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### The monetary approach to poverty: a survey of concepts and methods

Caterina Ruggeri Laderchi\*

*This paper will briefly survey the monetary approach to poverty measurement – a set of techniques and methodologies, adopted mostly by economists, based on the identification of poverty with a shortfall in a monetary indicator and the “objective” derivation of a poverty line.<sup>1</sup>*

*In order to describe these methodologies, the underlying rationale and the factors which have contributed to the current shape of this “approach”, we will start by discussing the origins of such an approach. This will allow us to substantiate our claim about the peculiar and measurement driven nature of this approach to the definition of poverty, as well as critically to assess the extent to which the “objectivity” of the methods makes the results immune from value judgements. Further, it will allow us to identify some crucial features of this approach, which will be discussed with respect to current developments in the literature. A particular emphasis will be placed on identifying the key issues which need to be addressed in the context of comparisons across investigations*

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\* Queen Elizabeth House, University of Oxford

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<sup>1</sup> As will be discussed below this definition consciously omits other important ways (both within and outside economics), in which monetary indicators of poverty have been constructed in order to focus on what can be considered “mainstream poverty measurement”.

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## Introduction

This paper will briefly survey the monetary approach to poverty measurement – a set of techniques and methodologies, adopted mostly by economists, based on the identification of poverty with a shortfall in a monetary indicator and the “objective” derivation of a poverty line.<sup>2</sup>

In order to describe these methodologies, the underlying rationale and the factors which have contributed to the current shape of this “approach”, we will start by discussing the origins of such an approach. This will allow us to substantiate our claim about the peculiar and measurement driven nature of this approach to the definition of poverty, as well as critically to assess the extent to which the “objectivity” of the methods makes the results immune from value judgements. Further, it will allow us to identify some crucial features of this approach, which will be discussed with respect to current developments in the literature. A particular emphasis will be placed on identifying the key issues which need to be addressed in the context of comparisons across investigations.

### **The "monetary approach" as an analytical category.**

At the outset of our critical review we need an explanation of what we mean by "monetary approach" to poverty measurement. The category brings to mind the identification of poverty with a shortfall in a monetary indicator, as generally adopted by economists in measuring poverty. However, we want to go beyond a narrow discussion of methods and issues arising when performing such an identification to encompass a discussion of concepts and values. Though economics does not provide us with a definition of poverty, relevant definitions and values are embedded in the methodology.

The main problem with the identification of the "monetary approach" as an analytical category is that different conceptual reconstructions might underlie similar practices, so that equating them with one homogeneous category is not only artificial but possibly even misleading. Nevertheless, adopting the common denominator of a measurement based on monetary indicators is useful for comparative purposes. It reflects, in fact, the apparent homogeneity of current mainstream practices, and the underlying tension between theoretical complexity and diversity, on the one hand, and the simplicity of adopting standard measurement practices on the other. Further, adopting a definition emphasising measurement captures the greatest "selling point" of the set of measurement practices we are referring to, especially to economists, as will be illustrated below. We are aware, however, of the fundamental ambiguities underlying this approach, and we will point to these in the following discussion, highlighting where they arise and where they have bearing on the kind of results obtained.

### **Monetary poverty: the undefined measurable thing.**

The pioneering of empirical social investigation, in Britain as elsewhere (Stigler 1954), owes much to poverty, or rather to the philanthropic or intellectual interest that poverty triggered. While first examples of “political arithmetic” started appearing at the end of the 17th century, the identification of poverty as a problem (Marshall 1981), and one to which a scientific method could be applied, gave impetus to large scale efforts of fact gathering at the end of the 19th century – a time when both sociology and economics were starting to take their current shape.

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<sup>2</sup> As will be discussed below this definition consciously omits other important ways (both within and outside economics), in which monetary indicators of poverty have been constructed in order to focus on what can be considered “mainstream poverty measurement”.

Some important features of current poverty analysis already emerged in those early studies [see more below]: these include the absence of a definition of poverty, closely linked to the emphasis on methodological issues, and the at times ambiguous relation with political values (searching for objectivity on the one hand and wanting to inform political processes on the other). For example, when Charles Booth gave his first address to the Royal Statistical Society, whose success led him to the compilation of the massive "Life and Labour of London" study, he affirmed that "The *a priori* reasoning of political economy, orthodox or unorthodox alike, fails from want of reality. At its base are a series of assumptions very imperfectly connected with the observed facts of life" (Booth 1887). What he thought was needed was "a large statistical framework which is built to receive accumulations of facts out of which is at last evolved the theory and the basis for more intelligent action" (Simey et al. p. 77).

We will discuss Booth and Rowntree's pioneering studies at greater length below, but it is worth noting here that by emphasising the statistical, orderly and scientific, aspect of the analysis, for them the definitional issue became one of creating a method of identifying the poor which would lend itself to quantification and would make objective analysis possible. The deeper definitional issue about what poverty is, as opposed to what poor people do, or have, or are, which makes them identifiable and countable, was not raised. In the study of a stratified society, lifestyle<sup>3</sup> was a powerful identifier of the lower classes, and poverty had something of the obvious. The focus of investigation was not therefore on how to identify the poor but rather on "the physical condition and moral character of the working classes" (Kent, p. 61), and in those an understanding of the immediate causes of poverty was to be found.

These initial contributions started a fertile tradition of poverty studies which, when consolidated later with the new developments in statistics (Bowley's contributions on sampling and Pearson's and Yule's contributions on correlation representing the major ones) provided a rather standardised way of measuring poverty empirically. The measurement rather than the social analysis part of this approach, though developed outside economics, suited economists well as it was compatible with the welfarist roots of microeconomic analysis. And until the breakthroughs in the measurement of inequality were applied to poverty indices (Sen 1976) no major conceptual change affected the way economists measured poverty.

