ASSESSING THE ABILITY TO PAY FOR THE FEES CHARGED BY CHARITIES

PHASE 1 REPORT

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October 2008

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We would like to thank Jocelyn Paine, Asghar Adelzadeh, Joyce Stark and Office of the Scottish Charity Regulator representatives for comments on earlier drafts.

We also thank Professor Glen Bramley of Herriot-Watt University and Jon Best of Sports Scotland for kindly taking the time to answer questions.

Family Resources Survey data was supplied by the Economic and Social Research Council data archives.

1. Executive summary

The Office of the Scottish Charity Regulator (OSCR) is charged with granting charitable status in accordance with the Charities and Trustee Investment (Scotland) Act 2005 (2005 Act).

To qualify as a charity, a body must have all charitable purposes and provide public benefit. OSCR when assessing whether a body provides public benefit must have regard to whether any condition on obtaining that benefit is unduly restrictive. Unduly restrictive conditions can take many forms; but one key aspect is the fees charged by individual charities for their services.

This study was commissioned by OSCR to develop and appraise methods for assessing the ability to pay for the services provided by charities. The study was to have two phases: an initial evaluation stage, in which we assessed possible measures of affordability, and (should the first phase identify suitable measures) a subsequent implementation phase which developed models and applied these measures to sample charging cases.

There is a large and varied literature on the affordability, or ability to pay, for goods. Much of it concerns vital items such as housing, healthcare or heating. These studies have had important practical impacts, for example on the policy on affordable housing provision, or winter-fuel payments to pensioners in fuel poverty. There are also a number of official attempts to assess, for example, how large a fine a court might impose on a person, given their income and outgoings, or how much a family might reasonably be expected to contribute towards its legal costs.

All these studies differ widely in terminology, and in the details such as the assessment unit (for example, families or individuals), the measure of available resources used (for example, weekly income or total wealth), how expenditure on the item in question is defined, and how best to express the results. However, the measures used in these different fields are fundamentally similar.

From this, our study concludes that, although there is no single universally accepted measure, the broad notion of ability to pay is both meaningful and widely accepted, and that implementing ability to pay measures is technically feasible.

Informed by our review, and by discussions with OSCR on the nature of the charges that are of interest, we describe three ability to pay measures that we recommend that OSCR may want to use. Each may be more appropriate in different circumstances, or they can be used together to provide a rounded picture. These measures are all variations on existing measures used in other fields.

All three measures compare some notion of expenditure on the item in question by a family with some measure of the resources available to it.

On the expenditure side, we believe it is better to measure how expensive it would be for a family to reach some *idealised* level of consumption on the item in question, rather than use its actual expenditure. This is a common practice: for example, measures of fuel poverty are concerned with how expensive it would be to heat a home to a healthy temperature, rather than how much the household actually spends on heating. In OSCR's case, we might be interested in the cost of, say, one trip to the theatre a month, or places at a private school for all of a family's children. This approach removes a number of tricky problems, at the expense of having to make a judgement on what a reasonable consumption of the item might be.

On the resources side, we recommend several measures. The one we recommend for general use is disposable income (net (after tax)) income, less unavoidable expenditures on housing, childcare, travel to work costs and fixed costs for dependants). The Scottish Legal Aid system uses such a measure of income, and we suggest borrowing it wholesale. We also suggest using a simple gross income measure in some circumstances.

The relation between expenditure and resources (however these are measured) can be expressed in several ways. The most widely used are simply the ratio of the two, or the difference. We recommend implementing both. Generally, we feel ratios are likely to be more informative for OSCR's purposes, although some authors have suggested the difference to be superior.

Clearly, a judgement on ability to pay, whatever the measure used, cannot be entirely objective. Crucially, OSCR will have to make judgements on how much consumption on the item it is reasonable to impute to each household, and on what relationship between expenditure and resources would be considered 'affordable' (spending is considered affordable if it takes up no more than 10 percent of income or 30 percent of income, for example). This study can help by providing empirical evidence to inform these judgements and by making measures consistent between cases, but ultimately the judgements will lie with OSCR.

To this end, we are building a very flexible affordability model, implementing our three ability to pay measures. The model uses data from the Family Resources Survey (FRS) to provide a detailed picture of affordability for all the families in Scotland.

2. Context

2.1 The Office of the Scottish Charity Regulator

The Office of the Scottish Charity Regulator (OSCR) is responsible for the operation of an effective regulatory framework including the granting of charitable status, maintenance of a public register of charities, the investigation of apparent misconduct and encouraging compliance with the Charities and Trustee Investment (Scotland) Act 2005 (2005 Act). There are currently over 23,500 charities registered with and regulated by OSCR.

2.2 The charity test

In making a decision about charitable status OSCR must assess an organisation against the charity test (sections 7 and 8 of the 2005 Act). The charity test is in two parts:

- the first part states that a body meets the charity test if its purposes consist only of one or more charitable purposes
- the second part states that the body must provide public benefit.

A body must pass both parts of the test.

All new organisations wishing to become a charity in Scotland must pass this test. Charities already on the Scottish Charity Register that were assessed originally by Her Majesty's Revenue and Customs, will also be subject to this new test and will be reviewed over time through a Rolling Review assessment process.

2.3 Public benefit

In assessing public benefit,(part 2 of the charity test), OSCR must consider whether any condition on obtaining the benefit the organisation provides (including the charging of any fee) is unduly restrictive – that is, whether it is excessively restrictive, or restrictive in contradiction of general moral or legal standards, or is not justifiable or reasonable. The existence of a restrictive condition itself can be consistent with providing public benefit and passing the charity test; to become an issue, **the restriction must be undue**.

Unduly restrictive conditions can take many forms; but one key aspect is the **fees charged by individual charities for the services they provide**.

Fees and charges are levied by a wide range of charities and applicant bodies, and can take a number of forms. For example, charitable housing associations charge their tenants rent; some medical charities charge individuals or organisations for the provision of medical procedures; care homes charge for accommodation and different levels of care; some educational charities charge for tuition or other services; and playgroups and after school clubs charge parents for their children's attendance. There is wide variation in the level and structure of these charges, the context in which they are set and levied, and in the relationship between payment and access by individual beneficiaries. The principles OSCR uses in assessing whether fees and charges amount to undue restriction must be capable of being applied across this whole range of organisations and contexts.

OSCR's current process and principles for assessing unduly restrictive conditions (including fees) are set out in its revised 'Meeting the Charity Test' guidance.

