MEASURING SOCIAL TRANSFERS IN KIND:
EXPERIENCES FROM THE FINNISH HOUSEHOLD BUDGET SURVEY

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Summary

This paper deals with the issue of including social transfers in kind into the concept of income and consumption. The level of disposable income is frequently used to compare welfare between different countries. However, disposable income leaves out the impact of social transfers in kind (STIK) that consist of individual goods and services provided as transfers in kind to individual households by government units and non–profit institutions serving households (OECD).

Due to the variety of education, health care and social service systems, there are large cross–country differences in the share of STIK in income or consumption between countries. Social transfers in kind not only affect the level, but also the distribution of income, since the use of publicly provided benefits has been observed to be largest for the poorest income deciles. Using adjusted disposable income – the sum of disposable income and STIK – as an income concept will produce improved measures of income and welfare.

For measuring values of STIK at the micro level two main methods are used. In the top–bottom method the value of entitlements for individual households depending on household characteristics will be calculated so that the sum of household entitlements equals the value of services provided. This method does not necessarily require household level survey data. The main problem arises from the fact that entitlements to benefits might be very different from the actual take–up of benefits. The Finnish Household Budget Survey (HBS) 2006 uses the so called bottom–up method. We measure the value of benefits from information on actual take–up of benefits derived from a sample survey and from data on the costs of individual benefits. Although the value of each benefits measured with this method might not always reflect the value individuals place on those benefits,
the measurement methods in the Finnish HBS provide a useful framework for future studies, and a high quality data set on social transfers in kind.

The Finnish HBS 2006 includes data on approximately 4,000 households. The survey consisted of personal interviews and consumption expenditure diaries kept by households for two-week periods at a time. Special emphasis was put on obtaining information on STIK. Unit costs for several publicly provided benefits are taken from various administrative sources. The value for individual benefits will be calculated as the difference between the cost of the benefit and (possible) payments made by household to obtain the benefit. The HBS is still a work in progress, and first statistics of that survey will be available later this year.

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1. Introduction

This paper deals with the issue of including social transfers in kind into the concept of income and consumption. Social transfers in kind (STIK) consist of individual goods and services provided as transfers in kind to individual households by government units and non-profit institutions serving households (OECD). By adding STIK into the definition of both income and consumption, a broader measure of both variables will be presented:

(1) Adjusted disposable income = Disposable income + STIK

(2) Households’ actual final consumption = Total consumption expenditure

+ STIK

Being a part of income and consumption, STIK also have a significant effect on welfare. However, measuring benefits and their welfare impact can be problematic. During the latest Finnish Household Budget Survey (HBS) major efforts have been made to estimate the value of social transfers in kind. Even though several problems remain, the methods used in the survey should lead to interesting results.

The development of estimation methods for the value of benefits has for the most part been finalised and will be presented in this paper. Nevertheless, the HBS 2006 is still very much a work in progress. Therefore I am – unfortunately – not able to present any results from the latest survey.
The survey data still needs some processing in order to draw reliable conclusions from it. At least preliminary results should be published later this year.

2 The redistributive role of social transfers in kind

The level of disposable income is frequently used to compare welfare between different countries. While it is hard to argue that an increase in disposable income does not improve individual welfare, it is clear that disposable income alone is by no means a sufficient, but rather an indirect welfare measure. Measuring cross–country differences with the sum of disposable incomes leaves out the impact of social transfers in kind (STIK) provided by the public sector. Including STIK into the concept of income will change welfare measures in a major way.

Due to the variety of education, health care and social service systems, there are large differences in the share of STIK in income or consumption between countries. For example in one country individuals might have high levels of earnings, but they are not entitled to free education or health care. A welfare comparison to another country with lower levels of earnings but free or highly subsidised public education and health care will yield very different results if STIK are taken into account. In Finland, STIK accounts for approximately 25 percent households’ actual final consumption. The share of STIK has remained relatively stable throughout the past two decades in spite of the recession period in early 1990’s.

Social transfers in kind are included in the framework of the European System of Accounts and aggregate values of STIK are generally available in National Accounts. A recommendation of the International Expert Group on Household Income Statistics (so called Canberra group) is, that adjusted disposable income (ADI) should be used as a measure of income. Measurement problems of STIK are, though, recognised by the expert group, which could make the use of disposable income in some cases acceptable.