While such a continuity might appear as surprising, it is even more surprising that almost a century had to pass without any systematic analysis within economics of the concept of poverty underlying standard practices of poverty measurement. When it did appear, in various contributions by Sen on the welfaristic roots of economic analysis, it was in critical assessments which were more constructive at the philosophical than at the empirical level. Though there are examples of authors who have used some definition of poverty as an explicitly economic category (e.g. Lipton's work on ultra-poverty, or Dasgupta's version of the efficiency wage theory) such conceptualisations have not been absorbed in the core of mainstream economists' poverty analysis.

Paradoxically, however, though poverty is a peripheral concept in economics, without any independence from what is measured, i.e. the shortfall in a monetary indicator, the way economists measure it is considered orthodox and is most influential in influencing policy.

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<sup>3</sup> On the debate on whether the poverty definition of poverty adopted by Booth and Rowntree was based on life-style (hence relative) or absolute see Veit-Wilson 1986.

**In the beginning there were rich men ...**

Though the first budget studies which appeared in England in the 1790's arose from "the distress of the working classes at this time" (Stigler 1954, p 95), the two major empirical studies of poverty appeared about a century later and are linked to the names of Charles Booth and Seebhom Rowntree. Both men appeared to share a modern belief in an objective scientific method to guide action for poverty reduction, though their works were methodologically quite different. The influence they exerted, especially the latter, on current practice of measuring poverty make a more thorough description of their work of interest.

Charles Booth's first study of the London's East End (1887) was prompted by widespread rioting in the city by the poor, and by the desire to check whether the claim made by socialists that one third of the population was living in poverty was indeed true (which could not be checked otherwise as there were no data available). In the tradition of Royal Commissions of enquiry (Bulmer 1985) Booth relied on the information provided by "informants" rather than by direct enquiry. In his case the informants were "School Board Visitors".<sup>4</sup> From his initial analysis of the East End, Booth proceeded to analyse the whole of London, moving from living conditions of the people to an analysis of the industrial structure as well as of religious beliefs and other social influences and their impact on morals and behaviour. This work, which took 17 years and an equal number of volumes, expanded in order to find the ultimate causes of poverty, beyond the "immediate" ones Booth had identified (which he classified as "questions of employment, of habit and of circumstance"). Though unsuccessful in this quest, Booth produced a huge collection of data documenting all aspects of Londoners' life. He also produced a set of detailed maps, some in which different colours documented the social conditions prevailing in the streets, some providing details on the schools, bars, places of worship.

While this huge compilation clearly went beyond what has become poverty analysis, it is of interest to note how Booth faced the issue of poverty in a more narrow sense. He identified 8 social classes, which he labelled with letters: A was the "lowest depths", B the extremely poor, C and D the poor. Of particular interest is that "classes E and upward were above 'the poverty line'" (Marshall 1981, p 37). It has been recently been suggested that Booth, generally credited with the invention, derived this standard from what district level school authority adopted to waive pupils fee (Gillie 1996).<sup>5</sup> This new contribution could explain why the standards adopted by Booth (between 18 and 21 old pence a week for a family with six children) appeared to be higher than those at which poor relief (aimed only at the most destitute) was granted.

Whether Booth invented the poverty line or not, it is undisputed that "poverty for him, as for his predecessors, was not a matter of income only, but of the conditions attaining in the home and of the nature and regularity of employment. He was interested in the qualitative differences between the classes. Class A's members were not merely sunk in poverty; they inhabited a world apart. [...] And he believed the class to be largely hereditary. It was, in other words, engulfed in a 'culture of poverty'. (Ibid.). Factors like "aspiration" and the standards adopted in defining one's own condition therefore played a role in differentiating the classes more than the "poverty line itself".

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<sup>4</sup> School Board Visitors were officials whose position had been instituted by the Compulsory Education Act in 1877 to keep detailed record of the households where poor children lived and make sure that they were receiving a proper education.

<sup>5</sup> The way those standards was derived seem not to have been very "scientific" – in the sense of Rowntree's primary poverty line discussed below. Further, it is interesting to realise that though mention of the poverty lines can be found in the minutes of the meetings of various school authorities, their existence was kept secret to prevent people from declaring lower incomes and have fees waived.

Explicitly referring to Booth's work, but with a number of different methodological solutions, was Seebohm Rowntree's first survey of York. This study, undertaken in 1899, is generally described as the first scientific study of poverty, mostly because of the high level of sophistication applied in deriving a "modern" poverty line, and in particular in estimating the minimal food requirements for maintaining efficiency on the basis of recently calculated nutritional standards. Such minimal requirements, together with those necessary for the purchase of clothing and rent, were added up to identify a poverty line, so that households whose income level fell below it were deemed to be in "primary poverty". As Rowntree's data were collected by interviews (about two thirds of York's households i.e. those living in areas identified as residence of the working class population were interviewed) and the investigators were asked to note down which households appeared to be living in "obvious want and squalor", a further concept of poverty emerged: "secondary poverty", i.e. the poverty of those who, despite having enough income to maintain minimal efficiency appeared to be living in poverty.

Though the methodology adopted to measure primary poverty came to dominate Rowntree's later analysis by Rowntree, it has been convincingly argued (Veit-Wilson 1986) that the emphasis that it was given by contemporaries and successors alike did not reflect Rowntree's original intentions. The poverty line he derived was not meant to be a normative device prescribing intended patterns of expenditure. It was rather a heuristic device to show that, contrary to long held beliefs, not only improvidence and vice but also low incomes accounted for the poverty of the working classes. As such, the line that he devised was meant to be based on conservative estimates, for example choosing to price the required nutrients according to a diet even less appealing than the one offered to poor people in workhouses. Rowntree's emphasis throughout his book is on poverty *overall*, to which he refers without any further qualifier as a situation in which nearly 30% of the population of York was to be found. A further point which reinforces this view of Rowntree's work is that he went to great lengths to show that his results were comparable with Booth's London's study (i.e. by publishing a letter from Booth stating as much), and indeed they both adopted a concept of poverty as something externally perceived. The aim of this way of proceeding was to challenge common perceptions about the distribution of poverty within England, showing that "the problem of poverty is no longer associated with a pathological capital city but becomes the problem of an urbanised nation" and so signalling "an important shift in the perceptions of poverty as a social problem" (Hennock 1987).