OSCR assesses whether a fee or a charge constitutes an unduly restrictive condition by focusing on access to the benefits a charity provides. OSCR assesses whether, and to what extent, access may be restricted. The following principles guide decision making:

- *Transparency is important, whatever the scale of fees* – the charity should be able to demonstrate that its fee structure and arrangements to facilitate access are well publicised

- *There are otherwise no absolute requirements.* It is for the charity to decide in what way it can best ensure that any fees or charges do not unduly restrict access to its benefits, but the overall decision on whether there is public benefit is for OSCR to make

- *Proportionality is a factor in assessment* – in the case of small or insignificant fees less evidence is generally required to assess whether these constitute an undue restriction (though where benefit depends on a small fee regularly paid over a long period, the cumulative result of such fees will be considered). The greater any fee, the more evidence may be needed, and the more important any measures on the part of the charity or others to mitigate the impact of the fee become

- *The scale of any fee will be weighed against the full scope of the benefit(s) provided – those that are being charged for as well as any that are not being charged for*. This means that we will take into account any other benefits the body provides in furtherance of its charitable purposes, for which it makes no charge

- *Where a fee is charged which may affect the access to a benefit, we expect some kind of facilitated access or other mitigation to be in place.* We will assess the cumulative impact of any support to help potential beneficiaries to access charged for benefit (such as discounts, bursaries and fee waivers). We will take account of the extent to which any facilitated access makes provision for people with a wide range of incomes, including low incomes

  Forms of facilitated access which are clearly linked to the financial situation of potential beneficiaries (for instance through means-testing) are likely to have the greatest impact in addressing undue restriction in this context. Other types of facilitated access, based on specific needs or disadvantages of potential beneficiaries (such as local authority funding for specialised types of schooling or care) will also have significant impact depending on the purposes of the body or the context in which it operates. There is no requirement for the profile of beneficiaries of any charity to reflect the profile of the population as a whole, or the profile of the local population.

Facilitated access arrangements, such as support to pay any fees or charges, which come from a body that is not a charity or is not connected with the charity can and do in practice facilitate access to the benefit a charity provides. What matters is that the source of support is reliable, and (most importantly) how much impact the arrangements have on opening up access. Where the charity itself funds the support arrangements we will recognise this as a positive contribution to its provision of public benefit.

Purely personal arrangements, such as support from extended family, or arrangements that result from a personal connection, such as a family or employment relationship, would not normally be regarded as opening up access to the benefit.

- *The cost of providing the benefit that is being charged for is relevant to assessing whether any fee or charge is unduly restrictive* – some benefits are more expensive to provide than others and we recognise that charities must be able to cover the cost of providing benefit. Keeping fees charged to individual beneficiaries low (in relation to the average cost of providing a similar service) by covering the full cost in part from other sources (such as donations) can in some circumstances be an appropriate means of ensuring that fees are not unduly restrictive, though in assessing this regard will still be had to all principles. We will take into account conditions attached to receipt of income from external sources, such as the requirement for matched funding, and the way these conditions interact with fee levels to facilitate access.

These principles provide a clear method for making decisions in this area, however it is realised that more quantitative information about the potential ability to afford fees may also be useful in further informing OSCR's decision making.

OSCR therefore wanted to understand whether it is possible to determine the ability to pay the levels of fees charged by individual charities for the services they provide.

3. Aims and objectives

The objective of the research was to determine the Scottish population's potential ability to afford the fees charged by individual charities for the services they provide.

There were two main strands to this:

(1) Development and appraisal of possible methodologies to examine individuals' and households' ability to afford fees charged by charities (Stage1).

(2) Following agreement of a methodology, modelling ability to pay measures on a relevant Scottish population data set (Stage 2).

4. Methods

The research was split into two phases as outlined in section 3.

For phase 1, we did the following:

1. We conducted a literature review on ability to pay measures

2. Using the results of that review and discussions with OSCR staff, we specified what we believed to be the most appropriate ability to pay measures for OSCR's purpose

3. We constructed a prototype charging model from these specifications, and tested it on a wide variety of charges

4. From this, we produced a critique of our measures, discussing, for example, any likely statistical problems, any data deficiencies, and the practicality of using the measures going forward.

In the next section, we discuss these steps in turn. Together this is presented as an Options Appraisal recommending the modelling of three ability to pay measures.

5. Options appraisal

5.1 Introduction

Perhaps the best way of seeing where we will be going in this study is with a simple example.

Example

Suppose a housing association applies to OSCR. Its main target is young families working in their first jobs, typically earning, say, £2,000 per month. The Association propose to charge £800 per month in rent. Is this affordable? We have:

Income: £500 per week

Housing Cost: £200 per week

There are two obvious questions we can ask:

1. after paying this rent, would a family have enough money left to deal with their other commitments? or
2. does the rent occupy too large a proportion of the family's income?

Let's have a look:

Example Affordability Calculations

1. **Income – Cost =** £500 - £200 = **£300** – they would have £300 left for all other spending.

2. **Cost / Income** 200/500 *100 = **40%** - rents would occupy 40 percent of their income.

These calculations are best known as the **Residual Income** and **Affordability Ratio** approach, and will be discussed further below.

There are at least two important complications to this approach that we will need to address in what follows.

Firstly, two households with the same income might have very different commitments. Most obviously, if one family has children, it will have to feed them, arrange childcare, buy clothing and so on, and so the amount they have free to spend on housing would be less (even if their need for housing would probably be greater). So we might want to adjust our measure of income to allow for this. Aside from childcare, there are many other kinds of commitments that we might want to allow for – debt repayments, transport costs, etc. Indeed, if we were considering affordability of something other than housing we would probably want to deduct housing costs themselves.

Secondly, housing is something everybody must have to live, but many of the items OSCR will be concerned with are not necessities, and may not be used by everyone. Examples might be trips to the theatre or use of a swimming pool. In these cases OSCR probably will not know in advance what someone might spend, and in any case actual spending might not be useful information (if the theatre was completely unaffordable, you would presumably spend nothing on it). So, in making its assessments, OSCR will probably have to assume some level of consumption – a trip per month to the theatre, perhaps – and see how affordable that is.

Is spending 40 percent of your gross income on housing affordable? There is no completely objective answer to this and, as consultants, it is ultimately not up to us to say; ultimately OSCR will have to make a judgement.

We can by carrying out this appraisal however:

- draw out the judgements that have been made by others in examining similar issues in various fields, and their implications

- help make judgements consistent; for example between different ways of charging, different goods with different usage patterns, different family types with different patterns of income and so on

- show how some set of charges would affect the whole population of Scotland, by using large household sample surveys

5.2 Literature review

The first stage in the options appraisal was to conduct a literature review on the themes of affordability and ability to pay. On review it was identified that extensive economics and social policy literature exists on these themes. These studies vary in both their outlook and implementation (even when addressing the same field), however they do provide some conventions about how to construct ability to pay measures and (to an extent) on what amounts are affordable. Therefore although there is no need for OSCR to follow these conventions, there is a good case for not being needlessly different from them, and much to learn from them. The summary of the literature below therefore examines these studies and identifies the key issues for consideration of a model to suit OSCR's context. The studies outlined differ from each other in their outlook and implementation, but nonetheless all studies have to address essentially the same questions. These same questions also need addressed in considering a model for use by OSCR.

