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Affordability of utilities' services: extent, practice, policy

Research Paper 5: Simulations of Policies to Alleviate Utility Affordability Issues in the Republic of Ireland: Evidence from the Irish Household Budget Survey 2009-10

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1. Introduction

The role of expenditure in the water and sewerage category for the Irish data is not entirely clear. Our present understanding is that in the Republic of Ireland water was until 2015 paid for via general taxation; nevertheless some expenditure is recorded for water services in the Irish Household Budget Survey 2009-10. This may arise due to the sampling of farming households which perhaps have a different system of water charging. Despite this, most of the expenditure analysed as 'Water' actually results from an expenditure category entitled 'Refuse/sewage collection and skip hire'. We include this sector for completeness, but for comparisons such as between the Republic of Ireland and France, any conclusions need to be treated with caution.

Since different data are contained in the Irish Household Budget Survey, we consider a different set of simulations involving some additional/different targeting options in comparison to the simulations for the UK. The additional targeting options are: rural households, households where someone holds a medical card providing free medical care, households receiving free school transport, households receiving a Family Income Supplement or Welfare Support Allowance and households living in pre-1945 dwellings. In this document, references to 'receiving state benefits' are to the Family Income Supplement/Welfare Support Allowance. Identifying a group living in dwellings built before 1945 is useful for the simulations of energy expenditure as these dwellings may have poor insulation and a dwelling's age may be a proxy indicator for high energy expenditure.

As elsewhere in this study, the reported differences between groups and/or countries in this document have not been statistically tested. Also, it is worth noting that 2009-10 was during the depths of the Financial Crisis; it is not possible to ascertain the extent to which the background economic environment has affected the results presented.

Due to the unpredictable and difficult to interpret results for the twice median and LIHC metrics in the UK, for the Republic of Ireland and Northern Ireland we only perform simulations for the percentage of households above fixed expenditure share thresholds. To allow comparisons across countries the expenditure share thresholds remain the same as those used in the analysis for the UK.

2. Description of population and household groups

From Chart 1 some apparent differences in the structure of the Irish population compared to the UK population can be identified. In the UK there is a greater proportion of households containing someone aged 65 or over than households with total expenditure beneath 60% of the median (29.2% vs 25.6%), however in the Republic of Ireland the situation is reversed (19% vs 23.9%). It is noticeable that in the Republic of Ireland the percentage of households containing someone aged 65 or over is 10 percentage points lower than in the UK. The apparently younger age structure of Irish households is also reflected in the percentage of households with children in the Republic of Ireland being 10 percentage points higher than in the UK.

The other immediately apparent difference to the UK is the far greater proportion of households reporting expenditure on fuels other than gas and electricity. In the Republic of Ireland over half of households (53.3%) report expenditure on fuels other than gas and electricity, whereas in the UK only 7.4% of households report using other fuel types. The much higher percentage using other fuels in the Republic of Ireland is likely to mean this variable is a less effective indicator for targeting resources in the Republic of Ireland than in the UK. Similarly, the high percentages of Irish households in rural areas and containing a medical card holder may limit the effectiveness of these indicators for targeting.

Chart 1: Estimated Percentage of Households in Each Group: Ireland 2009-10
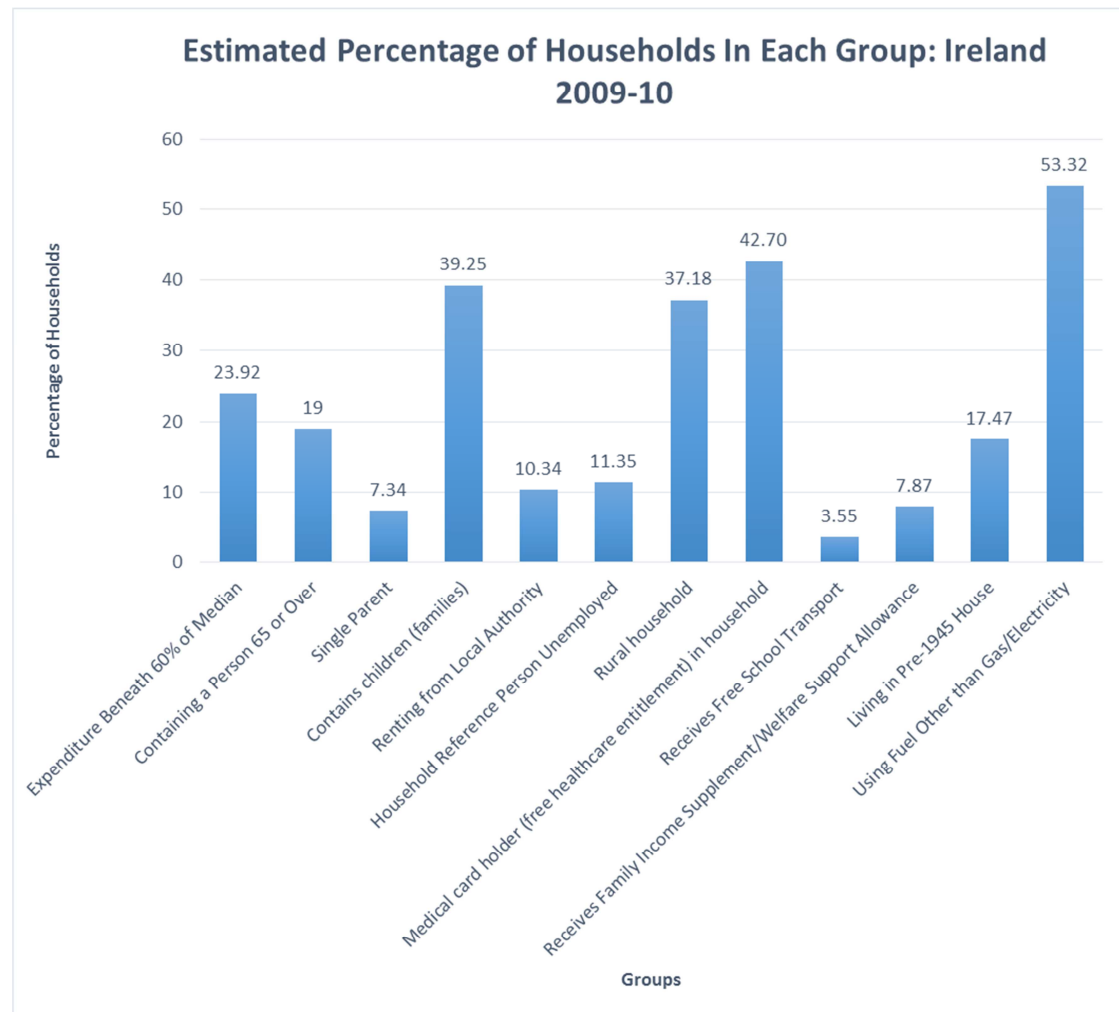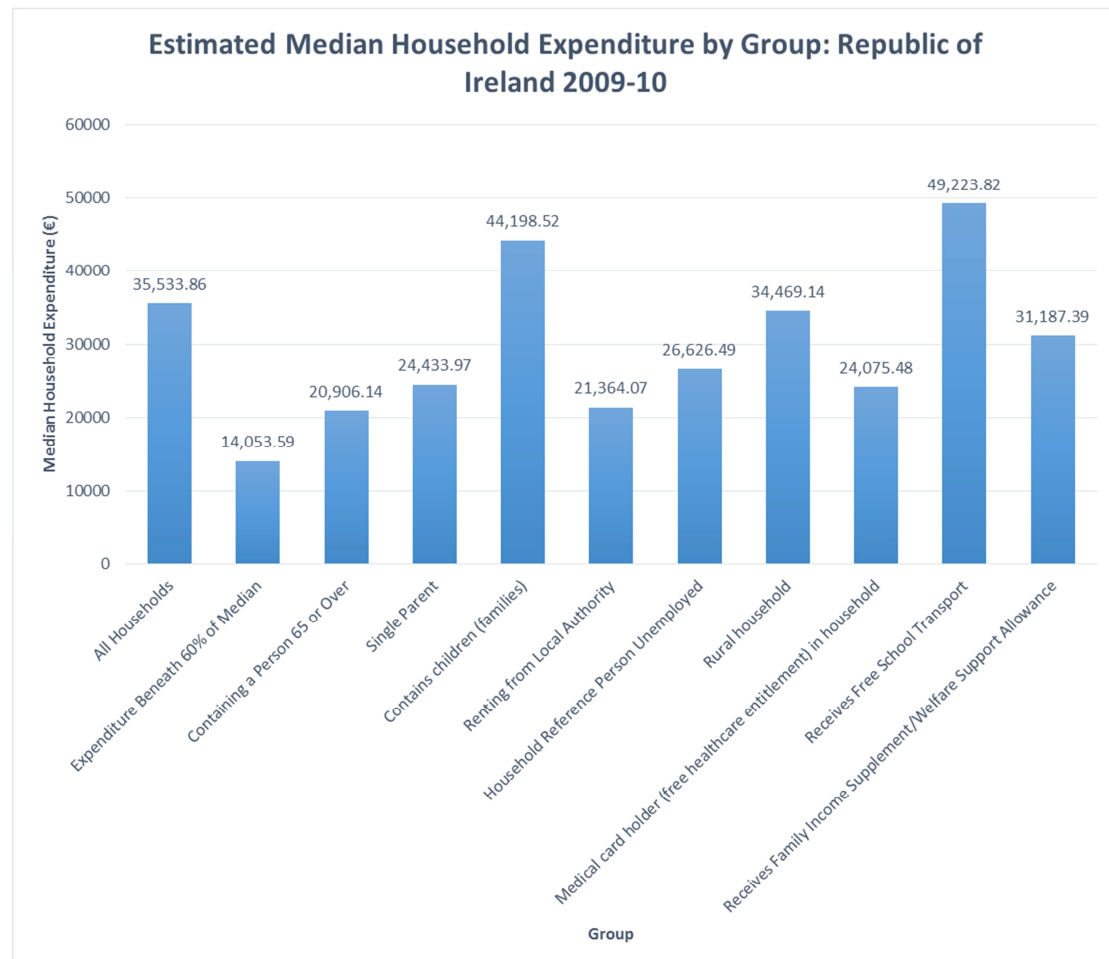

Source: The Irish Household Budget Survey, 2009-10

Chart 2 shows that estimated median household expenditure in the Republic of Ireland in 2009-10 is around a third higher than median household expenditure in the UK in 2012.[1] As in the UK, households containing children in the Republic of Ireland have higher than average household expenditure. It is also clear that receiving free school transport in the Republic of Ireland is not an indicator of general poverty, since this group of households is estimated to have a higher median total expenditure than all households containing children.

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[1] This comparison uses the market euro to pound exchange rate on 29 June 2012 of 0.8068 euros to the pound.