It should also be noted that, despite making a conceptual distinction between primary and secondary poverty, e.g. examining their causes separately, he maintained that both concepts were, though in different degrees, of a relative nature, the former because "the point at which "primary" passes into "secondary" poverty is largely a matter of opinion, depending on the standard of well-being that is considered necessary" (Rowntree 1901, p. 141)<sup>6</sup>, and the latter because it clearly depended on the standard of lifestyle held acceptable by the investigators.

### **... and the legacy of their "fact based" methodology.**

Booth and Rowntree's legacies have been quite different. While Booth impressed the public opinion of his times for its wealth of information and managed to enlarge the terms of the debate on the "Poverty Question" beyond a moral interpretation of poverty (Marshall 1981), it is Rowntree's which is generally acknowledged as the first scientific study of poverty. Both authors, however, were aware of the importance of their own contributions whose undertaking they financed themselves, as well as of the methodological and informational void in which their studies were taking place. As these studies did a lot to start filling that methodological void, a closer look at some of their

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<sup>6</sup> Which is why he tried sensitivity analysis of his results with alternative poverty lines.

methodological choices goes some way in explaining current practices in the monetary approach to poverty measurement.

From the methodological point of view, despite the differences illustrated above, some important similarities can be identified. Both Rowntree and Booth adopted definitions of poverty which were based on the different life-style of the poor, as externally assessed, against a standard on which there was “general agreement” (Veit-Wilson 1986, p. 81), though they showed different degrees of sensitivity to the qualitative differences between classes. Both also shared a faith in objectivity and in the importance of the scientific method in elucidating *facts*, (almost touching when considering the amount of literature which has been dedicated to eviscerating the beliefs, values and stereotypes which their definitions reflected or contributed to create!). Rowntree and Booth were united as well in adopting an individualistic conception of poverty. In their static view of a stratified society they did not investigate the social dynamics of poverty, inclusion or exclusion from society, nor the forces behind them. The poor were part of the lower classes, and their poverty was seen as a series of repeated individual circumstances rather than the outcome of some social process. Though their poverty was seen as a problem to be solved, denoting a break with a previous tradition stressing its functional role (Marshall 1981), also echoed in Marxist thought, it was a problem of a series of individuals.

Booth and Rowntree also had in common the fact of living at a time when significant breakthroughs were being made in important fields of statistics, without their paying much attention to this. Some of Booth’s evidence changes interpretation when correlation coefficients are calculated, as proven by Yule (Yule 1895), at the time collaborating with Pearson on the development of the correlation coefficient, who in his paper reanalysing some of Booth’s results made two major contributions to statistics.<sup>7</sup> The other major development of which they were not aware was Bowley’s work on statistical sampling. Rowntree surveyed the entire working class population<sup>8</sup> in two of his three York surveys. Analysing the survey of 1935, however, he was able to test and become convinced of “the reliability of social statistics based on the sampling method” by drawing random samples out of the population and comparing the accuracy of the statistics with the ones he had already calculated.

While unaware of new developments (Selvin et al. 1985), Rowntree and Booth both showed a high degree of flexibility (by some interpreted as lack of accuracy) in making do with the kind of information and instruments which were available. Both adopted an eclectic approach: Booth by adopting a variety of approaches (e.g. producing a variety of tables with the same data presented in different ways) believing in the benefits of cross-checking (though not always, Kent 1985); and Rowntree in the kind of data that he used (mostly from questionnaires, but also from neighbours and other informants; using wage data from his own factory for his employees but also using estimates of wages by trade and other sources to interpolate the gaps).

One of the issues which has strongly characterised the interpretation of the work of Booth and Rowntree has been the debate on the extent to which their analysis was influenced by Victorian values. The influence of Victorian values has been seen, for example, in their explanations of poverty based on moral weaknesses of the poor (betting and drinking as well as thriftlessness – this last one only for women!), in Rowntree’s concern with the plight of poverty preventing the creation of a healthy army and labour force, and in the imaginative solution for poverty offered by Booth (deporting the poor into “ ‘industrial or labour colonies’ ... to be ‘well housed, well fed, and well

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<sup>7</sup> “First he showed that the coefficient of correlation need not be tied to a bivariate normal distribution as everyone had thought ... Yule’s second contribution ... was to present the formulas for multiple regression and correlation, but without any empirical example” Selvin (1985, p 74-75).

<sup>8</sup> Defined as households not keeping servants.

warmed; and taught and trained, and employed from morning to night”<sup>9</sup> (quoted in Bales 1999, p. 155).

While current thinkers have put considerable effort into discussing the values implicit in Booth and Rowntree’s methodologies for identifying poverty, contemporaries were clearly aware of the political message which they conveyed. Indeed both of them were interested in the living conditions of the poor out of concern for improving it. They both saw a close relation between the way “facts” were collected and the action which was envisaged. To both of them it seemed that the scientific method could make the collection of data objective and therefore the action recommended on the basis of it.

### **The monetary approach: a critical view.**

While Booth and Rowntree have a double identity, being precursors of both economists and sociologists interested in the quantification and analysis of poverty, nowadays these two categories have developed quite different methods. In what follows we will concentrate on the use that economists make of money metrics.<sup>10</sup> We will focus the discussion around some important issues whose importance has emerged from the previous discussion of the origins of this approach. At first we will discuss the technical aspects of the measurement of poverty. We will then move on to examine critically the claimed objectivity of the approach.