Almost all of the studies we examined have an empirical component. One thing that every empirical study we examined has in common is that they consider ability to pay at a disaggregated level – can particular individuals or families afford to buy a house, pay their medical bills or heat their homes? If you ask this question of a representative sample of the relevant population (nation, Local Authority, catchment area, etc) you can build up a picture of aggregate ability to pay. This is not the only way one could go about this, however: a market researcher studying the viability of a new theatre in Dundee, for example, might simply need to compare the average ticket price with Dundee's average income. But for OSCR to do something similar could mean missing out on important information: even if the tickets appeared affordable on average (on some measure or other) there might be many families in Dundee who could never afford them. Administrative measures of ability to pay face similar considerations: for example should justices of the peace impose fines that vary with a persons income or commitments?

Any empirical ability to pay study based in disaggregated information must address the following questions:

1. **Data:** what kind of information is used, or would be needed, to make some ability to pay measure operational?

2. **Assessment Unit:** are results calculated for the individual who benefits, or for the family that person belongs to, or for everyone in the household (which might contain more than one family unit)?

3. **Income/Capacity to Pay Measure:** all measures compare cost or expenditure against some measure of the resources available to the family. How is that resources measure constructed? Is this simply current income? How do you treat taxes and state benefits? What about unavoidable expenditures, such as food and shelter? What if the family has savings or other capital to draw on? What if the family expects income in future to be higher or lower than it is at the moment?

4. **Expenditure Measure:** Are we interested in what families actually spend on an item? If so, what if they cannot afford it? If not, we will have to decide ourselves what a reasonable amount of consumption is: is there some objective basis for this?

5. **Affordability/Ability to Pay Measure:** how should you compare the income and expenditure measures? Broadly speaking, there are two things you can do: express expenditure as a proportion of income (ratio measures) or subtract expenditure from income (residual income measures).

6. **Treatment of very low incomes:** all else equal, and regardless of the definitions used, it will be the individuals or families with the lowest incomes who will be least able to afford the item in question. So results can be very sensitive to the precise treatment of those on low incomes, and in particular to those on or close to the poverty line.

All of the studies described here are of 'big ticket' items: housing, healthcare, fuel, legal costs or fines. These are either vital to survival or have the potential to be so expensive that paying for them could cause serious hardship. By contrast, there are no systematic studies that we can find of the affordability of the kinds of cheaper, arguably less vital items such as entertainment or sports that OSCR also has to consider.

5.3 Ability to pay definition

The notion of ability to pay actually has a long tradition in economics, dating to Adam Smith's discussion of fairness in taxation[1], where he argues that:

> *The subjects of every state ought to contribute towards the support of the government, as nearly as possible [..] in proportion to the revenue which they respectively enjoy under the protection of the state.*

In Smith's view, therefore:

- 'ability to pay' concerns **what is fair or reasonable to pay, even if paying more than that might on some level be possible**

- 'ability to pay' is seen as essentially a proportional measure. **A fair measure is one where everyone pays an equal proportion of their income**.

These two notions will turn up repeatedly in what follows[2].

5.4 Health

There are quite a few recent studies on the ability to pay and fairness in payments for healthcare[3], mostly from researchers associated with the World Health Organisation (WHO) or World Bank.

These studies attempt to capture the extent of "catastrophic" and "impoverishing" payments for healthcare: a "catastrophic" payment is one which takes up an unacceptably large proportion of the family's resources; an "impoverishing" one is one that causes a family to fall below some minimum standard, such as the national poverty line.

The empirical studies use data from country budget surveys. Each year, a random sample of households is questioned on the characteristics of each family member, on how much the family spends, on how much income comes in, and other matters.

The measure of health expenditure these studies use is the amount that the households are actually recorded as spending. This quickly runs them into trouble. When healthcare becomes very expensive, poor families might not be able to buy care at all. Likewise, some households may spend nothing simply because no-one has been ill in the sample period. In such cases, a simple comparison of the (zero) expenditure with (non-zero) incomes might suggest no affordability problem.

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[1] Smith 1776 Part II Section 1 "Of Taxes"

[2] The ATP concept was refined in the 19th and 20th centuries in the light of Utilitarianism and the 'marginalist revolution' to be concerned with the sacrifice of utility rather than income – the Equal Marginal Sacrifice measures. Both measures point to payment of an increasing proportion of income being fait, rather than a fixed proportion.

[3] Murray et. Al (2001), Wagstaff and van Doorslaer (2001), Khun and Manderson (2008)

The WHO study recommends comparing these expenditures against what they term *capacity to pay (CTP)*[4]. In the simple example we gave at the start of this section, we compared expenditures with income, without considering what income really means. Income is in fact a surprisingly slippery concept[5]. For someone earning a regular monthly wage, it may be straightforward enough, but what of the self-employed, who might be paid irregularly, or people temporarily laid off or working short-time?

Further, it can be argued that what we are ultimately interested in is not the family's income over some period, but how much it feels it can spend. So, what of families with large amounts of savings to draw on? Or families with steady incomes now, but who believe things will be much worse or better next year?

CTP has two important features:

1. It is based on recorded total spending rather than total income. In the economics literature, total spending used in this way is sometimes referred to as permanent income. The suggestion is that if a family believes that its current income is temporarily low then it will maintain its spending levels by drawing down savings, and vice versa if it feels its income at the moment is unsustainably high. However the WHO notes that low income families have a limited ability to borrow against future income and so may have little choice but to fund all current purchases out of current incomes. In practice, recorded consumption can be at least as problematic a measure of true income as recorded income, especially over the short periods typically used in large scale sample surveys: consumption can be skewed by purchases of large, occasional purchased items, for example. Further, poverty lines are typically defined using income rather than expenditure.

Point for consideration: This suggests that it is probably better to compare expenditures with recorded incomes rather than expenditures, and to use a measure of income consistent with others commonly in use.

2. Households face unavoidable costs to maintain subsistence, such as expenditures required for food, clothing and shelter, and so the amount of resources actually available to them might be much less than first appears. The WHO recommend that CTP measures are adjusted for this. Wagstaff and van Doorslaer study various ways of doing this and show that you can get very different results by, for example, deducting recorded food expenditures or by deducting the notional cost of buying an acceptable amount of food. Many of the poorest families, closest to the poverty line, would have no disposable income, or less than none, after paying for the notional food expenditure.