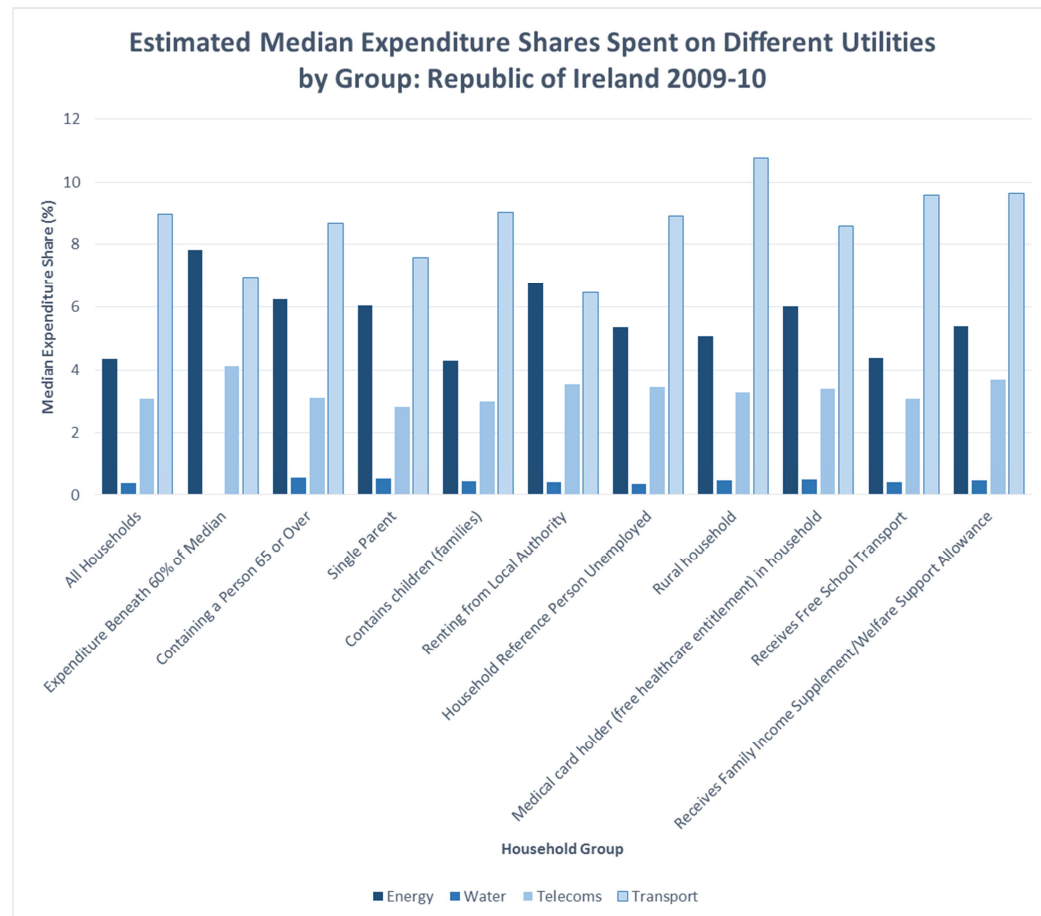**Chart 2: Estimated Median Household Expenditure by Group: Republic of Ireland 2009-10**

Source: The Irish Household Budget Survey, 2009-10

A striking feature of Chart 3 is that in all household groups, except those in social housing and with total expenditure beneath 60% of the median, a higher expenditure share is devoted to transport than to energy. Unsurprisingly, the expenditure share spent on transport is highest among rural households, with over 10% of expenditure being devoted to transport for this group. Lastly, Chart 3 shows that the highest median expenditure shares on energy and telecoms are for those households where total expenditure is beneath 60% of the median level.

Once the difference in charging mechanisms for water is taken into account, Chart 4 shows very similar patterns between the expenditure shares devoted to particular utility sectors and the level of total household expenditure (income) to the UK. As in the UK, the decrease in the estimated median expenditure share devoted to energy as total household expenditure increases is particularly marked. As an additional point, the unusually high median expenditure share devoted to transport by households

with a total expenditure of €110,000-115,000 is probably the result of a limited number of observations in this total expenditure category.

Chart 3: Estimated Median Expenditure Shares Spent on Different Utilities by Group: Republic of Ireland 2009-10

Source: The Irish Household Budget Survey, 2009-10

Chart 4: Estimated Median Expenditure Share Spent on Different Utilities by Total Expenditure (Proxy Income): Republic of Ireland 2009-10

Estimated Median Expenditure Share Spent on Different Utilities by Total Expenditure (Proxy Income): Republic of Ireland 2009-10
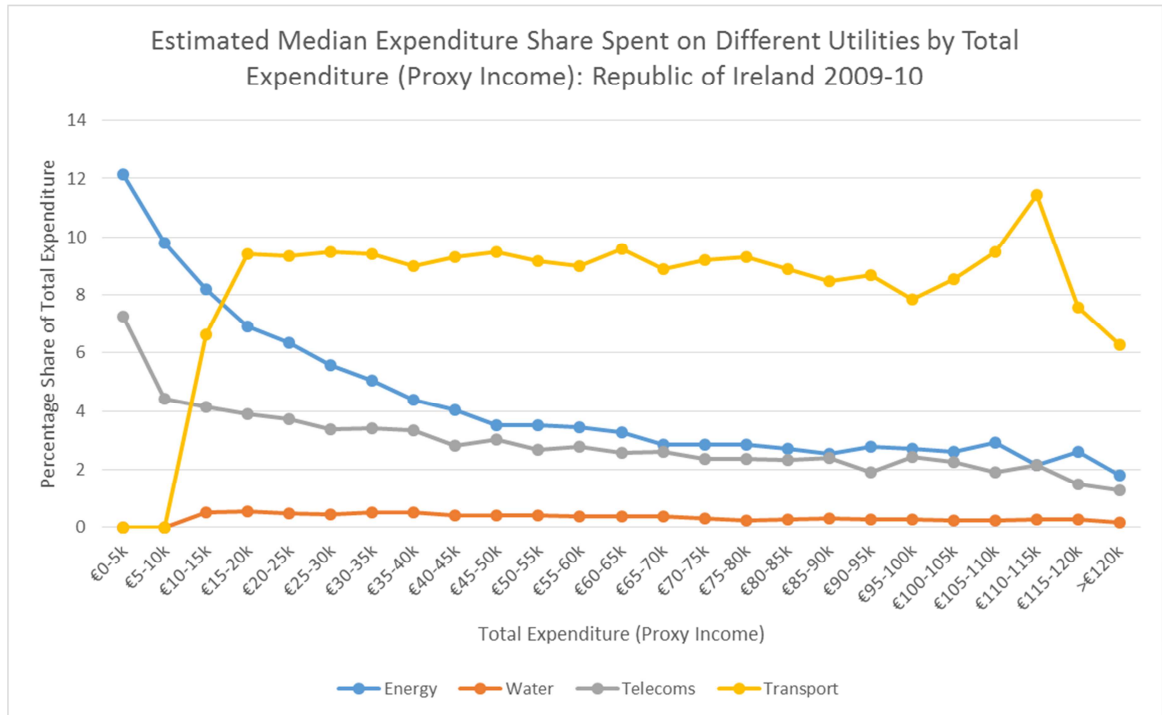
Source: The Irish Household Budget Survey, 2009-10

3. Energy – Baseline

Chart 5 highlights that the equivalence of the 10% expenditure share threshold and the twice the median expenditure share threshold may well be a relationship which holds only within the UK. In the Republic of Ireland the percentage of households lying above the twice median expenditure share in energy is over 4 percentage points higher than for the 10% energy expenditure share indicator. In the Republic of Ireland in 2009-10 the percentage of households spending over 10% of their expenditure on energy was around 4.5 percentage points lower than in the UK in 2012.
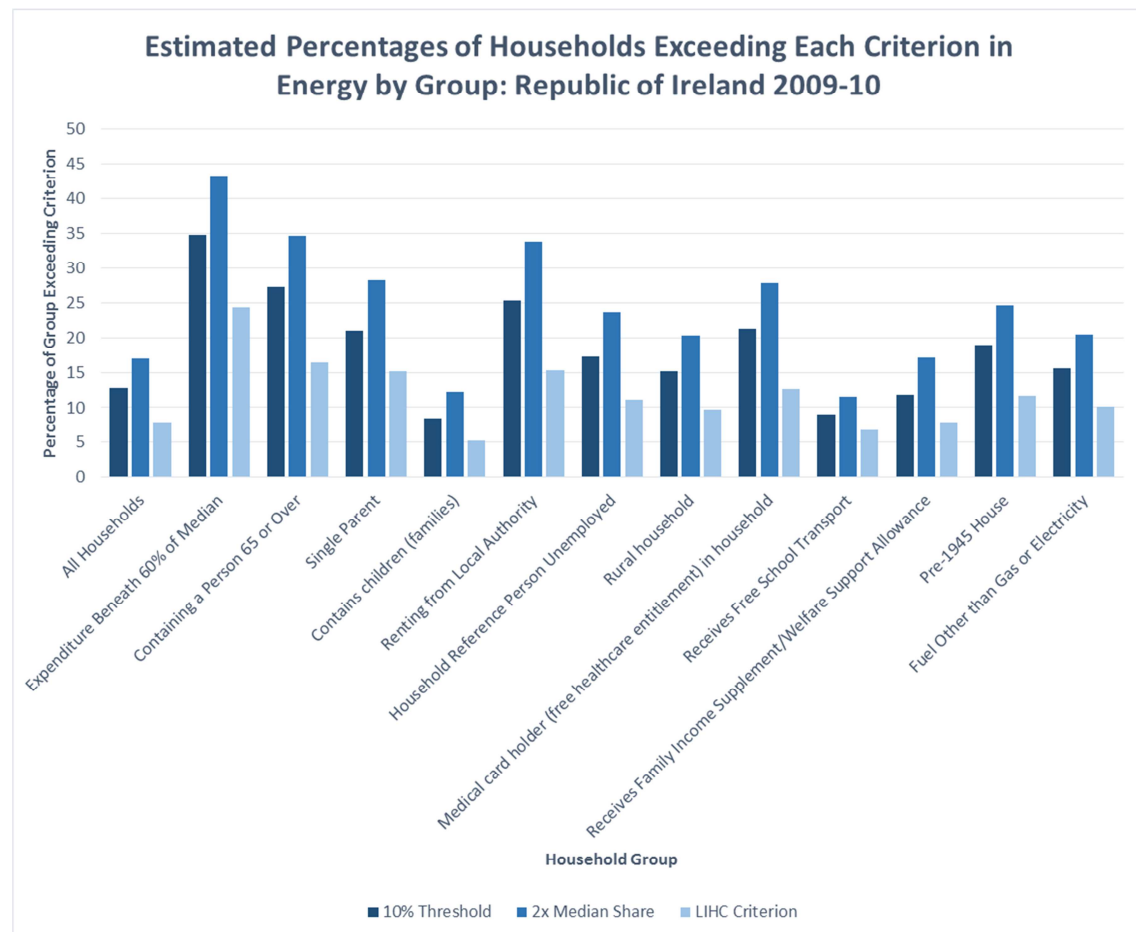
Chart 5: Estimated Percentages of Households above Expenditure Thresholds in Energy: Republic of Ireland 2009-10
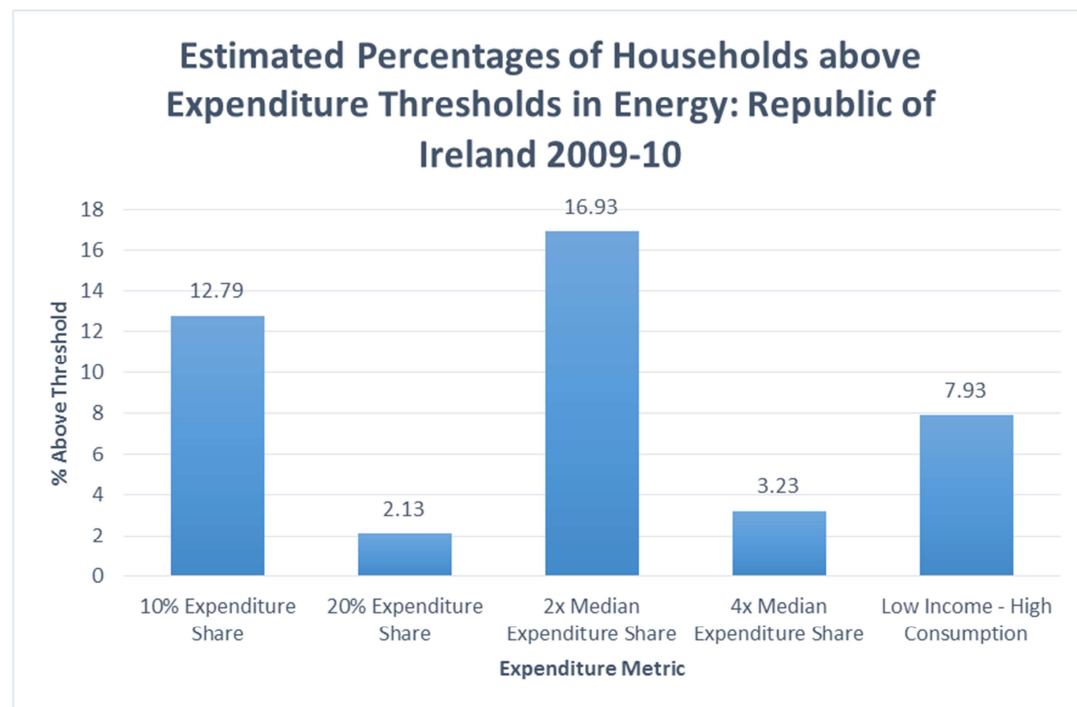
Source: The Irish Household Budget Survey, 2009-10

Turning to chart 6, one can see that living in a dwelling built before 1945 is not a great predictor of affordability difficulties relating to energy. Better indicators of energy affordability difficulties are provided by living in social housing, a household containing a person aged 65 or over, or a household having total expenditure below 60% of the median. As expected, in the Republic of Ireland expenditure on alternative fuels is a less effective indicator of energy affordability pressures than in the UK. In the UK, households using alternative fuels have the second highest rates of affordability pressures, whereas in the Republic of Ireland the same group of households only has the eighth highest rate of affordability pressures.