Even though we shall discuss these two set of issues separately for expositional purposes, it is clear that they are intrinsically related. We have repeatedly noted that a faith in the scientific objectivity of the method characterised early attempts at measuring poverty. This became obvious in the shift from Booth’s social classification based on the convergence of different criteria to Rowntree’s poverty line explicitly derived from “objective” calculations and “scientific” knowledge. The methodology seemed to open a new avenue which would allow objective quantification as a purely technical, rather than analytical or prescriptive, matter. In the words of Bowley and Hogg, who acknowledge the similarity of their method with Rowntree’s: “It is not part of our plan to discuss remedies, but only to provide the detailed numerical setting out of the problem” (Bowley and Hogg, 1925)<sup>11</sup>.

### **Getting to a number: different steps in poverty measurement.**

As earlier researchers found, the “numerical setting out of the problem” posed enough questions as to keep them busy, even without having to worry of its normative value. Issues such as the definition of variables,<sup>12</sup> the derivation of the minimum needs for efficiency<sup>13</sup> and developments in the understanding of nutritional requirements in the following decades, including unravelling the complexities of differing metabolic rates,<sup>14</sup> were to challenge the idea that one standard could be

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<sup>9</sup> It is interesting that such a plan was defined by Booth himself as “limited socialism” and that these plans were welcomed with “condemnation by those on the political right, cautious acceptance by moderates and the centre-left, and with complete apathy from socialists” (Bales 1999, p. 158)

<sup>10</sup> We will therefore disregard other important approaches which have developed using monetary indicators in very different ways, such as the methodology associated with Townsends’ contributions in deriving a relative poverty line.

<sup>11</sup> And the claim of aseptic scientificity of the procedure was reinforced by a footnote letting the reader know that “all the data (with the names of the persons removed) are preserved at the London School of Economics, and are available for detailed study if the summaries given in this book are insufficient”.

<sup>12</sup> Bowley in 1915, in a paper on “The measurement of social phenomena” (quoted by Bulmer 1985), highlighted the need for standard definitions of variables such as income, poverty and household.

<sup>13</sup> Already in the second edition of his 1900 study Rowntree lamented that the meagre diet he used to calculate his food poverty line had been attacked as “extravagant”.

<sup>14</sup> See for example the debate on the “small but healthy hypothesis”, e.g. Seckler (1982).

easily set. To analyse these issues, which are still central to today's monetary assessments, systematically, as well as less controversial steps in poverty measurement, we will follow Sen's subdivision of the two phases of poverty measurement of identification and aggregation (Sen 1976). This will also allow us to highlight key elements which need to be considered to ensure that the results are comparable across studies.

In what follows we will not dwell on the important issue of data collection, a preliminary step whose consequences are crucial for the measurement process and its comparability over time and place. Household surveys, generally with complex structures characterised by stratified non-random samples and clustered observations, represent the standard way of collecting information about household resources and structure, the basic elements which need to be combined to obtain an assessment of poverty. Though efforts are being made to arrive at a standardisation of practices by sharing and discussing what has been learnt in running surveys (see for example Grosh et al. (2000)), data quality is often dubious. A wide variety of factors can be seen as responsible for this, including features of the sample design,<sup>15</sup> the breadth of the questions asked,<sup>16</sup> the consistency of the questionnaires over time, the choice of the price indices to be used, the institutional features determining the recruitment and the motivation of the enumerators and practical issues like the choice of who to interview.<sup>17</sup> While these problems plague estimations of poverty and their comparability in ways which are hard to overcome *ex post* (even when researchers are aware of the problems in their data) it is worth stressing that these are not weaknesses of monetary data only. Challenges are presented, for example, even by measuring supposedly "clear cut" indicators such as literacy (e.g. Lavy et al. 1995).

### Identification

The problem of identification "involves the choice of a criterion of poverty (e.g. the selection of a "poverty line" in terms of real income per head), and then ascertaining those who satisfy that criterion (e.g. fall below the "poverty line") and those who do not." (Sen 1976). The choice of such criterion can however be divided into several steps: the choice of an indicator, the choice of a unit of analysis, and the choice of a poverty line.

The choice of an indicator. The issue of what is lacking which identifies someone as poor is very broad and can be discussed at very different levels. In the common practice of the monetary approach, however, practitioners do not dwell too much on the philosophical positions underlying alternative possibilities.<sup>18</sup> Such possibilities are generally restricted to expenditure or income data, given the problems posed by the observability and valuation of assets in order to arrive at a measure of wealth. Arguments could be found in favour of either, as one can be considered as effective and the other potential spending. It is often claimed that theoretically expenditure is preferable to income, either because it can be seen as a proxy for consumption and hence of individual utility, or as a proxy for permanent income (which however requires strong assumptions on the existence and functioning

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<sup>15</sup> And some of these problems are rather fundamental, for example, it is not uncommon for survey to be run in urban areas only.

<sup>16</sup> It has been found, for example, that focusing the food modules of the questionnaires on meals eaten and failing to record the amount of snacking can significantly underestimate the amount of food consumption, at least by certain household members.