Not only the level but also the distribution of income matters. While there are arguments for the negative impact of very low levels of inequality on incentives and thereby growth, most researches on the subject support the view that inequality has a negative impact on growth (see for example Alesina and Perotti 1996 or Benabou 1996). Even more importantly, an increase in inequality leads to decreasing aggregate welfare because of decreasing marginal utility of income (Samuelson 1983).
Social transfers are very much related to the distribution of income and STIK should be included in the income concept not only at the macro– but also at the micro–level. The distribution of social transfers is very different from the distribution of other sources of income. Social transfers have been observed to be most significant for lower income deciles. Adding STIK to individual disposable income measures will therefore lead to a significant income redistribution from the richer households to poorer ones.

The Finnish experience suggests that not only the income share but also the amount of STIK can be bigger for the lowest income deciles. Data on consumption and STIK by income quintile is used as a proxy for the redistributive impact of government–provided benefits (see figure 1). The share of STIK in households’ actual final consumption was almost 40 % for the poorest quintile, but only 7,9 % – and quite a bit smaller also in monetary terms – for the richest quintile.

**Figure 1. Households’ disposable income, social transfers in kind and income increase percentage by income quintile in 1990.**

A further issue is that there are a group of other indicators that can be used to measure welfare, and which are affected by government transfers. Social transfers in kind can be divided into individual and collective services. While individual services, such as use of education, health care and social services, can be measured and allocated to different households, individual welfare impacts of collective transfers are hard, if impossible, to measure. The welfare–improving effect of collective
services is related to topics such as safety, environment or freedom. Even though one could find cost measures for collective benefits, it is difficult to estimate how individuals value the existence of such benefits. In the annual UNDP Development Reports cross–country welfare comparisons including collective benefits are introduced. The outcome of these estimates is rather a ranking between countries than exact measures of the level of welfare. Collective benefits are also omitted from the concept of STIK in the recommendations of the Canberra Group.

This paper concentrates on solving measurement problems of individual services, recognising the impact of STIK on both total income and income distribution. Measuring the value and welfare impact of collective services is a subject for another study.

3 Measuring social transfers in kind at the micro–level

Government spending on STIK can for most countries be derived from national accounts. For determining the redistributive impact of STIK an estimate of the allocation of benefits to different households is required. The Canberra Group Final Report describes ways to measure STIK at the micro level. Two basic methods are measuring either entitlement to or actual take–up of social benefits.

The allocation of STIK through the entitlement to benefits can be measured, if the total value of public sector benefits is known. The value of entitlements for individual households depending on household characteristics will be calculated so that the sum of household entitlements equals the value of services provided. This so–called top–bottom method can be used without having information on the actual household–level use of benefits. Nevertheless, assuming that households’ actual take–up of benefits equals their entitlement to benefits can lead to biased results. Not only do households tend to use less social benefits than they are entitled to, but the difference between entitlement and take–up can be very different for households with different characteristics and income levels.

Measuring actual take–up of benefits solves the problem of differences between take–ups and entitlements. The main problem with this so–called bottom–up method can be lack of household level data on the use of benefits. The estimation of the value of STIK via take–ups requires not only knowledge on the costs of benefits, but also information on households’ benefit take–ups and spending on benefits that are not free but subsidised. Whatever method is used to estimate the allocation of STIK, the more detailed information one has on the costs of social services, the more
accurate results are obtained. The costs of public benefits can differ a lot between various provinces or even municipalities within a country.

There are some problems of a philosophical nature connected with using the value of STIK as a welfare measure. The first one is related to the method of using take-ups as a measure of benefits. Having the possibility to use free or heavily subsidised public health care services can certainly be considered as something that increases welfare. But are those individuals (or households) that actually use more health care services better off than those individuals (or households) that do not? To use an extreme example, someone who has spent most of his/her time in a hospital during one year will probably be placed in the bottom income quintile by disposable income, but in the top income quintile by adjusted disposable income. But should an individual who has to use public health services for most of the measurement period really be considered rich?

Furthermore, the costs of public benefits do not necessarily reflect the value that individuals place on the benefits. Individuals who receive benefits in kind have no choice about how to use the income equivalent to the benefit. In some cases individuals might – instead of the benefit – prefer to receive a cash transfer worth less than the cost associated with the benefit. The value placed on each benefit can obviously be different for each household.

The cost of a benefit is probably neither a valid welfare measure even for households with similar utility functions. The quality of benefits produced with same costs can be different. In other words, although one considers the welfare impact of, say, primary education to be very similar for all households, not all primary schools are able to offer education of similar quality with identical costs.