[4] Murray et. All 2001 p10
[5] See: Meade (1978), Auerbach 2006

Point for consideration: This suggests that, firstly, we might want to carefully deduct some measure of unavoidable expenses from our family resources measure, and, secondly, that assessing the position of those with the lowest incomes, who might have little or no free income, needs special care.

5.5 Housing

The substance of the debate on housing costs is very similar to the discussion on healthcare, allowing for the different nature of the commodities (notably that health payments may be occasional whereas housing expenditure is usually continuous), but the terminology is different:

- health's 'ability/capacity to pay' becomes 'Affordability'
- workers in the housing field talk about ‘residual incomes' instead of 'impoverishing expenditure'
- 'catastrophic payments' become 'affordability ratios'.

In the UK, debate surrounding affordability originated with concern about the affordability of Housing Association rents, as it is this sector which, since 1988, has been the main provider of new social housing for rent[6]. Around that time, Housing Associations were urged by Government to change their basis for rents setting from 'fair rent for properties' to ‘affordable rents', with the presumption that 'affordable rents' would generally exceed 'fair rents'. This put an onus on the Housing Associations to determine the level of rents their tenants (or potential new tenants) could afford. More recently, with the extension of owner occupation, affordability for owner-occupiers and shared-ownership schemes has become a policy issue in its own right. However, as a matter of policy, governments have not defined affordability[7], leaving the responsibility to housing providers themselves.

Several studies have attempted to clarify the concepts of affordability as it applies to housing.

Hancock[8] applies some basic economic principles to modelling housing affordability. She argues in favour of using a residual income measure and against ratio methods, on two grounds:

1. Hancock argues that ratio methods break down where consumers can freely choose to consume any level of a good. If only the ratio between housing and non-housing expenditures counts, then a household with very low expenditures on both might be judged to be in an affordable state: in the absence of a minimum standard for housing consumption, a tent would almost always count as affordable accommodation. Conversely, someone choosing to live in an expensive house and consequently forgo most other consumption might be classed as being in an unaffordable state, even if they considered

[6] Wilson and Morgan (1998)
[7] Wilson and Morgan P36-37. However, that study notes that in the early 1990s the Conservative government appeared to be using a 35% income ratio internally when assessing the impact of changes to rate support grant.
[8] Hancock (1993)

themselves better off than if they lived in cheaper housing but had higher non-housing consumption.

2. The UK, in common with many other countries, provides a means tested benefit to reduce the cost of housing for low-income families. Housing Benefit (HB) pays 100 percent of rents for those on the lowest incomes (at or around Income Support (IS) levels) and a diminishing proportion of rents for those with incomes above that level[9]. HB is expensive and, since it is withdrawn quite sharply as income rises, contributes to the 'poverty trap' in which low income families in work face high marginal tax rates from a combination of withdrawn benefits and income taxes as their incomes increase[10]. HB also makes it difficult to assess the affordability of rent increases, since net rents are zero for those with the lowest incomes, regardless of what gross rents are charged. Addressing the incentives issue, Wilcox[11] argues that affordable rents should be set at a level which minimises the dependency of low income families in work on housing benefits. He suggests that rents could be set so that a family with one adult in full time work at the level of the minimum wage should not need to depend on housing benefit.

Stone[12] makes a similar case to Hancock in favour of residual income measures, in an American context. The US poverty line includes an allowance for housing costs; clearly housing needs to be removed when comparing the line with residual incomes. Stone argues that this cannot be done consistently, citing a variety of different adjustments to poverty thresholds from different studies, and instead constructs his own poverty line based on standard budgets for low income families[13]. This is not in itself a difficulty in the UK since Income Support eligible amounts do not include a housing component, but we would face a similar problem with items that are notionally included in the Income Support line, such as child care.

There are many empirical and modelling studies of housing affordability in the UK and elsewhere. All use one or other of our residual income and expenditure/income ratio measures, sometimes both, but there are a good many differences of detail between them.

Bramley[14] and colleagues have built a simulation model of housing affordability in Scotland. The study is interesting here partly because it uses the same Family Resource Survey data source proposed for the current study (though in a more aggregated way, and augmented by census and other data in order to improve modelling of individual local authorities). Their model works by matching a flow of new households against the stock of housing estimated to be available to rent or buy in each Scottish local authority. Estimated earnings, house prices and rents are then combined to generate affordability. For a single earner, owner-occupied housing is

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[9] A similar benefit, Council Tax Benefit, reduced local taxes for low income families. There is no comparable benefit for owner-occupiers (though help used to be available to Income Support recipients).
[10] Wilson and Brynn (1998)
[11] Wilcox (1999)]; see also Wilcox and Sutherland (1997)
[12] Stone 2006
[13] Stone 2006 pg 168
[14] Bramley et. al (2006)

affordable if its cost is less than 3.5 times gross annual earnings (0.85x3.5 for two earners). In addition, residual net income[15] after housing costs must exceed 120 per cent of IS Applicable Amount. For rental and shared ownership, housing costs (rent plus mortgage payments) should not exceed 30 percent of net income.

Hancock's study includes an empirical element using household data from Glasgow for 1988/89. She produces a variety of residual income measures: her preferred definition includes a provision for where housing costs appear affordable simply because the household is living in cramped, but cheap, accommodation: housing is unaffordable if either residual income is less than the income support line or if the household appears to be living in overcrowded accommodation (more than 1.5 persons per room) and the excess of residual income above the poverty line seems inadequate to purchase enough housing to avoid the overcrowding.
Local authorities and housing associations carry out surveys to determine the affordability of the housing stock in their area. The Scottish Government and England and Wales publish guidance on how to conduct these surveys[16]. There are a few companies specialising in conducting this research. A typical example was carried out for Aberdeen City Council in 2003 by Fordham research[17]. The study has the following characteristics:

1. Financial information is collected for households in Aberdeen using a specially conducted local incomes survey. A simple measure of net income (excluding housing benefits) is derived from this for each household

2. Housing costs*:* the study imputes the cost of accommodation for each household in the survey, given its composition, in the lowest cost accommodation available, for both renting and owner-occupying. For renters they use the minimum reported private rents. For owner occupiers, the interest payments on an interest only mortgage with some imputations for insurance and maintenance. Reported available savings are deducted from any mortgage

3. Affordability measure**:** this is a simple ratio measure. Housing costs should not exceed 25 percent of net income for those with net incomes below £15,000p.a, or 30 percent for those above £27,500 p.a (with a sliding scale in between).

