The truth about the RPI
Simon Briscoe
Note produced for the RSS meeting held on 13 June 2018

Summary

The content of “Shortcomings of the Retail Prices Index as a measure of inflation”¹ from the ONS in March seemed unduly one-sided and political for an independent national statistical institute.

The path to the RPI crisis we have today started about 20 years ago when the long-standing governance structure was effectively stood down by Chancellor Brown. One problem followed another: relocation of statisticians to Newport, professional failings in the ONS, a lack of openness, a failure of governance, weakness of UKSA, the take-over of ONS by Treasury/economists (who preferred the new CPI) and naive group think. More recent political trickery (arbitrage between measures by government for dubious reasons) has undermined trust in statistics. Clear thinking in the ONS has been hampered by a worry about index-linked bonds.

RPI has been subject to a lot of recent negative commentary from ONS/UKSA and selected experts. The negativity has centred on its use of Carli though other arguments have been used at times. A lay person would be forgiven for thinking that these resulted from a fundamental change in the RPI. But, the supposed weaknesses of Carli, which have been present for decades, have been exaggerated. The use of Carli renders the RPI neither inappropriate nor invalidates it as a National Statistic.

It’s time for UKSA and ONS to get this most important of statistics back on track. All that’s needed is leadership of UKSA, a look at the data from ONS and a governance framework (that is transparent, open and involving users) that befits the data. The ONS seems to be running afoul of several elements of the Code of Practice.

This note deals with the main claims in the report and the key issues in the debate.

Three families

The ONS is inconsistent: it says that “good measures” of inflation are needed “for a wide variety of uses” but also dismisses the RPI, goes slow on the HCI and relentlessly promotes the CPI. The ONS does not appreciate that the appropriateness of an index (RPI, CPI or HCI) depends on the purpose to which it is being put.

Uses of inflation indices

¹ https://www.ons.gov.uk/economy/inflationandpriceindices/articles/shortcomingsoftheretailpricesindexasameasureofinflation/2018-03-08
There are many different purposes for a price index. No one price index fulfils any one of those stated purposes perfectly. No one index is perfect for all purposes. Considering the purpose of the price index is the obvious starting point for analysing its appropriateness. The ONS manual seems to agree.

**Current uses of the RPI and CPI**

The RPI has been around for 60 years, the CPI for 20. Both measures have a number of well-established and widely accepted uses. On several measures there is more demand for RPI than CPI.

**History of and historical purposes of RPI and CPI**

The differences between RPI and CPI can be understood by their origins and construction. A domestic compensation index reflecting the experience of a typical household is not the same as an international harmonised measure of macro inflation. The relative appropriateness of the two indices varies according to the purposes to which they are being put.

**EU countries and how they handled a new harmonised CPI**

Nearly all EU countries, and all the major ones, give primacy to their own national indices running the harmonised EU measure alongside. The UK is the reverse and an outlier.

**Reflecting the experience of a household**

Household or pensioner experience of inflation is conceptually and numerically different to ‘economy-wide’ inflation. The different weights, population coverage and formulae used are consistent with this. The ONS ‘view’ on this varies according to where you look.

**“General inflation”**

The ONS uses this ill-defined phrase. If it is understood to mean broad macro economy inflation then CPI will be a better measure than RPI.

**What is the numerical difference between RPI and CPI/CPIH**

The ONS fails to give an accurate and reasonable assessment of the gap between RPI and CPI. The gap fluctuates from month to month, had a step change in 2010 and can be conceptually measured in different ways.

**What explains the gap between RPI and CPI?**

The main difference between RPI and CPI is housing and the formula effect. When ONS says that “the problems with RPI are many”, it does not make clear that all bar the formula effect seem to have very limited long-term numerical impact on the difference between RPI and CPIH.
Expert advice and Governance - RPI Advisory Committee

The RPI Advisory Committee ran for 40 years and was then dumped to be replaced by a series of unaccountable bodies and reviews of, in my view, lesser quality. It is very unclear why some recommendations of some reviews have been implemented and others not. Governance has failed to live up the expectations of the Code of Practice for years.

Political interference

For 15 years there was no governance of the ONS or RPI as the Treasury imposed “special arrangements”. There was no transparency in technical developments. A report from the Statistics Commission in 2004 highlighted the problems and nothing was done. The problem with the RPI statistics in 2010 was an accident waiting to happen.