Chart 6: Estimated Percentages of Households Exceeding Each Criterion in Energy by Group: Republic of Ireland 2009-10

Looking at the mean and median LIHC expenditure gaps in Chart 7, one thing to notice is the effect of living in a pre-1945 dwelling; while the rate of LIHC affordability difficulties is not noticeably high for such households, the mean LIHC expenditure *gap* is the highest out of all household groups. That the median gap for households in pre-1945 dwellings is not especially high suggests that there is a long tail of large/energy inefficient old houses.

Chart 7: Estimated Average Gaps to take the Energy Expenditure of Different Household Groups in LIHC Poverty to Median Expenditure: Republic of Ireland 2009-10
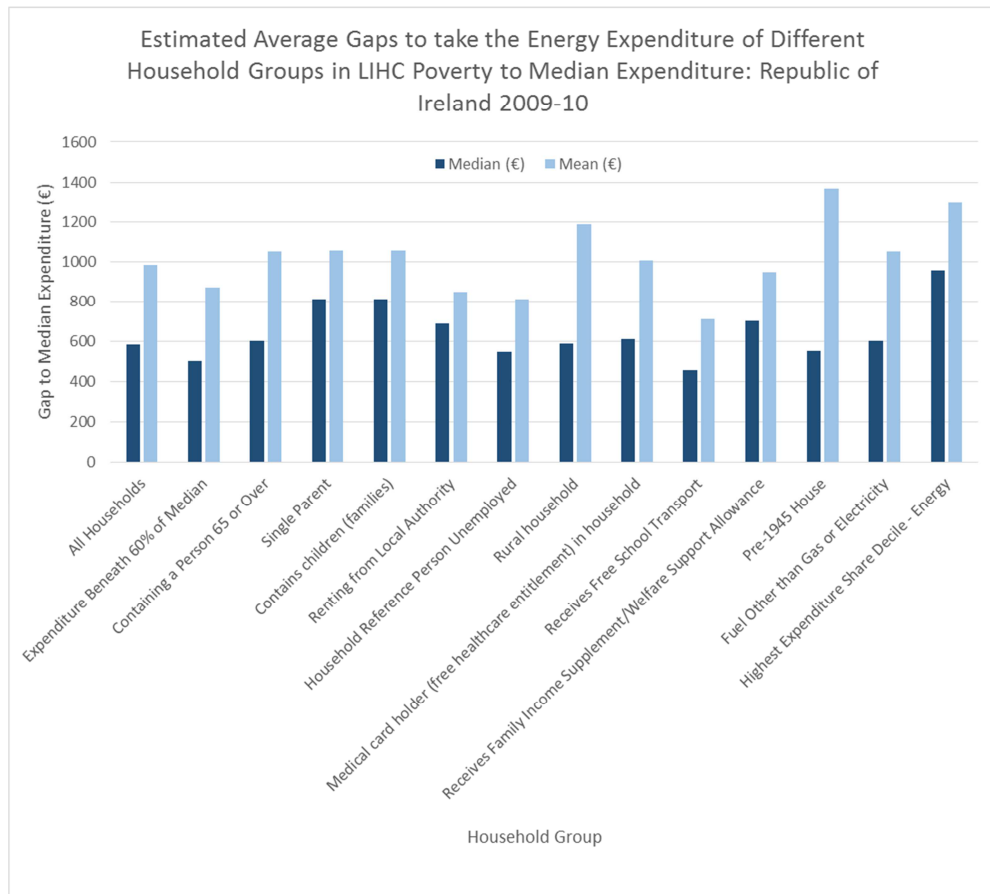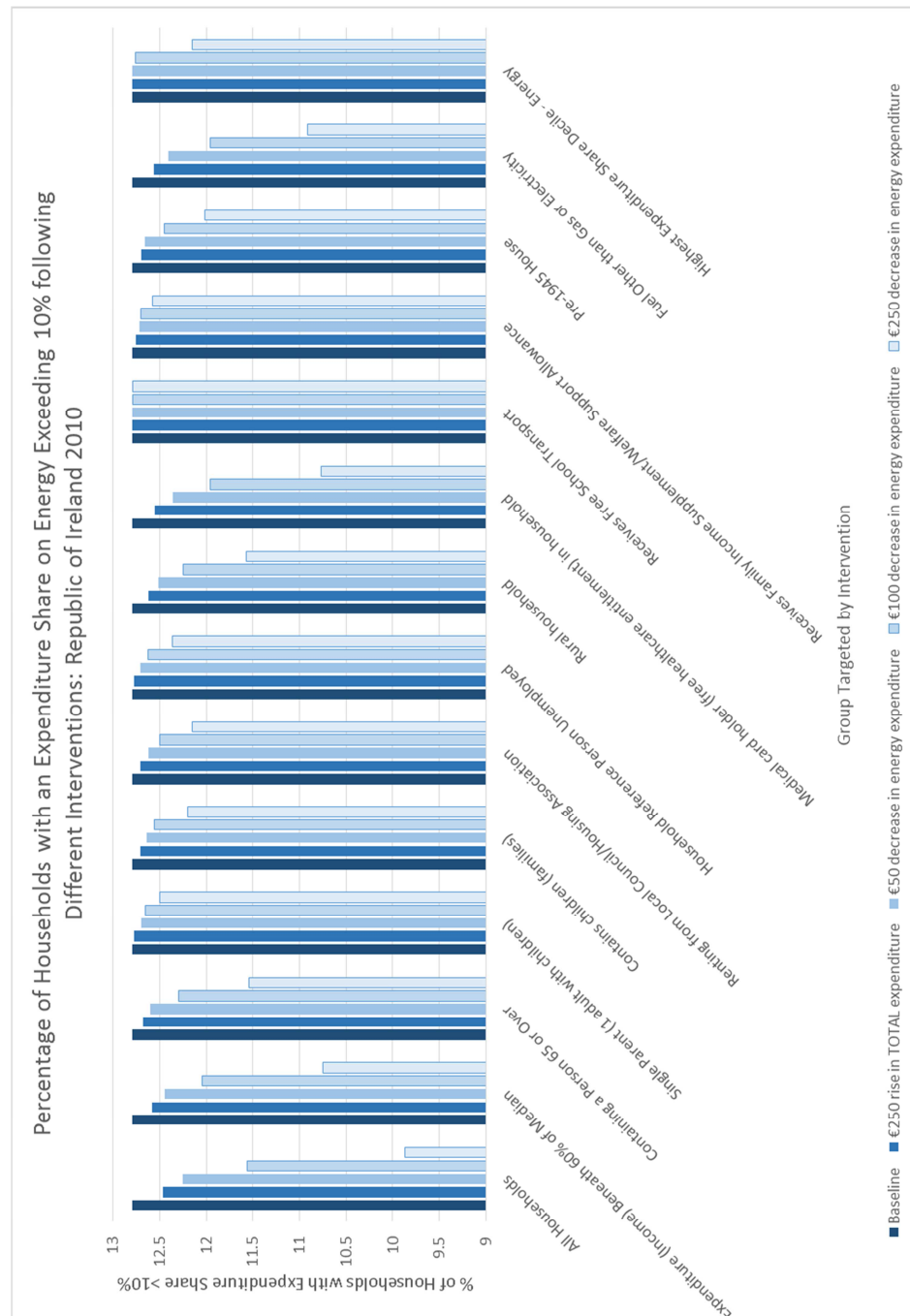

Source: The Irish Household Budget Survey, 2009-10

4. Energy – Simulations

Chart 8 shows the impact of different policy interventions on the percentage of households in the whole population spending more than 10% of their expenditure on energy. The results are fairly predictable with the biggest reductions in the percentage of households above this threshold occurring when energy expenditure is reduced by the largest amount and the group targeted consists of a large group of households. None of the policies has any impact on the percentage of households with a high energy expenditure share when they target households which receive free school transport.

Turning to the effectiveness metric reported in Chart 9, the best groups of households to target are those on low incomes and those living in social housing. Targeting expenditure reductions at households containing a person aged 65 or over, or at single parent households, are the next most effective groups. That a €250 reduction in energy expenditure is needed to meaningfully reduce the recorded affordability difficulties of households with the highest 10% of energy expenditure shares suggests that within this group average energy expenditure is well above the 10% expenditure share threshold.
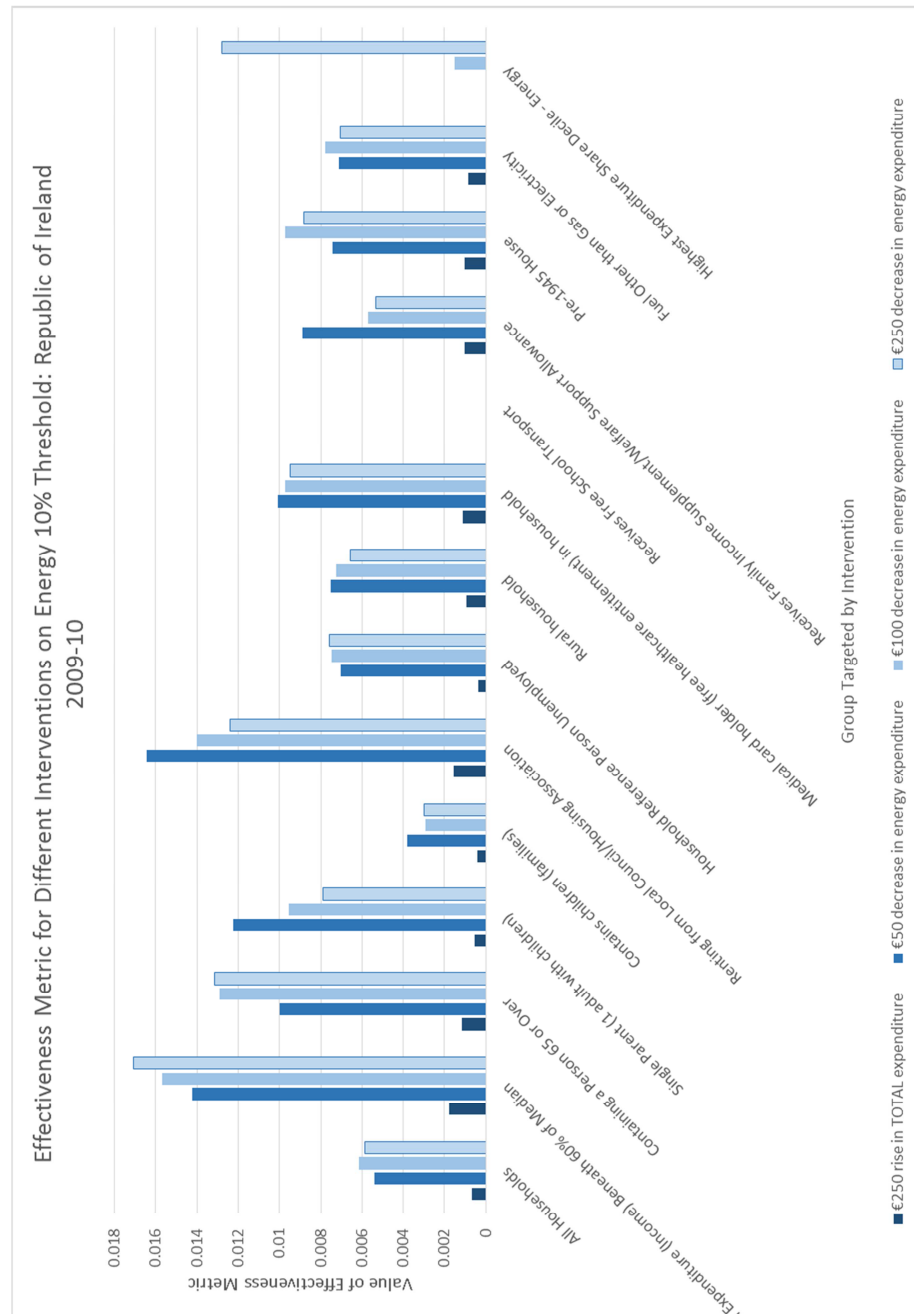
Chart 8: Percentage of Households with an Expenditure Share on Energy Exceeding 10% following Different Interventions: Republic of Ireland 2010