Using this approach, the study concluded that 22 percent of Aberdeen households could not afford entry-level housing.

All discussion to this point has been about how we measure affordability for an individual person, family or household. If we are using a representative sample of the population, then, regardless of which measure we use, we will need to aggregate the individual results into some measure which gives a useful summary for the population as a whole (or for some population subset of interest).

[15] The precise details of which components are included are not reported
[16] Scottish Government (2005)
[17] Aberdeen City Council (2004). See also Chesterfield Borough Council (2004), Royal Borough of Kensington and Chelsea (2005)

Chaplin and Freeman[18] consider the problems of how best to do this, using techniques first used in the analysis of poverty. Their study is conducted in the Housing context, but it applies equally well to any type of charge. In housing, as in the health example discussed above, the most commonly used aggregate affordability measure is simply a headcount of individuals or families recorded as unable to afford the charge (on a residual or ratio measure, or perhaps some other measure), sometimes expressed as a percentage of all families[19]. But this can lead to perverse results, and in our case perverse incentive for charities. Suppose a charity offers a service (not necessarily housing) with a charge which is discounted for those on Income Support (IS). OSCR judges the service unaffordable on the grounds that, say, 30 percent of families couldn't afford it. The charity responds by abolishing the discount for those on IS and using the money saved to cut the average price. Those on IS are judged to be unable to afford the service before or after the discount. The price for those with incomes above IS levels has fallen, and so some richer families are now able to afford it. So, since fewer families in total are judged to be unable to afford it, cutting discounts for the poor has, in this case, made the service appear more affordable on a simple headcount measure[20]. To guard against cases like this, Chaplin and Freeman advocate using a variant of the Foster, Greer, Thorbecke[21] statistic (FGT) as a summary measure instead of a headcount. The FGT measure weights families by an amount that increases the further below the affordability limit they are, in such a way that it is impossible to improve affordability by transferring costs from a worse-off family to a better-off one[22].

5.6 Fuel poverty

Fuel poverty - 'not being able to heat a home to an acceptable standard at a reasonable cost '[23] - has been topical recently, following recent sharp rises in fuel costs[24]. There are both UK-Wide[25] and Scotland-specific[26] statements of intent to eradicate fuel poverty. For the UK, fuel poverty is defined as follows:

“A household is said to be in fuel poverty if it needs to spend more than 10 percent of its income on fuel to maintain a satisfactory heating regime (usually 21 degrees for the main living area, and 18 degrees for other occupied rooms)”[27].

For the present purposes, three things are noteworthy about this:-

[18] Chaplin and Freeman (1999)
[19] As discussed below, the proposed model only produces headcounts at the moment.
[20] Though slightly less intuitively obvious, the 'affordability/ability to pay gap' measure discussed in the section on healthcare will also fall in this circumstance.
[21] Foster et. Al (1984)
[22] See, for example: http://individual.utoronto.ca/vaguirre/wpapers/decomposable_encyclopedia.pdf for a discussion of FGT indexes in general.
[23] Scottish Government (2002); see especially Part 2: “Understanding Fuel Poverty”.
[24] 'Fuel poverty action plan unveiled' BBC News Online 30th May 2008 http://news.bbc.co.uk/1/hi/business/7426123.stm
[25] Department for Business Enterprise and Regulatory Reform (BERR) (2008)
[26] Scottish Government (2002)
[27] BERR (2008). The Scottish target is the same, except for the income measure used and a target temperature of 23 degrees for the sick and elderly. See: Scottish Government (2002) sections 3.4, 3.6

1. While schemes such as legal aid and child support can be interpreted in this light, this is the only example that we are aware of an explicit Government ability to pay/affordability *target*, in any field

2. Although the name 'fuel poverty' suggests that the target ought to be a residual income measure of some kind, it is interesting that the target is in fact an expenditure/income ratio

3. The numerator is not directly related to the household's actual spending on fuel, rather, it represents a social norm, adjusted for the actual physical condition of each dwelling (the National Home Energy Rating energy rating and number of rooms).

Although the target temperatures have some objective basis (they are based on WHO recommendations[28]), the 10 percent target seems arbitrary: the Department for Business and Enterprise Regulatory Reform (BERR) simply states that 10 percent is a 'widely accepted definition'[29]. Households Below Average Income (HBAI) Income[30] is used as the income measure; this is short-term net household income: that is, income (from earnings, self-employment, benefits, occupational pensions, investments and other flows) after the deduction of direct taxes, council taxes and certain other deductions, for the current period.

5.7 Legal aid

In addition to these statistical and theoretical exercises, there are a couple of instructive official attempts to measure the 'ability to pay' of a family or individual, for the purpose of charging them, or fining them.

The Scottish and England and Wales Civil Legal Aid means test is one of the most comprehensive practical attempts to capture the amount of disposable income available to a family. It is used to determine whether an applicant is entitled to state funding for Civil Legal actions which have to be taken to court. The test takes net income (gross annual earnings, plus benefits and minus direct taxes), and subtracts from it fixed allowances for children and other dependants, actual spending on housing costs and amounts spent a variety of expenses, for example travel to work costs and childcare costs. Those on Income Support are recorded as having no disposable income without the need for a detailed test – they are 'passported'.

There are upper income and capital limits, above which no Legal Aid will be paid, regardless of the cost of the case. If disposable income is between a lower and upper income limit a proportion (1/3rd) of it is deemed to be available to pay for the legal expenses. It is now clear where the 1/3rd proportion originally came from, but it does seem to be widely accepted (the England and Wales and the Scottish system both use 1/3rd, despite being different in many other respects) and it does appear to work, at least in the sense that most of the contributions claimants are assessed for

[28] 'UK Fuel Poverty Strategy' (BERR) November 2001 http://www.berr.gov.uk/files/file16495.pdf
[29] BERR 2008 chapter 1 section 1.1
[30] Department for Work and Pensions/ Office for National Statistics (2004)

are recovered without difficulty[31]. Thus the means test is in essence a test of ability-to-pay – how much a family can be expected to contribute to a legal case, given its income, family structure and outgoings. These tests have been developed over many years and are well established[32]. The claimant must contribute capital above a threshold to the costs of a case.

The system in England and Wales is similar in many respects to the Scottish one. However, in 2001/02 it underwent a reform which replaced many of the allowable expenses with flat-rate amounts and switched to using income for the current month rather than estimated annual income. The allowances and flat rates were set to produce as far as possible the same aggregate eligibility. As noted in the section on healthcare, and in Buck and Stark, this tends to reduce estimates of disposable income for lower-income families and increase them for higher income ones.

From this we have three **points we can consider**.