Consumer Prices Advisory Committee

CPAC had only just been constituted when the clothing change was being planned. It might have had little input to the change but could have been stronger in the aftermath, analysing the problem and advocating a quick fix. Generally, it was not transparent and was a fig leaf of governance.

Advisory Panels on Consumer Prices

The panels were slow to be established, leaving RPI/CPI with roughly another three years with no governance in place at a time when it was needed. The panels are still young and have yet to prove their value. Regardless of membership, officials often outnumber independent members at meetings.

Tripartite Group

This group including the Treasury and Bank of England is little known and totally unaccountable. It is hard to believe that ONS policy on consumer prices is independent when a group like this exists. The existence of this group surely means that the standards inherent in the code of practice are not being met. (The OBR has recently joined making it the tetra partite group.)

UKSA

The role of UKSA has been a source of bewilderment. The 2010 UKSA review of the RPI confirmed its status as a National Statistics. The 2013 review revoked the status despite no change being made to the series compilation in the meantime. The lack of transparent work plans, the outsourcing of key reviews, and the prolonged periods without governance, have been unfortunate. And this relates to the one statistic it is required to publish under the 2007 Statistics Act.

Carli v Jevons
The use of Carli is at the heart of the ONS anti-RPI campaign. Carli has been a constant in the RPI since at least the 1950s, and has unchanged mathematical properties over that period. The ‘economic argument’ used to prefer Jevons over Carli, is now discarded. There is no straightforward test for identifying the best formula to use and it is possible to produce hypothetical scenarios in which any of the formulae can be shown to produce reasonable or unreasonable results. The ONS overstates the criticisms of Carli.

**Inflation as a latent variable**

As the true rate of inflation is unknown it is impossible to state categorically that either the RPI or CPI is biased as a measure of the ‘true’ rate of inflation. The ONS acknowledges this in some reports yet still dismisses Carli. The views of the limited circle of experts are nuanced, evolve over time and pay too little attention to data quality, leading to a lack of consensus.

**Assessing the basic formulae**

There are a number of approaches that can be used to assess the various formulae. These have some value, although I regard them all as fairly limited.

**The cost of living versus a price index**

‘Cost of living’ index (COLI) is a loosely used phrase meaning different things to different people. In a professional context, COLI indices are largely theoretical and neither RPI nor CPI is a COLI as technically understood. But CPI has hints of a COLI about it as it uses the geometric mean (Jevons) which implicitly allows quantities to change in inverse proportions to changes in relative prices. Thus, CPI is not a pure price index. The ONS selectively uses the “economic argument” but has not fully expressed its views on this topic.

**The economic approach “flip flop”**

The ONS, Treasury, IFS and others have claimed that use of the geometric mean (Jevons) delivers an index that more closely resembles consumer behaviour – ie the substitution of cheaper goods for more expensive goods as relative prices change. This support for the ‘economic approach’ was strong but has now evaporated. The description of this confusion-causing flip flop as ‘unfortunate’ is an understatement as it has been used widely in the UK and overseas to promote Jevons.

**Axiomatic approach or tests**

The value of an index based on it passing or failing any of the dozens of axiomatic tests of desirable mathematical properties is largely academic. What matters is the numerical impact of any failure. As formulae that ‘pass’ tests can produce duff statistics, the tests need to be viewed in the context of the raw data.

**Impact of the failure of these tests**
The failure of an axiom has not in practice prevented that formula from being used. There is very little real world evidence to suggest that the impact of Carli’s failure to comply with an axiom has had any impact beyond the minimal. It is unprofessional of critics of RPI to use unrealistic numerical examples to undermine the index. The creation of an inflation index is the merger of art and science. Every choice has plusses and minuses, and opportunity costs, which need to be weighed in each case. Nothing is as black and white as the approach of the ONS suggests.

**International approaches**

Other leading countries do not use Carli, but most never did. The handful that have shifted away from Carli in the last few decades have done so for many reasons, some of which are now discredited. Carli is the dominant formula used internationally in producer price indices with no complaints. At the time of HICP harmonisation across the EU, the political imperative was to get the lowest possible published CPI rate (Jevons does that) and to cause the least disruption by setting the most commonly used method as the universal one.