Source: The Irish Household Budget Survey, 2009-10

Chart 9: Effectiveness Metric for Different Interventions on Energy 10% Threshold: Republic of Ireland 2009-10
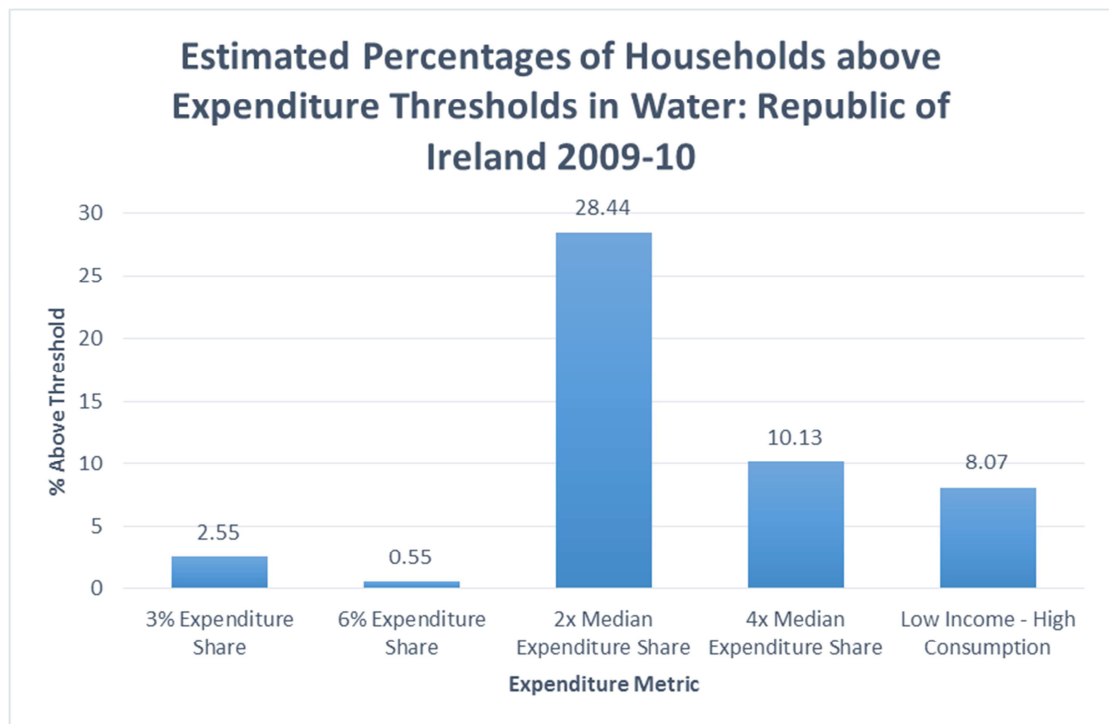

Source: The Irish Household Budget Survey, 2009-10

5. Water – Baseline

As already noted, the results in the Republic of Ireland's water sector should be treated with caution. That water is charged for via general taxation is clearly reflected in Chart 10 where only 2.5% of households have an expenditure share on water exceeding 3%. That almost a third of households have expenditure on 'water and sewerage' above twice the median share simply reflects the very low (or zero) water charges paid by the majority of the Irish population.

Chart 10: Estimated Percentages of Households above Expenditure Thresholds in Water: Republic of Ireland 2009-10
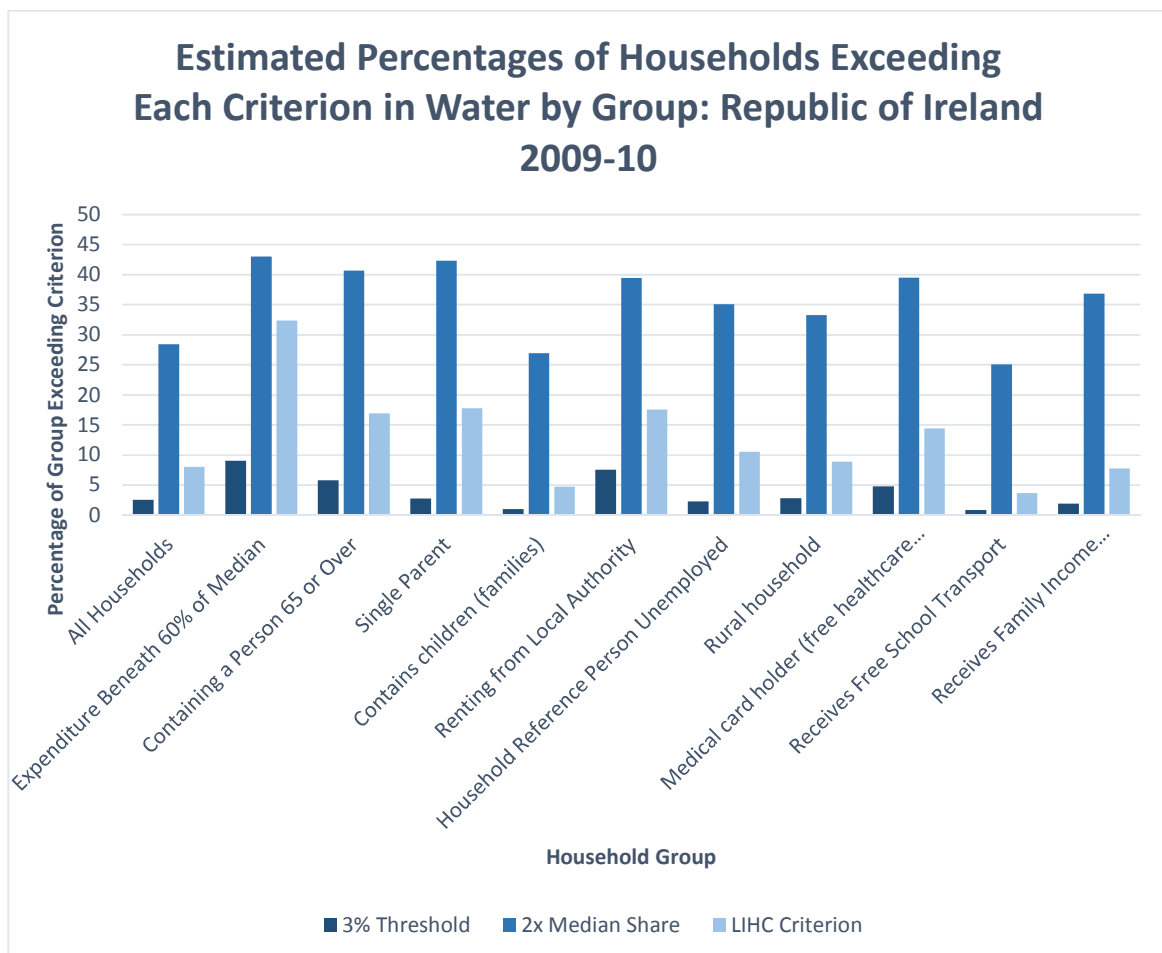

Source: The Irish Household Budget Survey, 2009-10

Despite water charges being very low, Chart 11 shows that the highest rate of water affordability difficulties is still among those households with total expenditure below 60% of the median. Charts 10 and 11 also highlight the limitations of relative metrics of affordability. Chart 10 shows that in the Republic of Ireland 28.4% of households are identified as having water affordability difficulties if the twice the median expenditure share metric is used (since the median expenditure is itself very low), despite only 2.5% of households spending more than 3% of their expenditure on water. In contrast, in Chart 14 (Research Paper 4) on the UK, only 17.8% of households are identified as having water

affordability difficulties when using the twice median metric, despite 22.2% of households in the UK spending more than 3% of their total expenditure on water.

A similar issue emerges when using the LIHC criterion to identify affordability difficulties. In both the UK (Chart 15, Research Paper 4) and the Republic of Ireland (Chart 11, this paper) around 30% of households with total expenditure below 60% of the median have affordability difficulties according to the LIHC criterion. However, in the UK over 60% of this group (total expenditure below 60% of the median) spend more than 3% of their total expenditure on water whereas in Ireland the figure is less than 10%.

Chart 11: Estimated Percentages of Households Exceeding Each Criterion in Water by Group: Republic of Ireland 2009-10

Source: The Irish Household Budget Survey, 2009-10

Since water charges were generally covered by general taxation, it is interesting that the highest mean LIHC expenditure gap for water is among households in social housing, who might be expected to have a higher level of protection.