<sup>17</sup> It is customary to interview one member per household, often the head or the person deemed to be better informed on the issue on which a certain module is centred, but this practice overlooks the possibility of different members of the household having autonomous streams of income which they control

<sup>18</sup> An example of the pragmatism which characterises the construction of indicators is the inclusion of socially disapproved goods such as alcohol in the welfare indicator. While defensible on the grounds that such expenditure reflects household choices, doubts could be raised on whether such expenditure really contributes to household welfare.

of credit markets) and hence long term living standards. And the argument can be reinforced by considering the difficulty in obtaining reliable income data especially in developing countries.<sup>19</sup>

These arguments could be criticised as already requiring a set of rather stringent assumptions (on the completeness and non rationed nature of the markets for example) in order for the money metric of either income or consumption to capture individual welfare. And a further set of criticisms can be raised about the way they are put into practice. For example, lack of data and researchers' inclinations dictate the extent to which a consumption indicator adopts shadow pricing and imputed values for transforming expenditure data into total consumption (Deaton Zaidi, 1999). It seems, therefore, that the homogeneous definitions which Bowley advocated have not yet been arrived at. Further, this means that in practice important determinants of welfare such as social income and subsistence production often enter into the indicators in rather limited way, if at all.

The choice of a unit of analysis. As discussed above, since the beginning poverty measurement was performed seeing poverty as a problem of an individual, though much of the causes of poverty seemed to operate at the household level. A similar ambiguity permeates microeconomic analysis given that traditionally it concerns itself with individual behaviour, though it is hard not to acknowledge that individuals live in households. The simplest way of dealing with this is to take the household as a unit of observation, and then take into account its size (and possibly its composition) to determine whether the household is poor.<sup>20</sup>

It is unavoidable, however, that even the recent analysis which has tried to unpack what happens in the household rather than considering it as a blackbox cannot solve the problem that whether black or transparent, the household is a box. By living together in that box individuals have interdependent standards of living. One could see this as a problem of observability only, so that it is only feasibility or cost which prevent us from observing the resources to which the individual has access, though we might suspect that there are systematic sources of discrimination (e.g. gender bias). It should be noted however that, adopting alternative definitions of "resources" (or rather, as will be discussed in the next section, alternative definitions of the dimension in which poverty manifests itself) the problem becomes more complex. Following Atkinson ( ...) who considers discounting the lack of freedom of individuals (e.g. elderly persons) who have no other choice but living with others in a household, the issue of valuation of access to resources by individual becomes extremely difficult to handle.

An important issue which arises with respect to the unit of analysis is how it can be standardised by incorporating the demographic characteristics of the households into the measurement. Different demographic structures make households different both in terms of needs (i.e. claims on household resources) and in terms of ways in which those needs can be satisfied (i.e. economies of scale can be enjoyed in the satisfaction of those needs). To this purpose equivalence scales "defined as the ratio of the cost (to a household) of achieving some particular standard of living, given its demographic composition, to the cost of a 'reference' household achieving that same standard of living" (Banks and Johnson 1993) have been devised. These scales are generally obtained objectively, i.e. are estimated from household behaviour, though subjective methods based on people's beliefs on what is needed by different types of households to obtain a given level of welfare have also been developed.

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<sup>19</sup> It has been noted however that if, as is often the case, one measures levels of expenditure and contrasts them with the minimum required to face fundamental needs, there is no certainty that expenditure has effectively been allocated to these needs. In practice this amounts to adopting a hybrid between a focus on effective and on potential spending (Nolan et al. 1996).

<sup>20</sup> Whether the results are presented in terms of poor households or poor individuals, though changing the results does not matter from the procedural point of view as the assessment is still performed at the household level

The estimation of scales objectively is either based on reduced form estimates (justified by the assumption that “there is some measurable variable or household characteristic that has an indirect relationship with the welfare level of that household” *ibid.*) or on modelling complete systems of demand equations from which implied welfare levels of the household can be recovered. The fundamental critique made by Pollak and Wales (1979) of the impossibility of identifying equivalence scales from observed behaviour *conditional* on household demographics (with different preferences over demographic composition consistent with the same behaviour) seems however not to be addressed by the most common methods of estimating scales. Furthermore, the variety of scales which can be produced somewhat challenges the “objectivity” of the results and definitely calls for testing the sensitivity of the results to alternative specifications. It should also be noted that while equivalence scales are standard practice in the analysis of developed country data, their use in developing countries analysis is less common.

The choice of a poverty line. The derivation of a poverty line is central to the monetary approach to poverty measurement, and it is symptomatic that one of the longstanding debates on the nature of poverty – i.e. its absolute or relative nature – is reflected most clearly in the choice of the poverty line and in the methodologies adopted to update it over time (a problem whose importance is often overlooked). Attempts have been made to tackle the issue of the choice of the poverty line in a framework explicitly based in welfare economics (Ravallion 1998), in which the poverty line is defined as “the minimum cost of the poverty level of utility.” (*ibid.* p. 3). Adopting this approach then implies facing a problem of standardising by household characteristics (and prices) analogous to the one of the identification of equivalence scales. Furthermore, the problem of the choice of the level of utility taken as a reference remains arbitrary.

Standard practices<sup>21</sup> take different starting points, identifying the poverty line either with respect to a list of basic needs to be fulfilled or with respect to some characteristic of the distribution of the welfare indicator chosen. The former type of methodologies are followed to derive either objective or subjective poverty lines based on an absolute view of deprivation, while the identification of the line with respect to either the mean or the median of the distribution, captures the idea of relative deprivation. The absolute poverty lines adopted in the analysis of most developing countries, (and, a significant exception among the industrial countries, adopted as the national poverty line in the US) are of a kind very similar to Rowntree’s as they take food energy requirements as the hard core around which the line is constructed.

There are various ways of doing so. To use Ravallion’s (1998) terminology, there is the Food Energy Intake method which identifies the level of income or expenditure at which food energy requirements are met; and there are different version of the Cost of Basic Needs methods: writing down a full-blown list of basic needs and the expected costs of achieving them (a la Rowntree), or starting from the cost of achieving the minimal food energy requirements, and adding a non food component in a way which is more compatible with household behaviour (e.g. scaling the food requirements with the average food-share, or the food share of some particular group, or adding up to the minimal food expenditure the non food expenditure of those whose overall consumption is equal to the minimum food expenditure).