1. since OSCR will frequently be assessing the affordability of non-essential items such as entertainment; these would presumably be met out of the income left over after essentials are paid for. As such, a measure of disposable (free) income would be very useful

2. the Legal Aid income measure is a widely accepted and precisely specified measure of disposable income, and one which is straightforward to implement

3. however, the example of the England and Wales system shows that different, equally plausible, measures of disposable incomes can be constructed, and these could produce significantly different results.

5.8 Day fines

Structured fines, or day fines, are fines adjusted according to the seriousness of the offence and the financial status of the offender[33]. The fine is based on a proportion of the daily disposable income of the offender. The seriousness of each offence is measured on a unit, or day, scale; the punishment is then a fine of the number of days times assessed daily income. It is argued to be fair on equity grounds, because if both the high-and low-income population are punished with the same jail time, they should also be punished with a proportionally similar income loss. There has been discussion of introducing such a system in Scotland[34]. The day fine system is interesting in this context for at least three reasons:

1. it is based on individual incomes and circumstances, rather than being family or household based

[31] Scottish Legal Aid Board 2005 pp24
[32] "Buck and Stark (2003)
[33] Bureau of Justice Assistance (1996)
[34] Scottish Government (2004) Section 32.50

2. As we have seen, the measures we have examined so far do not work well for families on very low incomes, at or near the poverty line. By contrast, the nature of the criminal justice system ensures that unit fines are frequently applied to people with low incomes, with apparent success

3. It is inherently a short-term measure.

The precise method of calculation varies across jurisdictions[35]. In Staten Island, USA, the offenders' post-tax income is divided by a percentage reflecting the number of dependants: 15 percent for no dependants, an additional 15 percent for a spouse, 15 percent for a first child and 10 percent for each subsequent child. The daily fine is then 2/3rds of the remaining income for those with incomes above the poverty line, or ½ the remaining income for those below the poverty line[36]. In Iowa, 60 percent of the offender's income is allowed for housing and other expenses; the fine is then 60 percent of remaining income for a single person, 50 percent for a couple, 45 percent for a couple with one child and 5 percent less for each subsequent child. Note that since all the deductions in these cases are percentages of net income, the net effect of all these deductions is simply that the day fine is a percentage of net income, with the percentage falling with the number of dependants in order to reflect the amount of income the individual is taken to have available over and above what is needed to meet housing and other immediate needs – an expenditure/income ratio.

A variety of approaches are used in cases where the individual has no income of their own. One approach is to fall back on family or household income. Another is to impute income based either on the minimum wage or on the benefits the individual would be entitled to should they claim individually[37].

Sometimes, OSCR might want to assess the ability to pay of an individual rather than a family or household, for example if it is clear that the individual is the sole beneficiary of some provision. The example of day fines shows that it is feasible to assess the ability to pay of an individual member of a household, but only on very strong assumptions.

5.9 Evaluation

What conclusions can we draw from all these different cases?

Firstly, it is clear **that measures of 'ability to pay' are widely used and widely accepted**. They are used to inform decisions in fields as diverse as mortgage lending, rent setting, access to legal services, health policy and criminal justice. However, the very different natures of the items being modelled and the apparent lack of communication between workers in different fields has produced studies which differ widely in approaches and definitions. It is a pity from our point of view

[35] Bureau of Justice Assistance (1996) p16-17
[36] It is unclear exactly what 'below the poverty line' would mean in practice, given that poverty is assessed on family unit income, but only the offender's individual income is recorded by the fine-setting authorities.
[37] Bureau of Justice Assistance (1996) p16-17

that there has been no systematic study modelling ability to pay for the kinds of smaller, often more prosaic items that OSCR can be concerned with.

We shall discuss what we have learned under each of the headings we listed in section 5.2 above.

5.9.1 Data

- **What kind of information is used and what is most relevant/appropriate to make the model work?**

It seems clear that we should follow the great majority of the studies discussed above and base any empirical measure of affordability on a detailed representative sample of the Scottish population. The survey with the largest sample size and the most detail on incomes and demographics is the Family Resources Survey (FRS). The FRS has limited detail on what the households spend, confined to housing expenditure, travel to work, childcare and a few others. But if we reject the idea of using recorded total expenditures as an income proxy, and we go for the idea of using imputed rather than actual spending on the items in question in our assessments (we return to these points below), then those are the only recorded expenditures that we will need. So the FRS seems a good choice.

5.9.2 Assessment unit

- **Are results calculated for:**
  - **the individual who benefits**
  - **the family that the person belongs to**
  - **everyone in the household (which might contain more than one family unit)?**

Individual: - The Unit Fines example shows that it is possible to construct a simple individual-based ability to pay measure which is widely accepted as fair. This could be useful, in particular if it were desired to test if an item was affordable to the individual who benefits. However, it requires some strong assumptions about how incomes in a family are shared (most likely, that they are *not* shared) and, since it is likely that many individuals will have zero incomes, we will probably have to fall back on using family or household incomes in many cases, or perhaps impute some notional incomes.

Benefit Unit / Household Level: - All the rest of the studies and official measures discussed above use incomes (or consumption) aggregated to benefit unit level or household level. This seems generally the most sensible option. It seems reasonable to expect a good deal of income sharing within a benefit unit, and, generally, we would want to study the impact of a charge on the person who pays it, and the unit he or she belongs to, rather than simply on the beneficiary.

5.9.3 Income measure

- **How are the resources available to the family measured?**
  - **Is this only current income?**
  - **How are taxes and state benefits accounted for?**
  - **What about essential expenditure, such as food and shelter?**
  - **Are savings/other sources of capital included in the calculation?**
  - **How would changes in income be expressed?**

The studies above take very different approaches to their measures of the resources each family has available to it**.**

We have seen that the healthcare studies use consumption as a proxy for 'permanent income'. This is quite an appealing idea, but has a number of problems:

- it assumes that families can borrow easily, and that, when they do so, they act rationally and with a reasonably accurate forecast of their future income and assets. This may well not be true, especially for low-income families with limited access to credit. At the limit, if a family has no access to credit on reasonable terms and few accumulated assets, current consumption is determined by current incomes
- the Expenditure and Food Survey (EFS), the main UK dataset that includes suitable expenditure data[38], is approximately a quarter of the size of the Family Resources Survey[39] that we would otherwise use (7,000 UK households per year as against 28,000, with1,100 Scottish households per year against 4,500 in the Family Resource Survey)
- consumption data as recorded in EFS has its own problems, in particular with consumption and use of durables[40], hire-purchase, credit card payments and the like.

Most of the other studies discussed above use some variant of short-term net income. The Fuel Poverty Series uses the HBAI income series. This is a good choice because it is very widely used; a great deal of work has been invested in getting all the details consistent (such as the computation of self-employment income and the imputation of income from assets). Precomputed HBAI datasets are available to us. However, HBAI income is not a measure of how much a household actually has available to spend, since much of its income may be committed to childcare, travel expenses and the like.

The Civil Legal Aid disposable income measure has two appealing features:

1. it is official, well established, precisely specified and widely accepted

[38] http://www.statistics.gov.uk/ssd/surveys/expenditure_food_survey.asp
[39] http://www.dwp.gov.uk/asd/frs/
[40] See, for example, Kay, J. A. & Keen, M. J. & Morris, C. N., 1984. Estimating consumption from expenditure data] [Journal of Public Economics Elsevier, vol. 23(1-2), pages 169-181.

2. its notion of disposable income, with allowances for unavoidable expenditure on children, housing, travel to work and so on, is very appealing. There is a good case for arguing that the 'disposable income' constructed in this way is an indicator of the resources the household will have available in the short term for non-essential spending.

The allowances available would need careful handling. There is a potential for double counting; it would be necessary, for example, to remove the allowance for childcare expenditures when considering the affordability of childcare. As noted above, the England and Wales system removes many of the Scottish system's allowances against actual expenditure and replaces them with flat rate amounts. It is probably worth exploring the effects on affordability of switching to an English style system.

5.9.4 Expenditure measure

- **Are we interested in what families actually spend on an item? If so, what if they can't afford it at all? If not, we will have to decide ourselves what is a reasonable amount of consumption: is there some objective basis for this?**

It seems clear from the discussion above that it would be wrong to use recorded expenditures on the goods or services in question in our ability to pay measures. That leaves us having to impute some ideal, or minimum, or typical, level of consumption on each household. We have seen that for some important goods, such as housing and fuel, there are minimum standards that can be used for this. But for other items, there seems no objective standard: there is no minimum acceptable number of theatre or museum visits, for instance. But since, as we have seen, any ability to pay measure is inherently normative, this is not an overwhelming problem; what is most important is consistency between cases, so, for example, all theatres were evaluated against the same number of visits per household per week. A modelling system can help ensure this.

5.9.5 Ability to pay measure:

- **How do you put the income and expenditure measures together? Broadly speaking, there are two things you can do:**
  - **express expenditure as a proportion of incomes (ratio measures)**
  - **subtract expenditure from income (residual income measures)**

We have seen two main measures in use: expenditure/income ratios and residual incomes. Two of the above studies make an explicit argument in favour of residual incomes and against ratios.

However, we believe that there are several problems with residual income measures:

- If residual incomes have to be below some poverty line before an item is deemed unaffordable, this implies that *all* income above that limit can be spent on the item without the persons' poverty status being affected, and, likewise, that 100 percent of any increase in income can be spent on it. This fits poorly with how people in fact behave. Increases in income are typically spread among commodities. Few people would want to spend their next pay rise entirely on increasing their mortgage, for instance

- Related to this, residual income measures are very sensitive to the precise assumptions about the poverty line, the calculation of income, which expenses to allow and so on, especially for those with incomes close to the minimum

  (As a simple example of this, consider the disposable income calculation Stone recommends mortgage brokers use in place of their usual income ratio tests (table 2 p176). Stone assumes all net income above a fixed non-housing poverty of $27,200 line would be available to fund a mortgage. This leads to a position where a 32 percent increase in gross salary (from $40,000 to $52,000 p.a.) would imply a 210 percent increase in residual income available for mortgage payments (from $5,400 to $16,700p.a.))

- It would require OSCR to specify a poverty line, however applying a poverty line is a difficult area, given that Social Security officials who deal with these issues are reluctant to identify any particular income level as an official poverty line

- Finally, residual income measures seem a particularly poor fit when considering the affordability of relatively low cost, non-essential items. It might be hard to argue that a charge for a theatre ticket, for example, could drive a family into poverty, especially if the proposed charge is for a new service.

The Wilcox/NHF measure – that rents are affordable if young working families can afford them without recourse to Housing Benefit – is probably not worth pursuing, except perhaps for compatibility with existing studies. There are no obvious analogues of this measure in other fields, so it is not generally usable. Even within housing, the measure is irrelevant to other groups such as pensioners or the unemployed, and to owner occupiers. In any case concern with the cost and incentive effects of housing benefit has arguably been overtaken by events, with tax credits becoming the major contributor to high marginal tax rates for young working families[41].

By contrast, expenditure/income ratios would seem a good fit for many of the kinds of cases OSCR will have to consider. Hancock's (and later Stone's) two main objections don't seem conclusive. Her point that combinations of very low spending on the good in question and very low incomes would seem affordable if they were in the right ratio is not relevant here, since we will be using imposed ideal expenditure levels rather than recorded actual expenditures. Her claim that ratio methods have no economic content seems weak, too: as we have seen, ratio measures have a reasonable economic interpretation in terms of proportional sacrifices.

There are other merits to expenditure/income ratios:

[41] See Institute for Fiscal Studies *Fiscal Facts* http://www.ifs.org.uk/ff/indexben.php

- results based on expenditure ratios are likely to be more robust to minor changes to assumptions about incomes, expenses and the like, especially for those on low incomes

- the wide use of ratio measures in Housing, Fuel Poverty and (implicitly) in Legal Aid and Day Fine evaluation make them the *de facto* standard, and there is a strong case for OSCR simply following standard practice where it exists, unless there are very obvious flaws in such practice. The use of a 10 percent income ratio to express fuel poverty is particularly striking in this regard

- its uses as a standard measure by Mortgage lenders indicates that it is seen as a good indicator of affordability in the sense of being a good predictor of those households likely to default.

5.9.6 Treatment of very low incomes

- **How should low incomes be treated as these are the most sensitive to variation in income and expenditure?**

This is one of the most vexing practical problems that we came across. Households with incomes at their poverty line will, almost by definition, be unable to afford *any* extra expenditures. Modelling ability to pay for households with incomes a bit above the poverty line can give very different results depending on the exact assumptions used – how incomes are adjusted for inflation, the treatment of tax payments, the definition of the poverty line itself and so forth. There is essentially no right answer here. Many of the studies skirt over this or assume it away (in the case of some housing studies by only considering affordability for young employed households, for example). Only the health studies really wrestled with it, but these did not come up with any solution.

Our recommended model implements the simplest possible solution. It simply removes from consideration those modelled to have incomes at their poverty line, as it is assumed that they cannot afford.