Chart 12: Estimated Average Gaps to take the Water Expenditure of Different Household Groups in LIHC Poverty to Median Expenditure: Republic of Ireland 2009-10
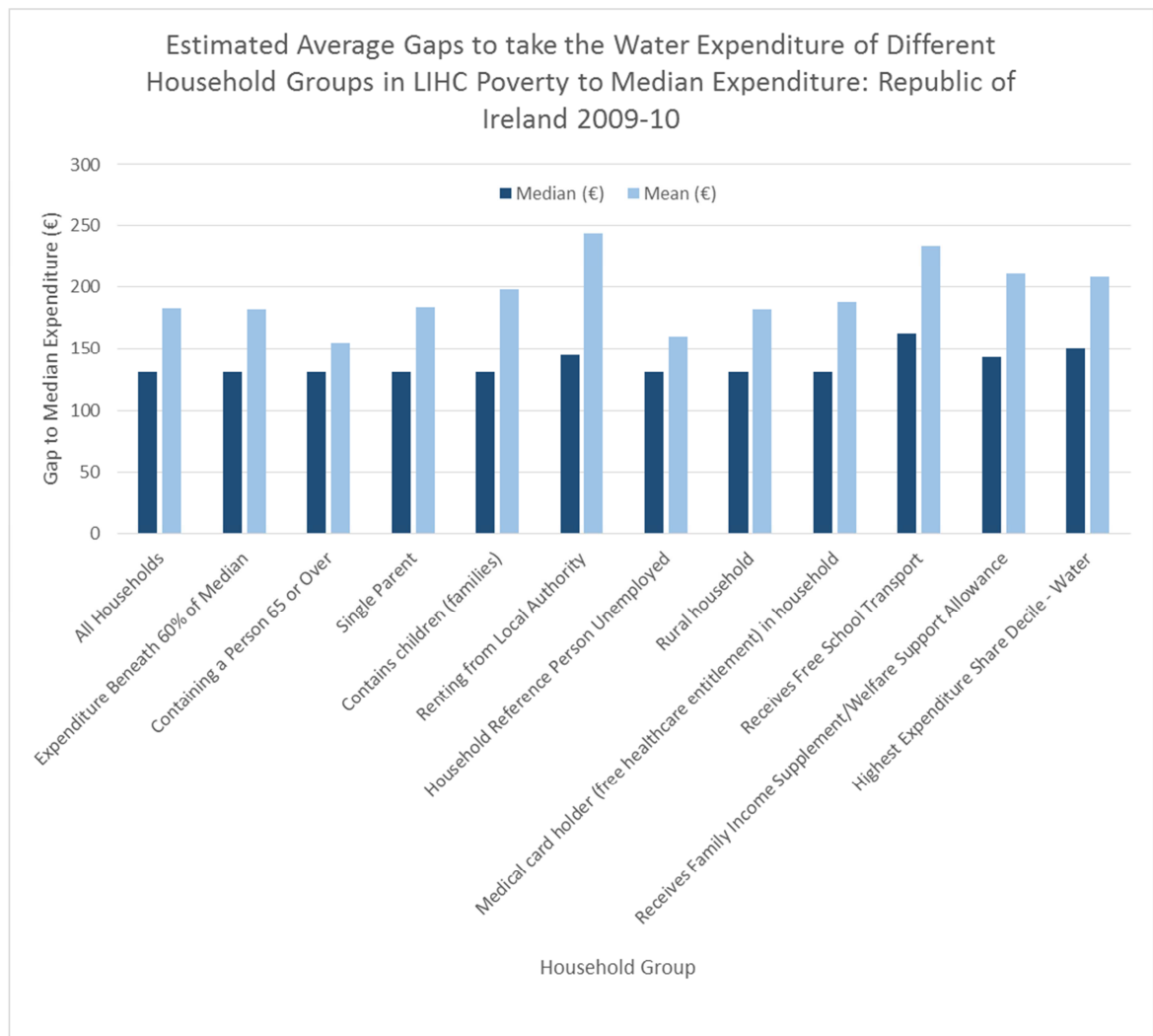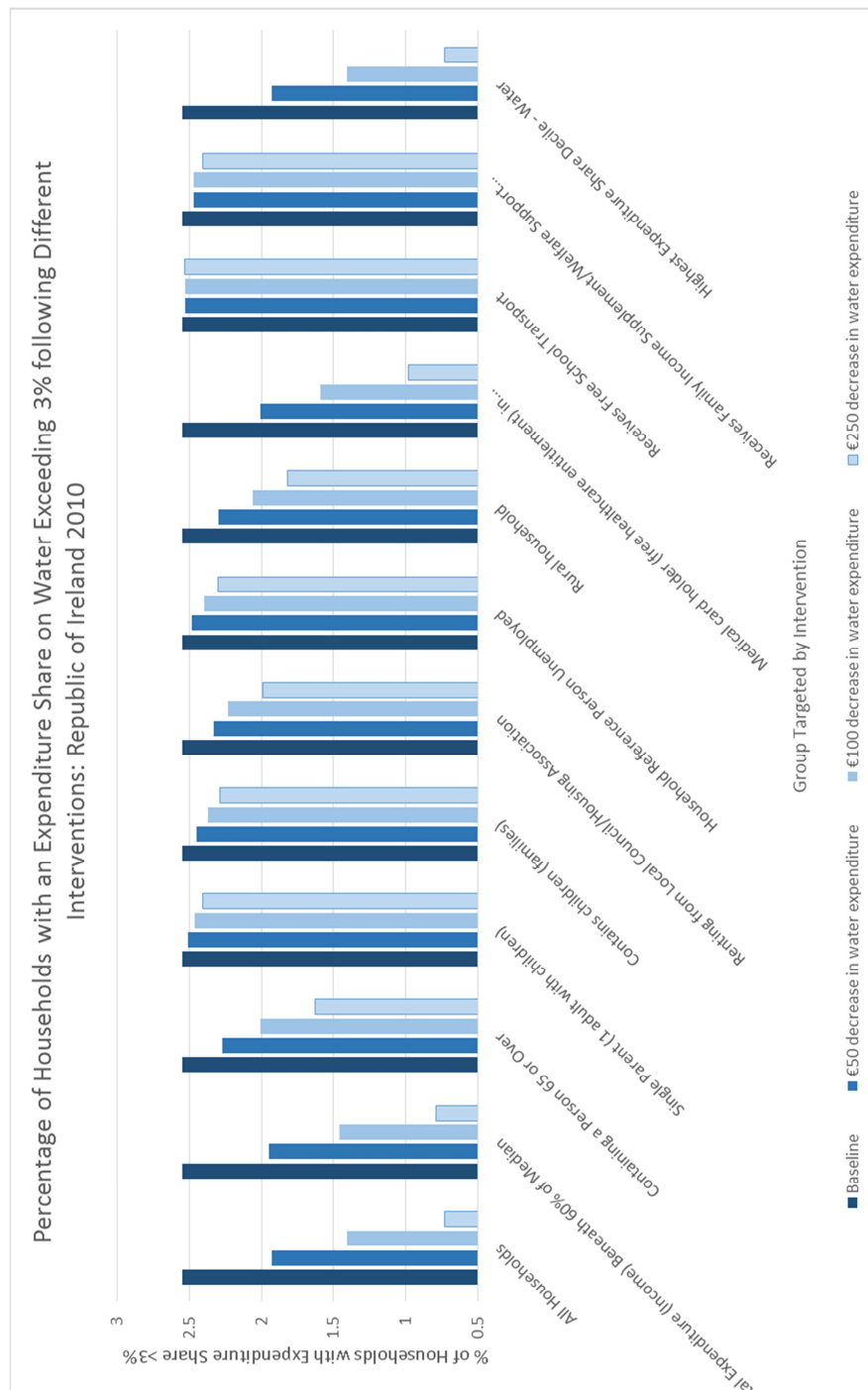

Source: The Irish Household Budget Survey, 2009-10

6. Water – Simulations

Given the difficulties in interpreting the statistics for water and sewerage expenditure in the Republic of Ireland, the simulations are included for completeness and interest rather than direct policy implications. Charts 13 and 14 show that the most effective group to target to reduce the percentage of households with a water expenditure share above 3% are the 10% of households devoting the highest expenditure shares to water. Since average water and sewerage expenditure is so low, a large number of these households are close enough to the 3% threshold for the simulated expenditure reductions to have a big impact. Targeting a €250 expenditure reduction at the 10% of households with the highest water expenditure shares reduces the percentage of Irish households spending over 3% of total expenditure on water by four-fifths.

Chart 13: Percentage of households with an Expenditure Share on Water Exceeding 3% following Different Interventions: Republic of Ireland 2010

Source: The Irish Household Budget Survey, 2009-10

Chart 14: Effectiveness Metric for Different Interventions on Water 3% Threshold: Republic of Ireland 2009-10
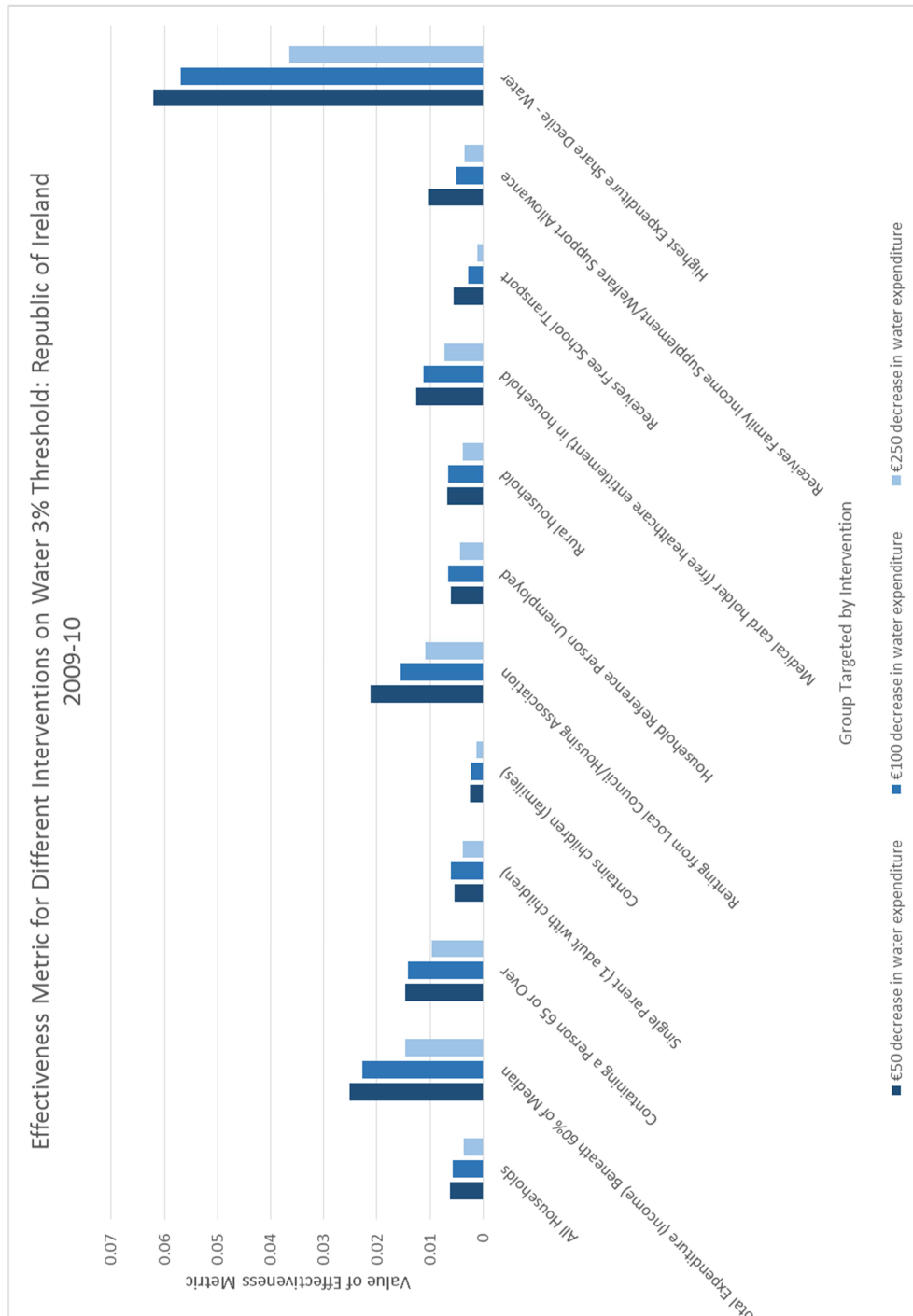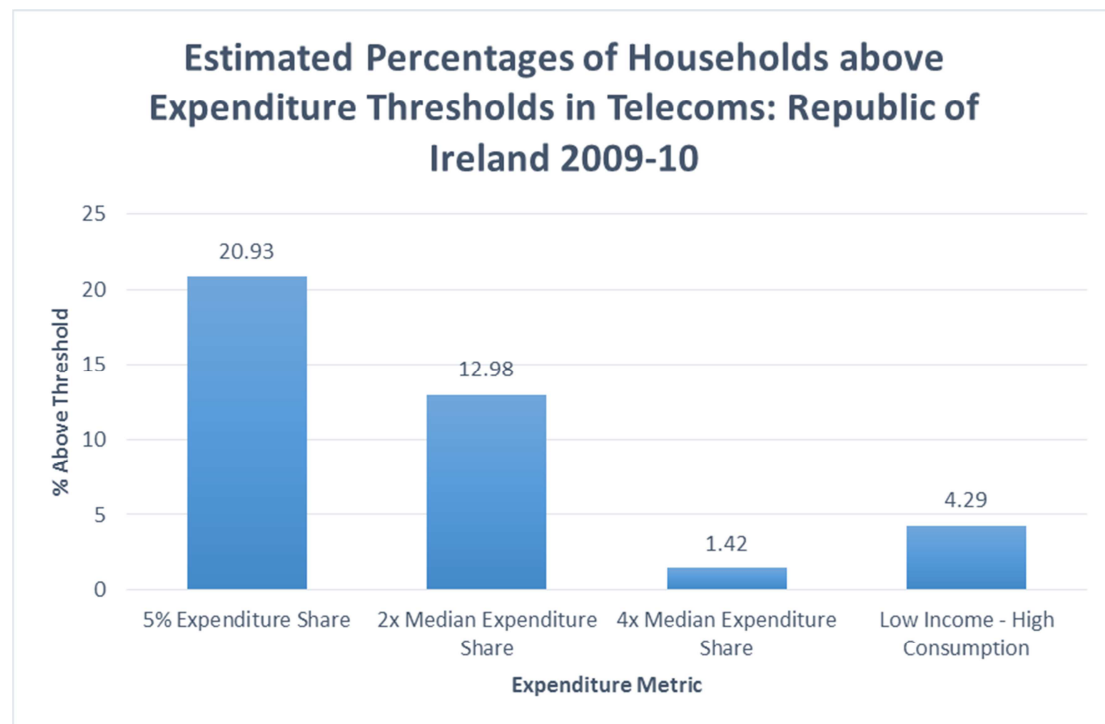

Source: The Irish Household Budget Survey, 2009-10

7. Telecoms – Baseline

Chart 15 shows that the estimated percentages of Irish households above each of the relative affordability metrics is broadly similar to the percentages in the UK shown in Chart 23 (Research Paper 4). However, the percentage of households in the Republic of Ireland spending more than 5% of total expenditure on telecoms is somewhat higher at 20.9% compared to only 16% in the UK in 2012. This figure is all the more notable given the higher total expenditure figures for the Republic of Ireland in 2009-10.

Chart 15: Estimated Percentages of Households above Expenditure Thresholds in Telecoms: Republic of Ireland 2009-10

Source: The Irish Household Budget Survey, 2009-10

Chart 16 shows a clear link between low incomes and the recorded rate of households facing affordability difficulties with their telecom bills. For all three affordability metrics in Chart 16, the highest rate of affordability difficulties is among households with total expenditure beneath 60% of the median.

Chart 16: Estimated Percentages of Households Exceeding Each Criterion in Telecoms by Group: Republic of Ireland 2009-10
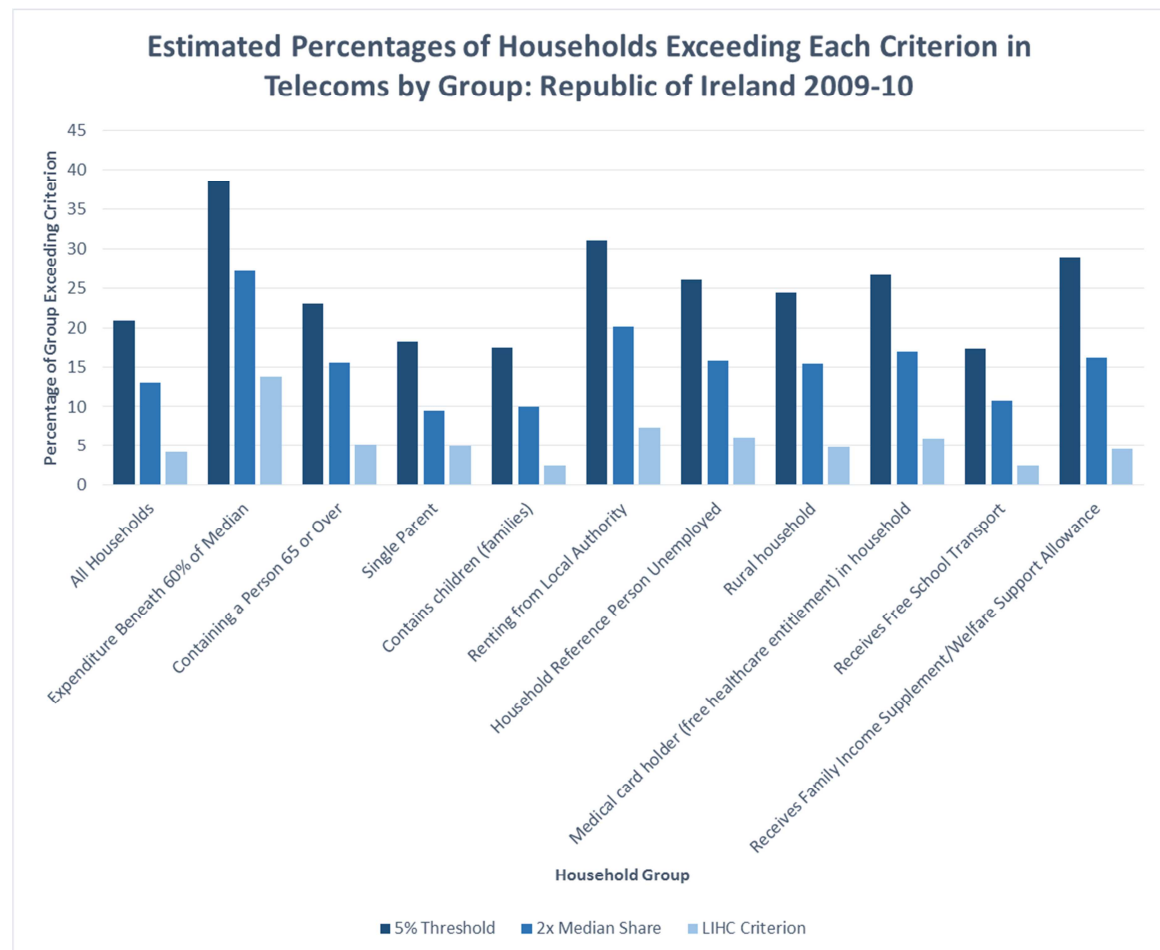
Source: The Irish Household Budget Survey, 2009-10

Despite the strong link between telecoms affordability difficulties and low incomes, Chart 17 shows that the biggest mean and median LIHC expenditure gaps for telecoms are for households receiving free school transport. The apparent depth of difficulties for those households in this group with affordability difficulties probably reflects a high demand for telecoms services. Anecdotally, children have a high demand for telecoms services which may be increased further if these children are located in rural areas where the opportunities for them to meet their friends physically may be limited.

Chart 17: Estimated Average Gaps to take the Telecoms Expenditure of Different Household Groups in LIHC Poverty to Median Expenditure: Republic of Ireland 2009-10
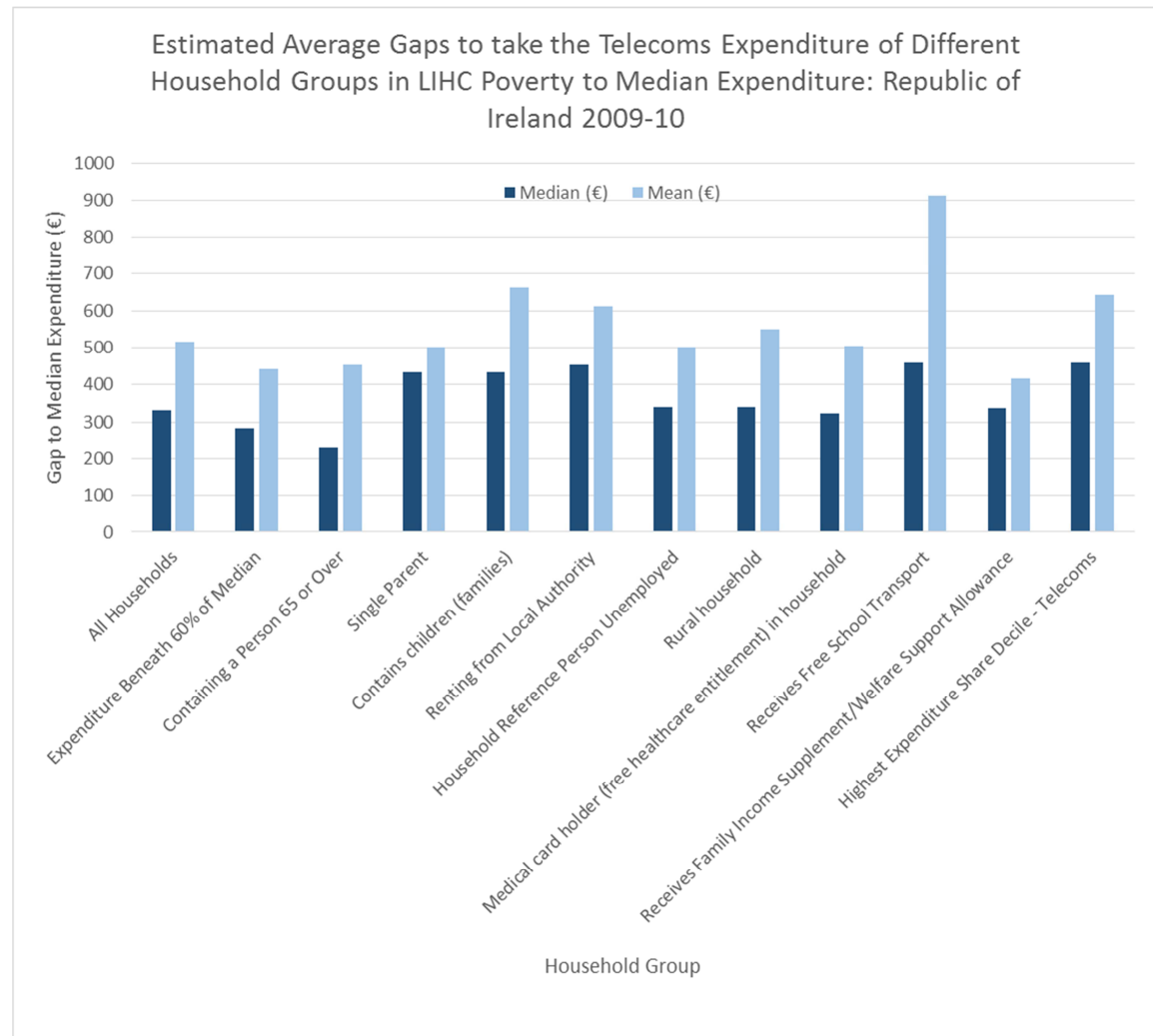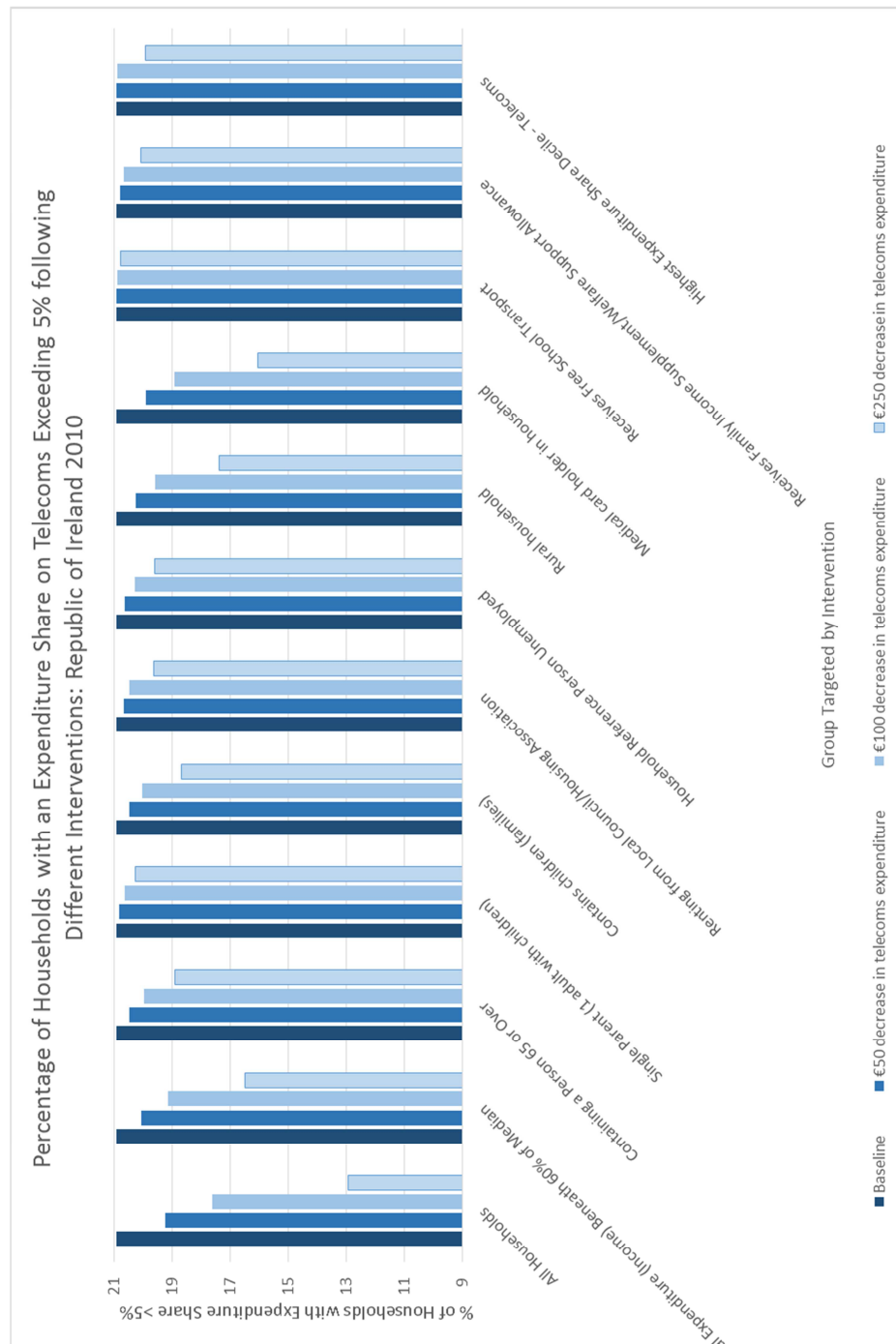

Source: The Irish Household Budget Survey, 2009-10

8. Telecoms – Simulations

Given that telecoms affordability difficulties in the Republic of Ireland are closely linked to low income, it is no surprise that the most effective policy interventions are those targeted at households with total expenditure beneath 60% of the median (see Chart 19). More interesting is that compared to the situations in energy and water, reducing the expenditure of households where the breadwinner is unemployed is in relative terms more effective. When compared to the UK in 2012 (Chart 27, Research Paper 4) reducing the expenditure of single parent households by €50 in the Republic of Ireland is less effective in reducing the percentage of households spending more than 5% of total expenditure on telecoms. The other contrast with the UK is that targeting expenditure reductions at the 10% of households with the highest telecoms expenditure shares is much less effective in the Republic of Ireland. This suggests that the level of expenditure on telecoms by this group of households was higher in the Republic of Ireland in 2009-10 than in the UK in 2012. Only an expenditure reduction of €250 has any impact on the percentage of households above the 5% threshold in the Republic of Ireland.

Chart 18: Percentage of Households with an Expenditure Share on Telecoms Exceeding 5% following Different Interventions: Republic of Ireland 2010

Source: The Irish Household Budget Survey, 2009-10

Chart 19: Effectiveness Metric for Different Interventions on Telecoms 5% Threshold: Republic of Ireland 2009-10
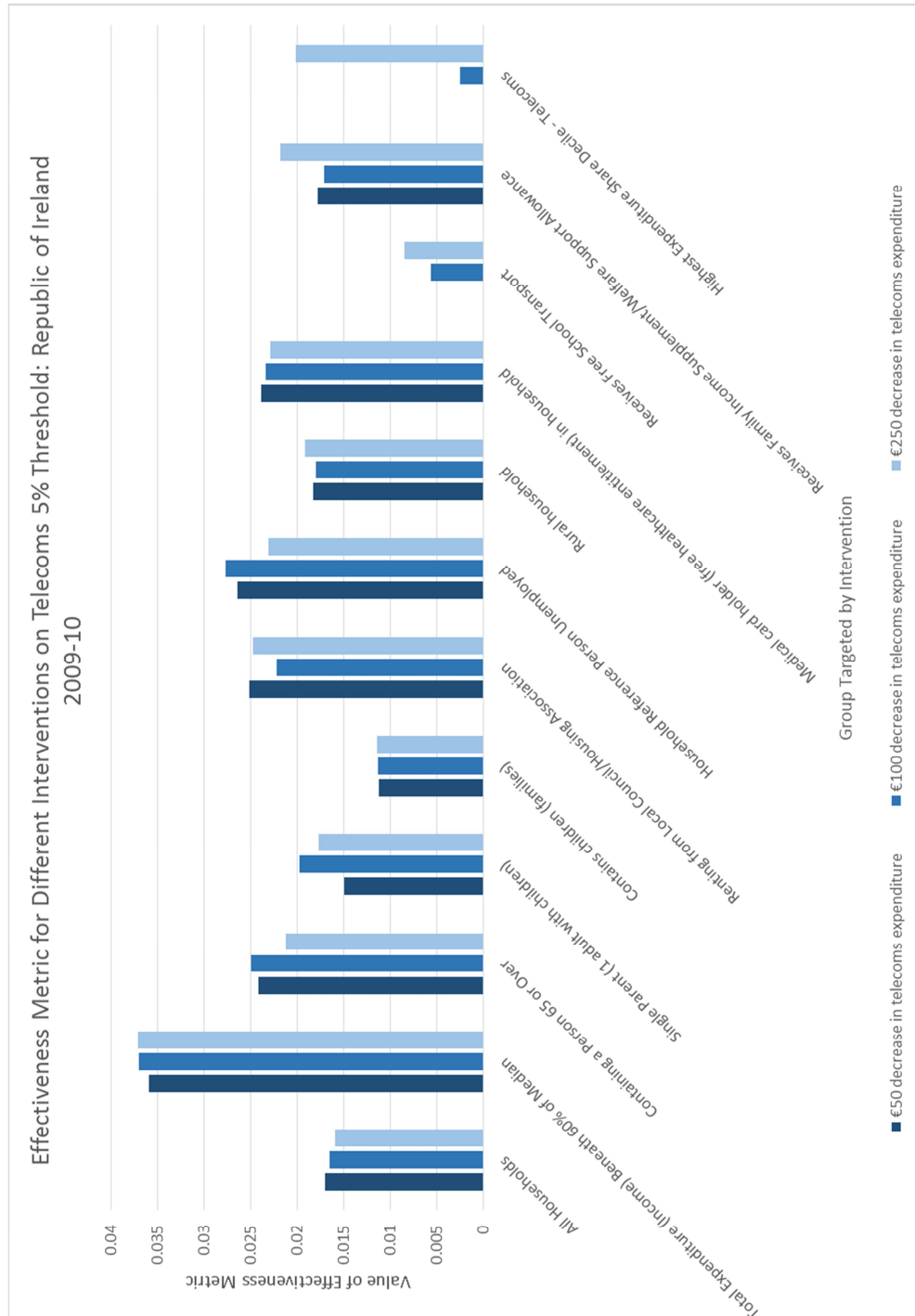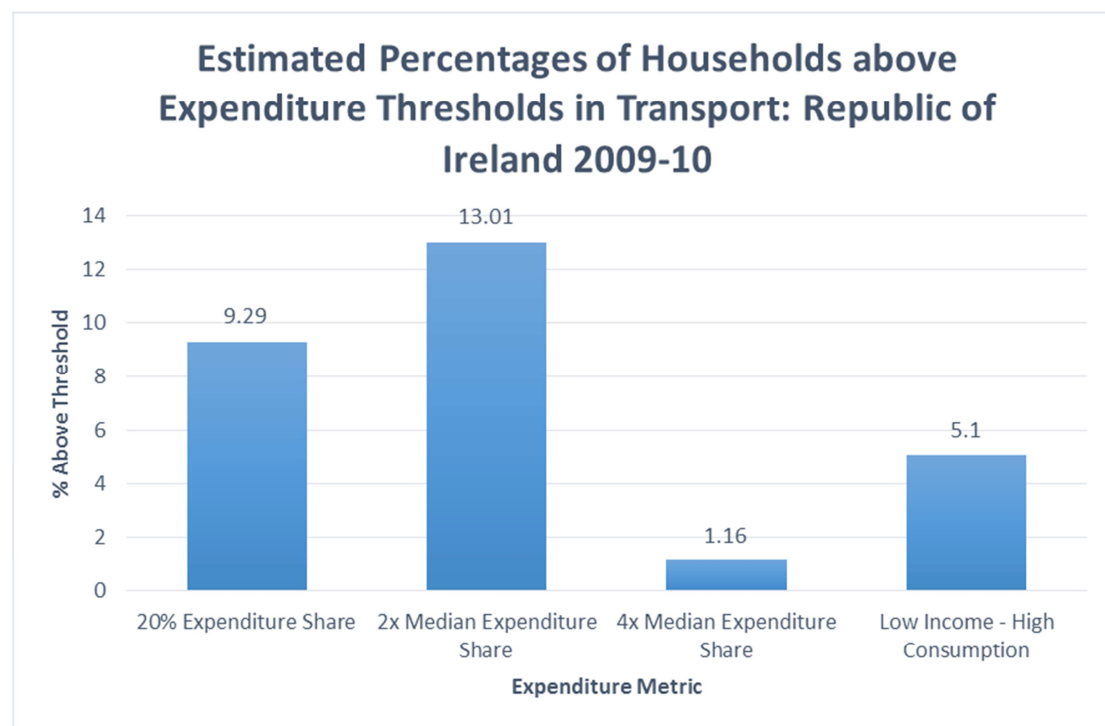

Source: The Irish Household Budget Survey, 2009-10

9. Transport – Baseline

Chart 20 shows that the percentage of households spending over 20% on transport in the Republic of Ireland is much lower than in the UK with the figure being 9.3% compared with 16.3%.

Chart 20: Estimated Percentages of Households above Expenditure Thresholds in Transport: Republic of Ireland 2009-10

Source: The Irish Household Budget Survey, 2009-10

Unsurprisingly, Chart 21 shows that the household group with the highest rate of affordability difficulties, according to both the 20% threshold and the twice median metric, are households in rural areas, who are likely to have a particularly high demand for transport. Another group spending a relatively high proportion of expenditure on transport are households where the breadwinner is unemployed. This probably reflects the fact that this group have low incomes but the breadwinner still needs to travel to find work; or if the period of low income is expected to be temporary a relatively high level of discretionary travel is still being undertaken. However, it is single parent households who have the highest rate of affordability difficulties according to the LIHC criterion despite the percentage of single parents above the 20% and twice median thresholds being pretty low, though Chart 22 also shows that single parent households have the lowest mean and median LIHC expenditure *gaps* for transport.
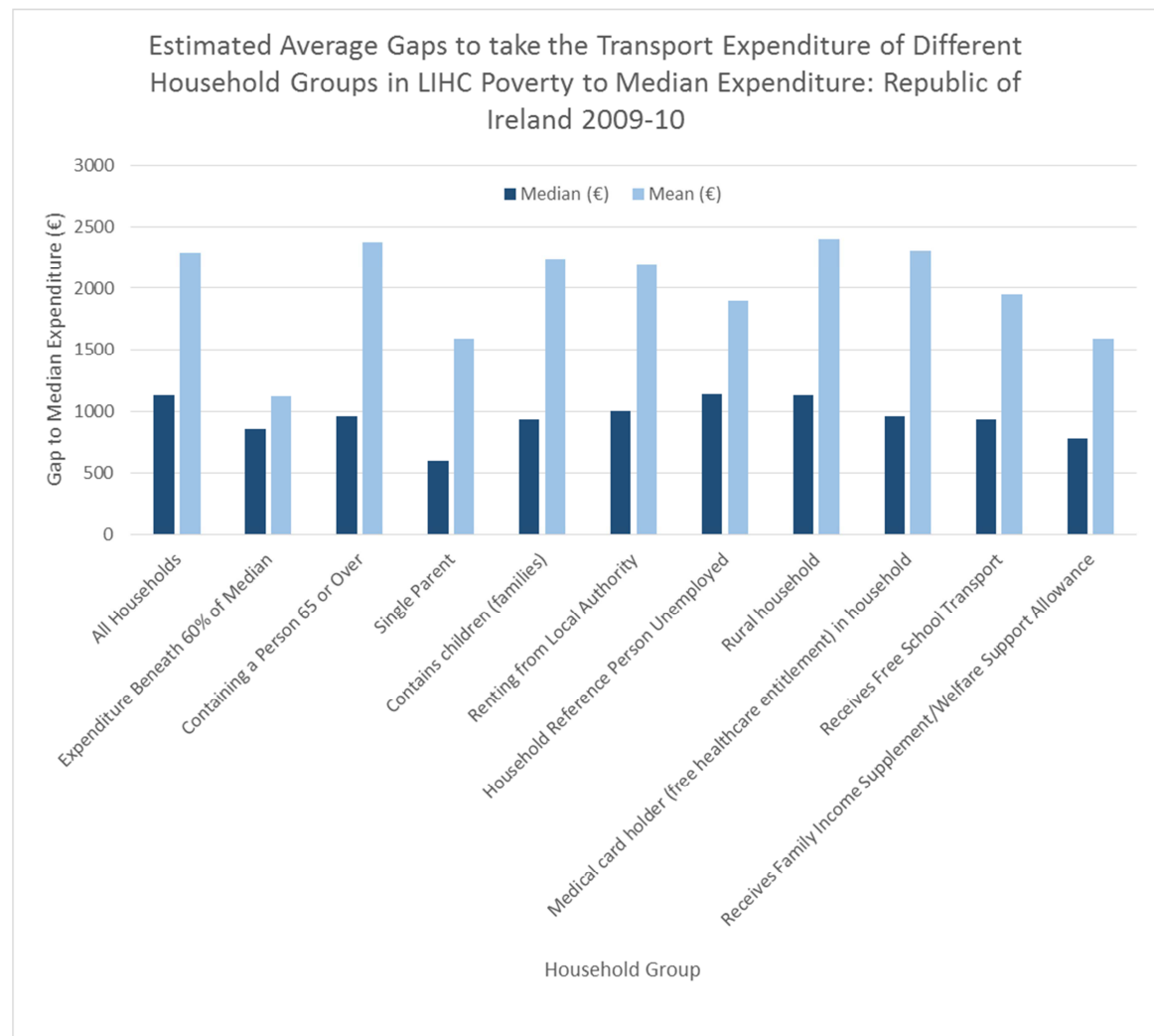
Chart 21: Estimated Percentages of Households Exceeding Each Criterion in Transport by Group: Republic of Ireland 2009-10
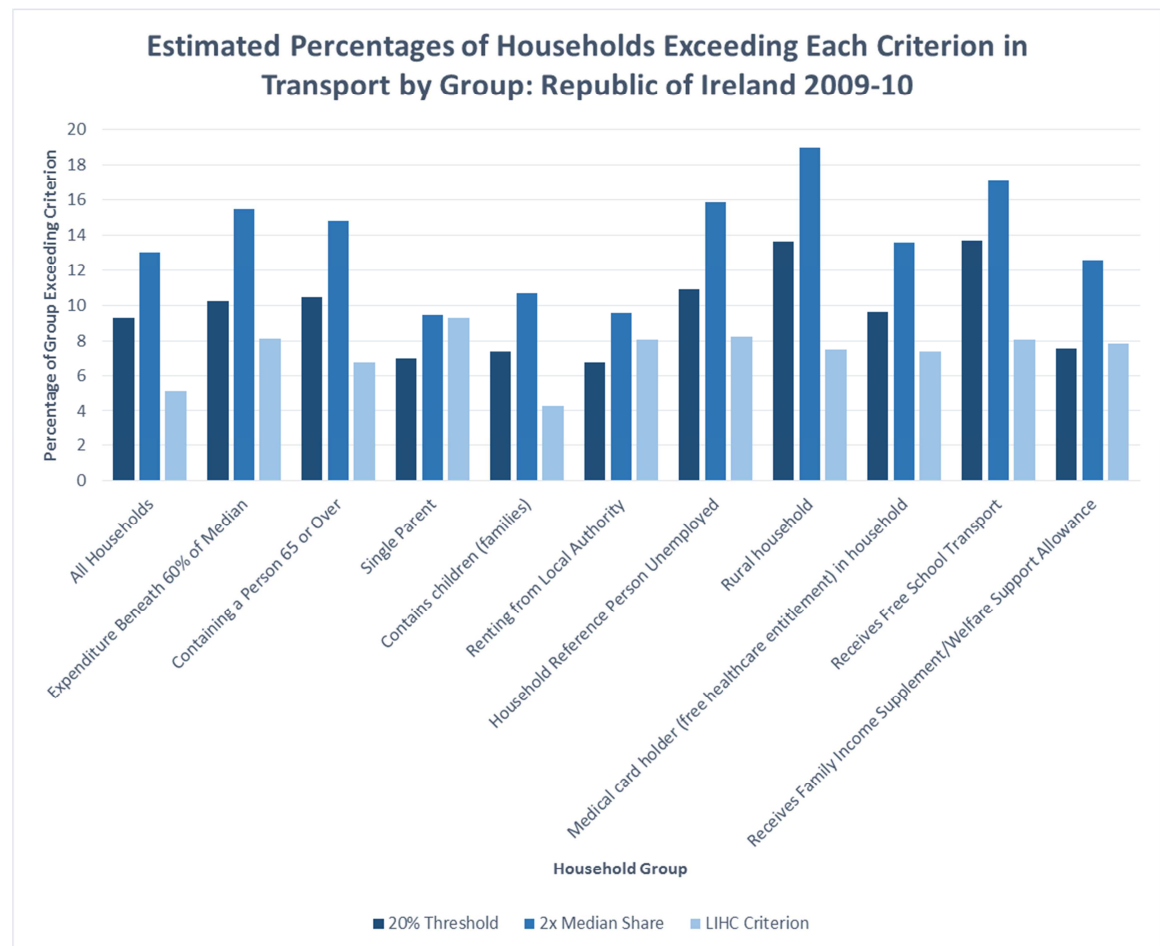
Source: The Irish Household Budget Survey, 2009-10

Chart 22: Estimated Average Gaps to take the Transport Expenditure of Different Household Groups in LIHC Poverty to Median Expenditure: Republic of Ireland 2009-10
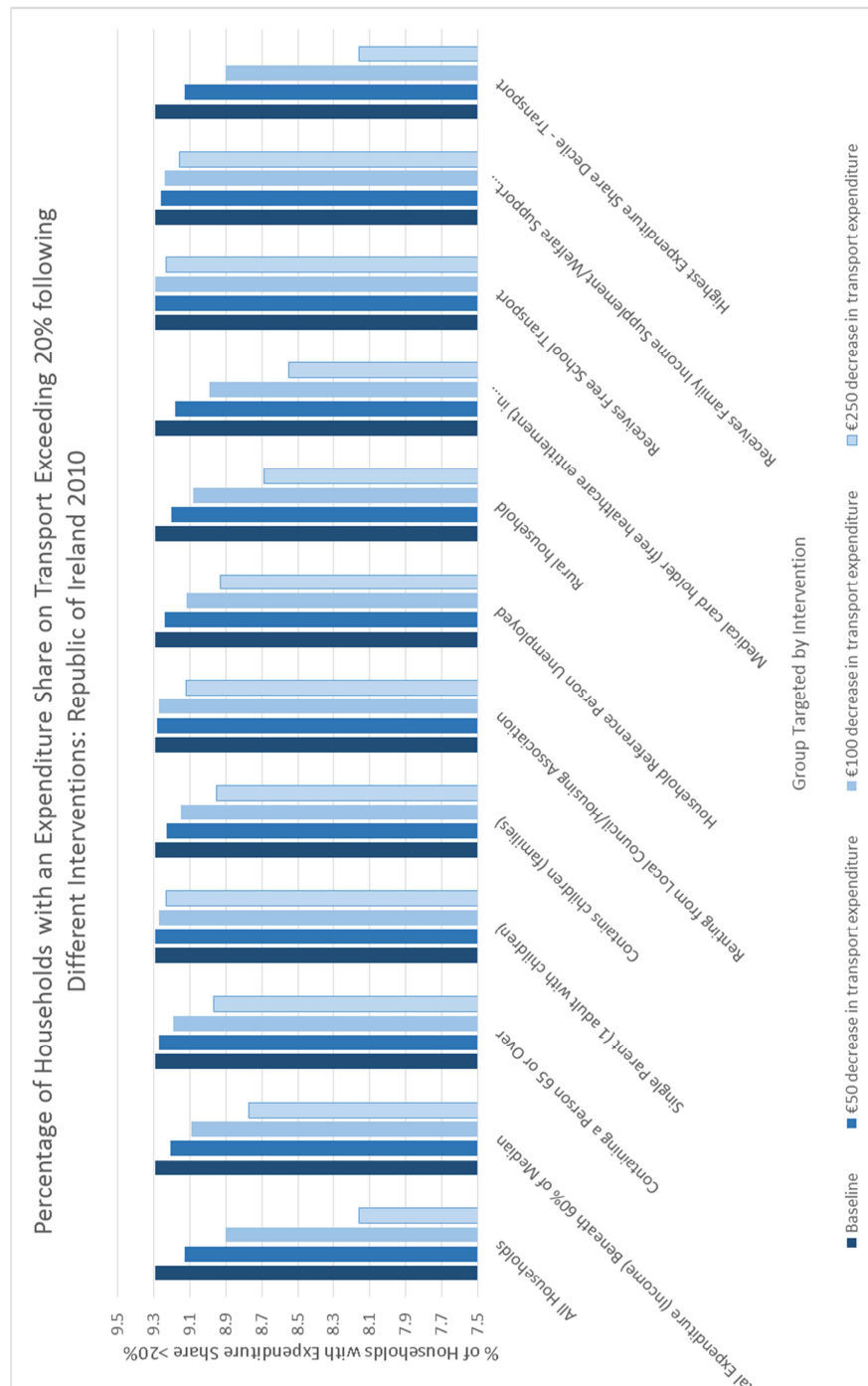

Source: The Irish Household Budget Survey, 2009-10
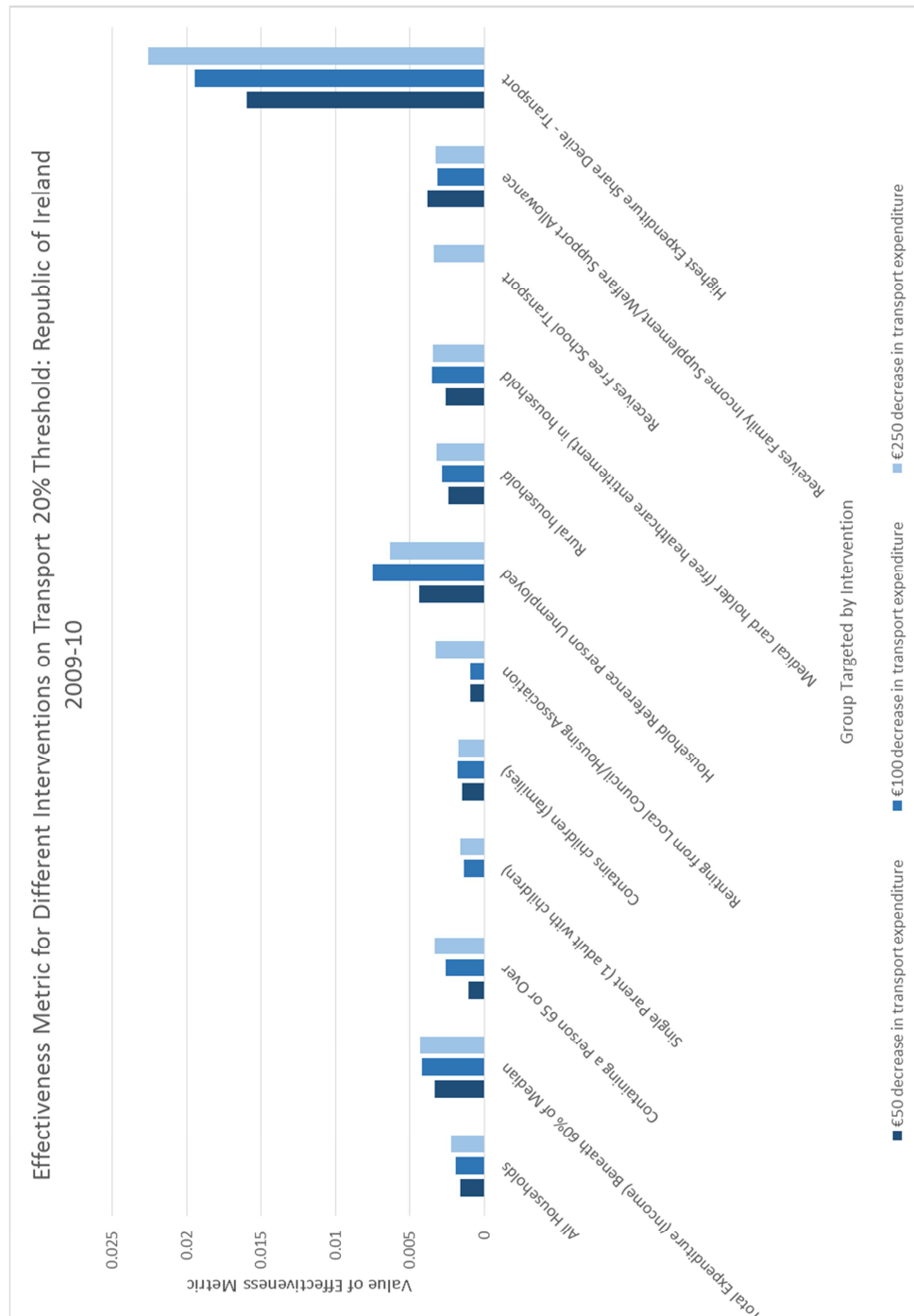
10. Transport – Simulations

Turning to the most effective policy interventions in reducing the percentage of households with transport expenditure exceeding 20%, Charts 23 and 24 show a clear difference with the UK. In the Republic of Ireland by far the most effective policy intervention is to target expenditure reductions at the 10% of households with the largest expenditure shares devoted to transport: targeting an expenditure reduction of €250 at this group results in the percentage of households spending over 20% of their expenditure on transport dropping by over 1 percentage point. In the UK (Chart 35, Research Paper 4) the same policy has no impact on the percentage of households spending over 20% on transport. This suggests that the 10% of households with the highest transport expenditure shares in the UK devote a much higher proportion of their expenditure to transport than in the Republic of Ireland.

Chart 23: Percentage of Households with an Expenditure Share on Transport Exceeding 20% following Different Interventions: Republic of Ireland 2010

Source: The Irish Household Budget Survey, 2009-10

Chart 24: Effectiveness Metric for Different Interventions on Transport 20% Threshold: Republic of Ireland 2009-10

Source: The Irish Household Budget Survey, 2009-10