Even if we take into account the limitations described above, adding STIK to the income definition will increase the value of statistics used to measure individual welfare. There is probably no perfect way to measure the welfare impact of publicly provided benefits. However, these benefits play such a major role for individual income and welfare that they cannot be overlooked.

As mentioned before, the role of STIK varied between countries, and for the purpose of cross–country studies the sum and distribution of STIK will be of major interest. Finding an identical and harmonised way to measure STIK across countries involves lots of technical problems. Simply the question about which benefits should be included proves to be a difficult one. Using the method of benefits take–up requires household surveys. Although researchers would naturally prefer to have as much information as possible, the desired length of a survey limits the number of items that can
be included in the questionnaire. Also, reliable information on either the costs or the take–ups of all benefits can be hard to acquire. The last part of this paper describes the methods used in the Finnish HBS to estimate the value and allocation of social transfers in kind.


Between February 2006 and February 2007, a household budget survey investigating the consumption behaviour of households was carried out by Statistics Finland. The survey consisted of personal interviews and consumption expenditure diaries kept by households for two–week periods at a time. The sample size was 7,760 households and the non–response rate about 45 percent, leaving data on slightly more than 4000 households available. The bias caused by non–response will be adjusted for in the estimation procedure. First publications derived from the Finnish HBS are planned for December 2007.

Statistics Finland estimated values of publicly provided benefits in the 1990 Household Budget Survey, but these benefits have not been included in the analyses of subsequent surveys in 1994–96, 1998 or 2001–02. Demand for estimates on STIK by researchers and policy makers has increased in the past years. Consequently, the Social Statistics Department of Statistics Finland decided that one of the key targets of the 2006 HBS was to get information on the use of STIK.

Previous experience on determining costs of public benefits was only of limited value for the current survey, since the structure of the social services system has changed in a major way since 1990. Therefore also reliable time series data might be hard to acquire. Still, there are high expectations on the outcome of this survey. Data on the costs of various benefits has improved a lot in past years. Results with excellent quality on the individual take–up values of STIK should be obtained from the data of the Finnish HBS 2006.

Statistics Finland uses a so called bottom–up – principle for determining individual values of various benefits from the HBS data. Details on the actual take–up of several STIK were asked by households in the interview, as well as information on money spent on publicly subsidised benefits. During the construction of individual survey questions, high attention was paid on determining those appropriate units of benefit take–ups for which costs could be estimated.

One of the biggest challenges was to estimate costs for the public sector from providing individual benefits. Fortunately, there are numerous administrative sources from which these costs can be determined. For a large number of STIK high–quality estimates on the unit costs can be derived at a
very accurate level, especially in the case of education and health services. Data on the unit costs was taken from sources such as the Ministry of Education, National Board of Education and the National Research and Development Centre for Welfare and Health. Appendix Table 1 presents a summary of benefits, for which both take-up and costs are estimated in the survey.

The value of each benefit for a household will be calculated as the difference between the unit cost of the benefit and (possible) payments made by the household to get the benefit. While the take-up of benefits is investigated for each household member, costs of benefits are asked at the household level. Estimates of the values of STIK are accordingly calculated at the household level. Appendix 2 shows two examples of the calculation of benefits at the micro level in the Finnish HBS.

The intention of the Finnish HBS is to find out patterns of households’ consumption behaviour rather than exploring households’ income at the most detailed level. Official statistics on income distribution with a slightly broader income concept are made from annual surveys on income and living conditions by Statistics Finland. Even though the difference between the income concepts between these two surveys is not substantial, official income distribution statistics will not be drawn from the HBS data. On the other hand, social transfers in kind are not included in the official income distribution statistics. Calculation of Gini-indexes using adjusted disposable income as a measure would require a combination of these two surveys, which would prove to be too exhausting for the interviewees.

Even though official statistics of indicators on income and income distribution are not drawn from the Finnish HBS, the data is a very useful one for studying the consumption behaviour of households with means of a broad definition of consumption (households’ actual final consumption). The impact of STIK on the consumption expenditure of different kinds of households – by age, socio-economic group, stage in life and so on – will offer an interesting framework for statistics and research. Naturally, values on STIK at the household level alone are a valuable source of information.