5.9.7 Aggregation

As we have seen, we can produce an aggregate ability to pay measure by simply counting up all the families who appear unable to afford some charge – the headcount measure. We've also seen that if OSCR, as a matter of policy, assessed the ability to pay using headcounts, charities could in some circumstances do strange things to make that which they charge for appear more affordable, such as *cutting* their concessions to the very poorest groups.

The Foster, Greer, Thorbecke (FGT) measures advocated by Chaplin and Freeman, discussed above, are such that a charity can never improve its measured affordability in such a contrary way. Their main drawback, however, is that they are somewhat unintuitive. The recommended charging model produces simple headcount measures; it would be good to retain these along with the FGT measures simply because headcounts are so easily understood.

5.9.8 Recommendations

From the above, we can make the following recommendations:

- we believe that it is feasible to construct ability to pay measures that would be widely acceptable, using representative samples of the Scottish population

- there is no single measure of ability to pay that is best in every case

- the measures we recommend will often best be used in combination with each other

- the empirical work we recommend will not remove the need for OSCR to make value judgements, but it will help to make judgements consistent between cases

- we recommend using a disposable income measure for most cases – that is a measure of what resources a family would have free after all essential needs have been met; the Legal Aid disposable income measure seems a good candidate; if possible, we suggest making the measure of income representative of the resources available to the household in the long run

- generally, we suggest aggregate incomes and expenditures to the benefit unit level, or household level

- we suggest using imputed consumption of the good in question, rather than actual expenditure; use objective minimum acceptable amounts where these exist (fuel and housing, for example)

- generally, use expenditure/income ratios as the main measure of ability to pay

- use residual income measures, compared to a poverty line for cases where the good in question is an absolute necessity and expenditure is large

From the discussion above, we propose that OSCR implement three measures of ability to pay, and we will build a model which operationalises these measures.

1. **Residual Income Amount:**

    - **What is it?** The residual income measure subtracts the charge of the charity from the family's net income and compares the result to their poverty line
    - **What does it mean?** In simple terms, would paying for the item in question drive the family into poverty; more generally, how much money has the family left after paying for it?
    - **What is it good for?** Assessing the affordability of 'big ticket', absolutely necessary items, such as housing or possibly nursing care
    - **What are the drawbacks?** For low income families, it is very sensitive to the precise assumptions made. It tells you little about family's already at or below the poverty line. It seems an uninteresting measure for small, non vital items

- **Who uses it?** Some housing affordability studies. A variant using consumption in place of income is used in some World Bank and WHO studies of health provision.

2. **The ratio of costs to gross income:**

- **What is it?** This simply divides the expense by the household's gross income. Variants of this are commonly used in assessing the affordability[42] of housing
- **What does it mean?** Does spending on the item take up an unacceptable proportion of the families pre-tax earnings?
- **What is it good for?** Mortgage providers use a measure like this to screen out families who are likely to default on their mortgages. For OSCR's purposes it may not be especially useful in itself, but, in the housing case, there may be merit in showing that you have considered affordability in a similar way to how housing associations or the Scottish Government might look at it. It might also be a useful fallback measure if some item had to be assessed using a dataset with limited income information
- **Who uses it?** Mortgage lenders and others assessing the affordability of housing
- **What are the drawbacks?** The income measure is crude and may bear little relation to how much income a family actually has available to it.

3. **Expenditure/Disposable Income Ratio**

- **What is it?** this applies the measure of 'disposable income' used for the Scottish Civil Legal Aid means test to produce a measure of the resources a family would have available after meeting essential costs (housing, childcare, work expenses and the like). As with the gross income measure, the costs of the charity's charges are then divided by this
- **What does it mean?** Does the charge take up an unacceptable amount of the money a family has left over after meeting all its essential bills?
- **What is it good for?** This is our preferred measure. It produces easily interpretable results even for low-cost, non essential items such as access to entertainment or sports; it is based on a widely used, generally accepted means test whose purpose seems close to the task at hand. Expressing the result as an expenditure/income ratio seems the best choice for most cases. It is relatively simple to operationalise
- **Who uses it?** Most ability to pay studies use some form of expenditure/income ratio (though without the definition of income used here), including studies of healthcare, housing, and the official fuel poverty statistics series. See section 2 above for more details
- **What are the drawbacks?** Some authors claim that expenditure/income ratios are poor measures of affordability; however, we argue above that this lacks force in many cases. The means-test may change significantly in

[42] As discussed in section 2 above, “Affordability” is the term generally used in housing studies; OSCR prefers the term “Ability to Pay”.

future, and a variant is in operation in England and Wales which might well produce rather different results.

6. Conclusions

We have shown that, although there is no single universally accepted measure, the broad notion of ability to pay is both meaningful and widely accepted, and that implementing ability to pay measures is technically feasible. We describe three ability to pay measures that we recommend that OSCR adopts: each may be more appropriate in different circumstances, or they can be used together to provide a rounded picture. These measures will be implemented in a flexible ability to pay simulation model, intended to be a useful tool in OSCR's everyday work.

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Glossary

1. **Ada** – A computer programming language originally designed for the US Department of Defense. All the programs that generate our affordability estimates are written in Ada.

2. **Affordability Ratio** – the ratio between a payment and available income. A common term in affordability studies.

3. **Catastrophic Payment** – a term used in World Bank and WHO affordability studies. Payments that take up an unacceptable proportion of a family's income. See also affordability ratio.

4. **EFS** – Expenditure and Food Survey – an annual sample survey of the incomes, expenditure, food consumption and demographic characteristics of the UK population. Compared to the FRS (see below), the demographic and incomes questions are similar but sections are added on spending and food consumption, and the sample size is smaller. Formerly known as the Family Expenditure Survey (FES).

5. **Empirical -** based on observation or measurement.

6. **FRS** – Family Resources Survey – an annual sample survey of the incomes and demographic characteristics of the UK population, conducted by the Department for Work and Pensions. Our main data source for the empirical sections.

7. **Impoverishing payment** - a term used in World Bank and WHO affordability studies. A payment that, if made, would cause a family to fall below some minimum standard, such as the national poverty line. See also residual income.

8. **Imputation -** the act of assigning a value to something which has no recorded value, or assigning a value different to what has been recorded;

9. **Normative -** Normative Economics pertains to questions about what sort of policies ought to be pursued. Antonym of Positive Economics.

10. **Numerator** - the top part of a fraction where as Denominator is the bottom part of a fraction;

11. **Residual Income** – the amount of income a family has left over after paying for something. A common term in affordability studies.

12. **WHO Bank** – World Health Organisation (http://www.who.org). WHO is the directing and co-ordinating authority for health within the United Nations.

13. **World Bank -** The World Bank provides financial and technical assistance to developing countries around the world.