

Household Cost Indices

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Four Distinguishing Features

- Democratic weights
- Gross insurance premia treated as costs
- Interest payments treated as costs but interest receipts are not offset
- Expenditure associated with time of payment rather than time of consumption

- Household preference functions are homothetic but need not be identical
- Social welfare is given by the mean of the log of real consumption of each household

These imply that growth in social welfare is the mean of the growth rate of the real consumption of each household. The mean growth rate of each household's consumption is given by the growth in the geometric mean of household income deflated by the democratic price index (Aitken and Weale, *Economica* 2020) ONS should draw attention to the geometric mean of income rather than (or as well as) the median.

Democratic Weights ii

- How much does this matter?
- Look at the growth in nominal incomes between the 2010 and the 2018/9 LCFS
- Look at the bottom decile, the sixth decile and the tenth decile
- The data are taken from the public access records and income figures above the 99.5% value are top-coded to that, so the top decile figures are purely illustrative.

	1st decile	6th Decile	10th Decile
Arithmetic mean growth	16.5%	10.7%	-6.6%
Geometric mean growth	15.7%	10.8%	-7.4%

Table: Income Growth 2010 - 2018/19 for Selected Deciles

The difference between the AM and GM is more important at the extremes of the distribution than in the middle.

Gross Insurance Premia (i)

- What is consumption?
- Enjoyment of consumption goods or
- Purchases of consumption goods.
- These differ because of losses in storage or transit.
- Economic statisticians tend to define consumption by purchases
- For welfare purposes it is better to look at what people actually enjoy.

Gross Insurance Premia (ii)

- In the CPI general insurance premia are decomposed into and intermediation charge and a purchase of goods
- The goods are treated with other consumption and the charge for insurance is intermediation
- Insurance-financed consumption makes good losses while other consumption purchases increase utility
- An increase in risk raises insurance premia and insurance financed consumption but it does not increase welfare
- The HCI helpfully sees the increase in premia in such circumstances as an increase in costs rather than an increase in consumption volume.
- To extend this to CPI and the national accounts would require identification of losses in consumption as an extra category of demand. The economic case for this is clear if one is measuring welfare rather than product.

Interest Payments (i)

- The basic theory of price indices extends naturally to include taxes and interest payments.
- Explicitly or implicitly non-consumption outgoings have to be indexed to prices or some subset of prices.
- A strong case can be made for setting up an index which focuses on net rather than gross household interest payments
- One might expect that with democratic weights this may not differ very much from the current index, but it would make the index better at facilitating measurement of changes in household well-being.

Interest Payments (ii)

- The table shows the weighted mean of receipts and payments of interest, and also their shares in total expenditure plus gross interest payments.
- The first measure is relevant to a plutocratic index and the second to a democratic index.
- Gross interest payments are defined as $B130+B150+B237$.
- Gross interest receipts are $P081+P082$ and total expenditure is $P600t$.
- The calculations are done using LCFS data without any adjustment for under-reporting.

Interest Payments (iii)

	Expenditure	Receipts	Payments
All Households			
Average 2010	406.34	5.66	25.66
Plutocratic weights		0.013	0.059
Democratic weights 2010		0.019	0.050
Average 2018-9	507.78	4.71	21.89
Plutocratic weights		0.009	0.041
Democratic weights 2018-9		0.010	0.037
Household Ref Person 65+			
Democratic weights 2010		0.036	0.007
Democratic weights 2018-19		0.023	0.004

Table: Interest Receipts and Payments (£ per week and shares of expenditure)

Weights are calculated as a share of total expenditure plus interest payments from LCFS data.

Interest Payments (iv)

- Plutocratic payments weights are higher than democratic weights but the reverse is true for receipts.
- Democratic receipts are 40% of payments in 2010 and 27% of payments in 2018-9.
- For retired households receipts are about five times payments.
- Despite expectations the impact of leaving out interest receipts is very material.
- High overhead charges on credit card interest mean that receipts are probably more sensitive than payments to interest rate changes.
- All this suggests HCI is not a good indicator of the effects of interest rate changes on living standards.
- It may work well for relatively poor households but the general HCI should not be used as an indicator of what is happening to a sub-group of households.

Timing of Purchases(i)

- Debt-financed goods are paid for after consumption while savings-financed goods are paid for before consumption. Handling the latter is difficult because they cannot be easily identified.
- A cost index which relates to time of payment is a cost index for cash flow.
- The theoretical context is hard to unravel because utility is derived from consumption and not cash flow.
- The index can still be seen as measuring changes in the cost of the subset of current consumption paid for contemporaneously conditional on other payments and current consumption paid for at different times.
- So far the principle has been applied to student loans which have many of the characteristics of a tax.
- Is it better to extend it to all practical areas or to limit it to student loans?

Timing of Purchases (ii)

- Discussion has focused mainly on items bought on credit.
- Car repayments may be better matched to the consumption of car services than is the purchase of a car.
- But there is a clear mismatch between the enjoyment of a holiday and subsequent payments for it.
- If the principle is to be general it should also be applied to payments in advance of consumption, i.e. to saving.
- Pensions in particular are a clear payment for future consumption, and the price of future consumption relative to current consumption is given by an appropriate interest rate.
- But the LCFS shows only very limited data on pension contributions, with no information on occupational pensions. So pension contributions could be accounted for only by drawing on data from the Wealth and Assets Survey.

Timing of Purchases (iii)

- As interest rates have fallen the present cost of future consumption has risen markedly.
- Low interest rates also increase the value of life-time labour income.
- Comparing a cash-flow cost index with current income is highly misleading.
- On the other hand it is obviously not likely that ONS will want to, or could, publish life-time income figures.
- All this suggests it is probably best not to take the cash-flow approach too far.

Capital Costs of Housing

- The cash flow approach can, in principle be applied to the capital costs of housing.
- Mortgage capital payments represent housing as it is paid for.
- But people also make payments from lump sums, inheritances and gifts (Bank of Mum and Dad)
- Assuming housing is the main component of inherited wealth, it would be correct to leave out inheritance finance. The purchase would have been paid for by the legator.
- People may, however, withdraw equity from housing -e.g. to finance consumption in retirement. This is a negative purchase of housing and, on a cash-flow basis, should be accounted for as such.
- To manage housing coherently in the cash flow framework, it is necessary to take account of equity withdrawal. Otherwise the same issue arises as with interest payments.
- For about 15 years the owner-occupied sector was withdrawing equity. This could lead to negative weights.

Conclusions

- The democratic nature of the HCI makes it suited to measuring the increase in the cost of living for an average household, and should be related to the geometric mean of household income.
- The treatment of insurance distinguishes losses from genuine consumption.
- A focus only on interest payments gives a misleading impression of the average effect of interest rate changes on living standards.
- It is difficult to give a welfare meaning to an index which deflates cash flow. It will, however, also be difficult to apply the principle widely.
- Housing can in principle be accommodated in the cash flow structure, but information on equity withdrawal is needed. Without this, the index would create a misleading impression of the impact of a change in house prices on living standards.