It is interesting to note how the reference to food requirements (and conceivably to other basic needs) operates as an identification device for the poverty line, bringing in additional information

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<sup>21</sup> We are here consciously omitting a discussion of the poverty lines which are derived as minimal income levels below which state benefits can be claimed. These in fact, have the peculiar characteristic of suggesting that the best way to lower poverty is to lower the threshold at which benefits can be claimed and do not seem to be rooted in an explicit theoretical framework.

which solves the “referencing” problem mentioned above. The core issue is, of course, that economics does not in itself provide indications of a minimum level of either welfare or consumption or income, unless either some link is made to efficiency-type arguments by which food intakes are justified with respect to the working capacity of the individual, or some link is made to an explicitly normative – and non economic – theory of a just society.

In sum, while it is helpful to anchor the definition of a minimal level of welfare to the level of welfare enjoyed when certain basic needs are satisfied (or at least when the expected value of need satisfaction is above a minimum level), it is by no means a given of economic theory that it be so, and that the range of needs entering the determination of a poverty line is so restricted. More specifically, while a concern with nutritional achievement and efficiency – traceable already in Rowntree’s analysis of the risk posed by poverty to the creation of a healthy work force and army – makes sense also in terms of non-depletion of one of the poor’s assets (i.e. their working capacity), there is no intrinsic reason why the analysis of welfare (in static or dynamic terms) should be so narrowly restricted to the consumption of one particular kind of goods (where the restriction is to be seen both in focusing on consumption of goods rather than on its consequences – as it will be discussed below – and on the range of goods considered).<sup>22</sup>

In the face of these structural weaknesses of the concept of the poverty line, a more constructive interpretation seems to centre on the idea that the poverty line is just a device, indispensable to focus attention on the lower end of the distribution, as well as to make comparisons over time and place. Such a view, which deemphasises the importance of one single poverty figure, is well attuned the practice of adopting more than one poverty line. Setting different lines, in fact, provides a measure of the robustness of the results as, depending on the slope of the population density function where the poverty line is set, the results of any given assessment of poverty could change dramatically. And, given that the assumptions adopted in determining a given line are far from undisputed, testing for robustness is a very legitimate concern. Stewart (1996), for example, suggests shifting the emphasis from a poverty estimate to a poverty band. Such an area in the distribution is delimited by a lower line at which it is beyond doubt that people are not able to cover their minimal (nutritional) needs and an upper one at which the reverse is true. An extreme application of a similar logic is embedded in the use of stochastic dominance ranking. This involves ranking distributions according to the incidence of poverty they entail (or, failing this test, different degrees of poverty) for a range (possibly all) poverty lines.

Quite different is the use of alternative poverty lines to capture dishomogeneity among the poor. This is for example what Lipton (1983) suggests when looking at the category of the ultra-poor. This is defined as a group of individuals who devotes more than 70-80% of their income on food but do not manage to cover 80% of their caloric needs – resulting in differences in their production behaviour due to their labour and nutritional choices (Lipton 1988).<sup>23</sup>

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<sup>22</sup> It is also worth pointing out here how the arbitrariness of the anchor makes it possible to have sudden changes (e.g. in the case of India it has been changed from a 2400 to a 1900 calorie requirement), therefore disrupting the comparability of the estimates with existing data series.

<sup>23</sup> In particular, their overriding concern is to increase their caloric intake when income rises so that – unlike the case of for the rest of the poor—their food-outlay ratio rises and they do not substitute cheaper for more expensive calories. Another distinguishing feature is that despite the high proportion of outlay going to food, the ultra poor do show the physical signs of malnutrition in severe impairments in their anthropometric measurements. The consequences of malnutrition and disability also affect the supply of labour.

### Aggregation

Having identified the position of every observation taken as unit of analysis with respect to a poverty line drawn in the space of the indicator of interest, the second phase of poverty measurement involves the aggregation of these individual informations into one index. The seminal paper in this context is Sen (1976) where the principles of an axiomatic approach to the measurement of poverty are spelled out along the path followed in the literature on inequality and applied to a new index (Sen's index). Until then, people had relied on statistical indices like the headcount (the percentage of people living in poverty) and the income gap ratio (the shortfall between poor people's average income and the poverty line, divided by the poverty line). Key axioms (Patrizi 1990) with respect to which these widely used poverty indices are judged are: 1) the axiom of the irrelevance of the non-poor, by which the distribution lying above the poverty line should not be considered in a poverty index; 2) the monotonicity axiom, stating that "given other things, a reduction in income of a person below the poverty line must increase the poverty measure" (Sen 1976, p 219); 3) the transfer axiom stating that "given other things, a pure transfer of income from a person below the poverty line to anyone who is richer must increase the poverty measure".

The application of the axiomatic approach to the construction of poverty indices has helped focusing attention on the desirable characteristics of a poverty index when constructing poverty indices.<sup>24</sup> By far the most popular of such efforts is the formula of the FGT family of indices (Foster Greer Thorbeck 1984), which encompass the headcount ratio and the poverty gap as well an index for the severity of poverty which respects all of the three axioms mentioned above. They can be obtained by substituting with 0, 1, and 2 respectively for the value of  $\alpha$  in the following formula:

$$P_{\alpha} = \frac{1}{n} \sum_{i=1}^q \left( \frac{z - y_i}{z} \right)^{\alpha}$$

While the presentation of the FGT indices has become quite standard practice in the construction of poverty profiles, it is worth mentioning that the impossibility of reconciling all plausibly desirable axioms<sup>25</sup> has led to another strand of poverty measurement based explicitly in a social valuation function, measuring the social loss due to poverty in which different aspects of poverty can be explicitly traded off one against the other. This last approach is obviously explicitly normative, and presents a contrast with views of poverty measurement as purely descriptive. However, even an axiomatic approach provides a set of weak constraints on the functional form of the index, therefore leaving space for normative judgements to identify it (e.g. to chose the weighting system for different degrees of poverty). And in general, even if the identification of axiomatic indices with descriptive ones were correct, it might prove difficult to classify different kind of indices into descriptive or normative. For example it can be shown (Patrizi 1990) that, though the FGT family can be characterised axiomatically, it provides orderings equivalent to those obtained with stochastic dominance<sup>26</sup> which in their turn have normative implications.