Statistics Finland intends to use the HBS data for the publication of basic statistics and some other smaller studies on the subject. Unit-level data of the consumption survey will be available for academic research purposes once the database has been finalised. This provides researchers with endless possibilities for further research papers.
5. Conclusions

There is still a lot of work to be done to acquire high-quality measures of welfare, or at least of the income component in the welfare function. This paper has illustrated the estimation methods for values of social transfers in kind at the household level using the bottom-up principle. We consider the methods as very suitable for estimating values of STIK. The method chosen by Statistics Finland benefits from detailed survey data and substantial administrative data sources on the costs of publicly provided benefits.

As an outcome of the HBS, a variety of analyses on the impact of social transfers in kind in Finland will be produced. As mentioned before, time series analyses are harder to acquire. In the future, including STIK as a part of household budget surveys would be very useful and present possibilities for comparing the values and distribution of benefits over time.

An even more difficult question is comparisons of the level and impact of social transfers in kind between countries. Cross-country comparisons would first of all require the calculation of some estimates of the value of STIK. Furthermore, all countries should use same groups of benefits to measure STIK. It is probable that the number of variables that can be measured for a larger group of countries is quite small due to data limitations. If data on individual take-ups is not available, or if the top-bottom-method is preferred for some other reason, comparisons on countries using the bottom-up method might become biased. Further results on the differences between the outcomes from various estimation methods remain to be tested.
### Appendix Table 1. List of social benefits used in Finnish consumption survey 2006

<table>
<thead>
<tr>
<th>Concept</th>
<th>Household level information</th>
<th>Unit</th>
<th>Source of costs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary education</td>
<td>number and time of hh members attending, municipality?</td>
<td>semesters</td>
<td>National Board of Education</td>
</tr>
<tr>
<td>Polytechnic education</td>
<td>number and time of hh members attending, field of studies, tuition fees</td>
<td>months</td>
<td>National Board of Education</td>
</tr>
<tr>
<td>University education</td>
<td>number and time of hh members attending, name of university, field of studies, tuition fees</td>
<td>months</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>Labour market training</td>
<td>detailed information on schools, courses and payments</td>
<td>€ / person</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td><strong>Childrens’ day care</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full–time day care</td>
<td>number and time of hh members attending, public or private, payments, refunds</td>
<td>months</td>
<td>Statistics Finland, six biggest municipalities</td>
</tr>
<tr>
<td><strong>Health care</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital care</td>
<td>time spent in hospital, type of hospital, payments</td>
<td>€ / day</td>
<td>STAKES*</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>time spent in rehabilitation, payments</td>
<td>€ / visit</td>
<td>STAKES</td>
</tr>
<tr>
<td>Doctor</td>
<td>times visited doctor, type of hospital, payments</td>
<td>€ / visit</td>
<td>STAKES</td>
</tr>
<tr>
<td>Dentist</td>
<td>times visited dentist, public or private, payments</td>
<td>€ / visit</td>
<td>Social Insurance Institution of Finland</td>
</tr>
<tr>
<td>Medical research</td>
<td>type of medical research, type of hospital, payments</td>
<td>€ / visit</td>
<td>STAKES</td>
</tr>
<tr>
<td><strong>Assistance and guidance services</strong></td>
<td>detailed information on care received, payments</td>
<td>€ / visit</td>
<td>STAKES</td>
</tr>
</tbody>
</table>

* National Research and Development Centre for Welfare and Health
Appendix 2. Examples of calculating values of benefits for households

**Example 1. University education**

**Questionnaire:**
- Which household member(s) attended university during the past 12 months? (variable X)
- For how many semesters did member X attend primary school? (variable T)
- In which university did member X study? (variable U)
- What was the field of education of member X? (variable F)
- Was member X a graduate or post–graduate student? (variable G)
- What was the amount of tuition payments made for member X? (variable P (X) )

**Ministry of Education:**
- Semester cost for one student by university and field of study. (variable C (U,F,G) )

**Value of benefit for member X:**
\[ V (X) = C (U,F,G) \times T - P (X) \]

Value of the benefit for the household is the sum of all V (X)’s.

**Example 2. Health services – visits to doctors**

**Questionnaire:**
- Which household member(s) visited a doctor during the past 3 months? (variable X)
- Where and how many times did member X go to the doctor? (variables T and D)
- How much did the household pay for member X’s doctor’s appointments when health insurance or other refunds are deducted? (variable P (X) )

**National Research and Development Centre for Welfare and Health**
- Cost of one doctor’s appointment in health centre, policlinic, municipal hospital and students’ health care institution (variable C (D) )

**Value of benefits for the household:**
\[ V (X) = C (D) \times T - P (X) \]

Value of the benefit for the household is the sum of all V (X)’s.
References:


