (equivalised) income by household type, 2006–07



Note: Equivalised values of 60% contemporary median income for each household type from DWP (2008, Table 2.4ts).

Source: Calculation based on total household income drawn from 2006–07 FRS.

5. Summary

This study provides a tentative exploration using residual incomes to supplement the traditional rent-to-income ratios to provide a more complete and better understanding of the affordability of HA rents. Two different data sources – existing tenants from FRS and new tenants from CORE – were used. Despite the different sample sizes, and definitions of incomes and residual income standards, the results showed three very clear conclusions with respect to current affordability problems in the HA sector.

Firstly, rent-to-income ratios for new tenants were all above 0.25, with HA rents least affordable for new tenants in London. Because FRS uses gross income,

⁶ Because of the small sample size of HA tenants in the FRS, it is not possible to characterise the residual income distribution for each household type by region.

which included HB, rent-to-income ratios for existing tenants were therefore below those for new tenants, particularly for existing tenants in London who tended to receive a relatively higher amount of HB due to higher rent. However, residual income analyses of existing tenants in London found that nearly 40 percent of them had residual incomes below 60 percent median incomes After Housing Costs. Thus, in contrast to earlier findings that, despite rents being higher in London and the southern regions, those in the central and northern regions were worse off (Chaplin *et al.*, 1995 and Freeman & Whitehead, 1996, cited in Whitehead, 2006), the residual income analyses for both new and existing tenants in this study found that on average HA tenants in London were not better off than those in other parts of England. Further analyses of rent-to-income ratios and residual incomes by household types and bedsizes revealed that falling average incomes and the rapid rise in HA rents both contributed to the worsening situation for both existing and new tenants in London.

Secondly, despite the slower rates of average rent increases for properties with three or more bedrooms, families with children are at greater risk of poverty because of their persistent low levels of household income. Both rent-to-income ratio and residual income analyses confirmed the particular affordability problems for lone parents in England. The majority had high affordability ratios with residual incomes below the acceptable non-housing consumption standards, even though their average residual incomes had grown due to slower growth in average rents.

Finally, as housing affordability is largely a problem for low-income households, the concern is not the percentage, but rather the joint incidence of a high rent-to-income ratio *and* low income (*italics original*; Fallis, 1993, p.86). Indeed, the residual income analysis complements the rent-to-income ratio and confirms that HA tenants in London and lone parents in England are most likely facing the dual problem of high affordability ratio and low income. Both analyses also indicate that HAs have been moving down-market to increasingly accommodate single non-elderly adults and single parents whose average incomes have been falling behind the growth of HA average rents.

The small sample size of the FRS and the consequent limited nature of any analysis based thereon suggest further research may be required. It may be useful, for example, to summarise affordability ratios and residual incomes over a number of years and compare them to a single year's results in order to identify the trend in average incomes for existing tenants, and to investigate how such trends impact on affordability in the sector. More detailed analyses are also required to assess the impact of HB on improving not only affordability but also the quality of life of HA tenants.

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