<sup>24</sup> Foster (1994, p. 367-368) offers however a convincing discussion on how the axiomatic characterisation of an index needs to be tempered with other practical considerations: "A researcher's time might be better spent identifying important aspects of the phenomenon to be measured and showing how a particular index captures them, rather than erecting axiomatic structures around measures which will never be used".

<sup>25</sup> It might seem desirable, for example, that the axiom about the proportion of the poor (ie that if the proportions of the poor increases the index increases) is respected, even though it might prove incompatible with the transfer axiom (eg when a transfer from a poor person to someone less poor enables the recipient to cross the poverty line). See e.g. Thon (1983).

<sup>26</sup> The orderings obtained when stochastic dominance of first, second and third degree hold are equivalent to those which can be obtained by ranking distributions in terms of FGTs with  $\alpha=0, 1$  and  $2$  respectively.

### **Comparability of results.**

Given the variety of issues to be faced in order to arrive at an estimate of the extent of poverty, the comparability of results over time and location becomes an important issue. While it is easy to calculate the same indices in different contexts, it is not a given that they reflect the same kind of information, even when calculated over equally defined variables – which entails the inclusion of the same components<sup>27</sup> and the absence of verbal confusion on what is meant in similar questions posed in different surveys.

This problem was already faced squarely by Rowntree when replicating his York surveys and updating the poverty line. He chose to maintain a standard which bore some reference to the general context in which individuals lived. In analysing his 1936 survey, for example, he updated the items included in his previous calculations, considering the availability of a dwelling with a bath and a garden (not regarded as luxury items for working classes households by 1936) and no longer considering goods such as second hand boots and jacket (Atkinson 1989) appropriate.<sup>28</sup>

But the solution adopted by Rowntree is just one interpretation of the concept of comparability, as it takes an external parameter (the norm in society, but it could be a given level of utility, as previously discussed) as the essential reference. Such a way of proceeding could be challenged on the ground of equality of minimal rights (if those rights are intended purely negatively), as detailed below, while it might also prove politically unacceptable. Should one adopt different poverty lines for different parts of a country? Should the poverty line be higher in urban areas given the high prices of food – or is this pandering to the expensive tastes of better off populations? These issues have non trivial consequences for the diagnosis of poverty (Ravallion and Bidani 1994) and hence for policy .

### **Beliefs beyond numbers?**

Our discussion of the methodology to assess poverty in a monetary poverty perspective has shown that a number of choices have to be faced, potentially affecting the results, all motivated by serious theoretical considerations. In this light, the objectivity of the method and its ability to portray an undisputed reality, a feature which emerged strongly as a claim made about the approach from our discussion of its origins, is undermined. Yet in most policy discussion, the numbers identified by monetary poverty assessments are regarded as important facts justifying particular policies. Moreover, the apparently obvious choice of a monetary indicator seems to bias policy advice towards the key role of growth in monetary income as a solution to poverty, a factor which might seem obvious to practitioners, but which is to be proven for those holding wider views on poverty.

It is apparent, however, that for most practitioners poverty as identified by the monetary approach is regarded as an objectively measurable phenomenon, albeit rather undefined. In this section we discuss these two elements. First we will illustrate one attempt at providing a definition of poverty which makes sense as an economic category. This is an interesting example as it makes clear what the concerns of such an approach are, and what is not going to be captured by extensions of the paradigm in this direction. We will then present some possible reconstructions of the monetary approach which explicitly challenge the objectivity of the process of measurement.

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<sup>27</sup> An interesting question in this respect is what to do when in different contexts different goods are necessary .

<sup>28</sup> He presented both a definition of “abject poverty” (with the poverty line updated only by valuing it at new prices) and an entirely new poverty line, based on his work for the book “The Human needs of Labour” aimed at capturing the minimum necessary for a healthy life rather than bare subsistence.

### **Towards an economic definition of poverty.**

The monetary approach does not offer a widely accepted “self-contained” (i.e. not anchored to some normative theory) definition of poverty, with the exception of those measures linked to efficiency wage mechanisms and which are not hugely adopted. Similarly, the big questions on the mechanisms which brought about poverty and determined its intensity – questions to which the classics devoted a good amount of thought – are not on the agenda as they cannot be perceived from an exclusively microeconomic and individualistic perspective.

Some have seen this as an unsatisfactory situation. Lewis and Ulph (1998) identify three interrelated issues, disregarding of which prevents the development of a microeconomics of poverty: how a concern for poverty (as captured by normative indices) differs from a concern for relatively low incomes as discussed in the literature on the measurement of inequality; how poverty and inequality “interrelate and contribute to the overall level of societal welfare” and what is the significance of a poverty line which is externally given.<sup>29</sup> Lewis and Ulph do not attach great importance to this last issue, as they are mostly interested in measurement, and as “the problem of determining the poverty line is logically distinct from that of measuring the poverty line”. From a conceptual point of view however, an externally given poverty line (in the sense of not depending on any of the parameters driving individual behaviour) does not explain the economic significance of the discontinuity between the poor and the non poor (and if one assumes that there is no discontinuity in some behavioural sense, then it is not clear what the significance of the externally given poverty line is).

They propose a model incorporating “two critical features that should be present in any coherent account of poverty at the individual level” (p. 120 *ibid.*), i.e. that there is a strictly positive minimum of expenditure required on one or more specific commodities to escape poverty, and that this minimum consumption also provides indirect consumption benefits in the form of participation in certain activities or social participation.<sup>30</sup> This model, allows the authors to show why poverty matters for the utility of the individual and how it matters for society in as much as societal welfare is a reflection of individual preferences. While the Lewis and Ulph model presented above does not seem to have shifted the way poverty is modelled greatly (or rather, “not modelled” in itself), it provides an interesting example of the way the concept of poverty can be integrated into microeconomic analysis. Such a way of proceeding is indeed quite reductionist as it is focused on individual utility and in a view of society as composed by “the sum of individuals acting rationally” (Burgemeier 1994).<sup>31</sup> In the next section we will briefly summarise how these basic foundations of welfarism have been criticised, but the popularity of Sen’s critique seem to make it superfluous to dwell on it in much detail.

### **Of philosophers and values**

Two alternative philosophical systems have been identified as justifying the use of monetary indicators to measure poverty. The first one is the welfarist one, and applies when poverty is

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<sup>29</sup> It might be worth noting that in the one way that economists have adopted for justifying a poverty line, i.e. the efficiency wage paradigm, the line is linked to the productive capacity of the individual rather than to its utility/welfare.

<sup>30</sup> These critical features are derived models (eg Sen’s) developed quite outside the standard monetary approach,

<sup>31</sup> It has interestingly being argued (Burgemeier 1994), that such an emphasis was absent from Walras original writings, as one of the founding fathers of the neo-classical model as we know it saw “socioeconomics” as the necessary complement to a theory of the markets. Apparently, however, what is currently neoclassical economics with its aloofness from reality has been the fruit of a selective interpretation (as shown for example by the selection of Walras’s writings translated into English) “who are only interested in the development of the neoclassical paradigm” (*ibid.*, p. 343).

conceptualised as lack of economic welfare and measured in terms of achieved standard of living. This view is explicitly linked to the assumptions of microeconomics, crucial among them that individuals have identical preferences. In this framework it is the concept of utility as inferred from market behaviour that becomes the indicator which is supposed to capture economic welfare. The second view, less widespread, adopts a rights based approach, and assumes that households or individuals are entitled to a minimum income, the disposal of which is a matter for them. (Atkinson 1989).

In various contributions (usefully synthesised in Sen 1997) Sen offered a thorough review of the welfarist approach, by criticising in a sequence the different “steps” which link market behaviour to individual welfare. He emphasised the distinction between well-being and welfare where the former pertains only to purely self-seeking behaviour,<sup>32</sup> and the latter also includes the consideration of agency (which includes other goals, values and ideals that are important in individual life despite not increasing an individual’s well-being). While well-being can be arguably proxied by utility, agency goals cannot, so that utility stands as a very imperfect approximation of welfare. As for inferring utility from market behaviour, market choices might be determined by other factors than pure utility maximisation (e.g. strategic interactions). He then questioned the significance of utility maximisation, as it would be foolish (rather than rational) to define one’s own wellbeing on the basis of the same criteria adopted to determine market choices. Further, even if the utility outcome was the only thing that mattered for the individual, subjective and objective elements would contribute to it, therefore making utility a rather noisy indicator.

To prove this Sen criticised different definitions of utility in turn. If utility stands for desire fulfilment or happiness, then adopting a utility based framework entails neglecting factors which might not be desirable in an objective valuation of well-being. For example, neglecting what people can effectively do by focusing only on their mental disposition (“physical-condition neglect”) as well as neglecting the way that valuation is influenced by what appears reasonable or possible (the “valuation-neglect”). If utility is taken instead as a description of choices without reference to the underlying psychological conditions, i.e. the Revealed Preference definition of utility, it provides an even weaker basis for ethical judgement.<sup>33</sup>

It can be noted, however, that Sen’s critique does not extend to approaches based on rights. They offer a non-welfarist alternative ethical justification to monetary based poverty measurement which has the advantage of avoiding the issue of interpersonal comparisons. For example Von Parijs (1995) suggests an approach based on “real freedom”<sup>34</sup> – not only the formal freedom of “doing what one might want to do” but also having the minimal amount of means, for doing it. It is interesting to note that, unlike in Sen’s right based capability approach, the actual space in which satisfaction of minimum rights is to be verified is the space of resources.

## Conclusions

From a mission for few enlightened minds, poverty measurement has now become a sophisticated and professional endeavour. Its developments have closely followed those of many disciplines, from

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<sup>32</sup> Altruistic concerns for others are not excluded, but are part of well-being inasmuch as they are reflected in the individual utility function, they do not matter in themselves.

<sup>33</sup> If choice between two options is not linked to an individual attaching any particular value to one choice compared to the other, that choice does not provide any ground for attributing to the chosen option any greater social value. (Sugden, 1993)

<sup>34</sup> Van Parijs (1995)

sociology to economics and statistics and a set of standard procedures has now been identified. Still, in this survey we have reminded ourselves that there are many unpleasantly vague details and questions which have not yet been sorted out, and whose solution requires taking a number of decisions of rather normative nature. Be it in the definition of the poverty line, or in the decision of the space in which it has to be drawn and for which unit of analysis, vagueness surrounds any given estimate of poverty. The ideal objective assessment in which early studies believed seems therefore to have been proved unachievable. Another aim of the early pioneers however seems to have been extremely successful. The estimates of poverty have entered into the political debate and become policy targets, their reduction has even been enshrined into constitutional law (as in the case of Ireland). While this is indeed a reason for optimism, knowing what these numbers tell and what they hide has become even more of an important issue as a result.

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