**The change in the collection of clothing prices**

The change in collection processes in 2010 was the root of all the subsequent issues. It was required because the statistics being produced for UK clothing inflation in the CPI (using Jevons) were implausible. The way the change was made revealed deep failings in the skill, professionalism and management of the ONS. The change was clearly intended to be minor but had unexpected and unintended consequences which should have been foreseen if only as it had happened before. It was also a failure not swiftly to correct the problem when it arose.

**The impact of the clothing change on the gap between RPI and CPI**

The formula effect or gap has widened since the change in 2010. There are two main measures of the gap which are about ¼% apart – and they fluctuate over time. It would help the debate if the gaps could be described more clearly and honestly. In any case, the formula effect is not, as it is often presented, a measure of the extent to which RPI is ‘wrong’. The true measure of inflation is simply not known.

**Consequences of the clothing change**

The changes to the collection of prices were made with the express aim to improve the measurement of consumer price inflation. As the indices are of known construction it is hard to see how improved data can render an index obsolete or no longer worthy of use. A different change in the collection of clothing prices in the late 1990s also widened the formula effect and the use of RPI carried on unaffected. It should be no different this time. The policy response from UKSA and ONS since 2010 has been slow, professionally weak and indecisive.

**Is the clothing component of RPI numerically “wrong”?**
Clothing inflation as measured by the RPI has probably been too high since 2010. Yet the RPI is not as wrong as critics claim. Clothing inflation is notoriously hard to measure and RPI should not be damned by silly prices for strappy tops which are \( \frac{1}{30} \)th of one percent of the index. The collection of raw prices needs to be reviewed.

**The CPI’s measurement of clothing pre 2010 was terrible**

Over two decades to 2011, clothing prices as measured by CPI implausibly more than halved, when the CPI as a whole was up by more than a half. The CPI clothing was more “wrong” for much longer pre-2010 than the RPI clothing is now. Due to its larger weight, its damaging impact on CPI was greater too. The situation pre-2010 needed to be addressed and so does the situation post-2010. Jevons was no more the only reason for the problem before 2010 than Carli is the reason now.

**Prohibition of the use of Carli**

Critics of RPI sometimes say that the use of Carli has been banned by the EU. This is not true. Although its use is discouraged and limited.

**The measurement of clothing in many EU countries does not look to be fit for purpose**

The use of Jevons creates implausible statistics just as Carli can. The UK was getting bad statistics from Jevons (for clothing, pre-2010) and that continues to be the case for several EU countries. Over the last decade Polish and Bulgarian aggregate CPIs showed almost identical growth yet one saw clothing fall by 37% and the other saw it rise by 17%. These and other comparisons show implausible trends suggesting that it must be the price collection of the clothing that is different in each country as all use Jevons. The EU does not publish detailed data for the clothing components so we cannot see how bad the problem is. There is no evidence that Jevons is a “far superior” measure of clothing inflation.

**Owner occupiers’ housing costs**

The measurement of owner occupier costs is theoretically complex and riddled with data weaknesses and shortages so there is no prospect of agreement. To satisfy users, all measures should be published with and with OOCs.

**Mortgage interest payments**

MIPs is used in the RPI and has been for over four decades. Users who want it excluded can use RPIX – it is not for ONS to force a single measure on users. MIPs does introduce a volatility into the annual measure but the impact is short-term, infrequent and with no long run distortion. For the many households with mortgages it is a very real cost and needs to be included.

**Depreciation**
Depreciation has been in the RPI for over two decades. It is not a perfect measure of “large but infrequent” owner-occupier costs, but it is a perfectly respectable one, and there is no alternative which is obviously better. The construction of an index is an art not a science; it requires a range of compromises.

Take-over by economists and “economic thinking”

ONS seems to produce many statistics by economists for economists. In the case of consumer prices, there is no understanding of non-economists users. The rise of economists in the ONS is hard to explain, has some benefits but could already have gone too far given the dominance of economic group think.

Bias and an open mind

The ONS economists’ group think around some data does not give due weight to user needs. The ONS cannot approach the merits (and failings) of the RPI and CPI in a balanced way, discussing many issues with a dangerous bias. CPI underestimates inflation and the evidence indicates that it especially underestimates inflation as experienced by the average household and average pensioner.

Weights

There are a number of differences between the weights in the CPI and RPI and each has its origins in decisions made at some point, in good faith, bearing in mind aims of the index. Each has merits and makes one index or another more appropriate for each different use.

Population coverage

The CPI aims to cover aggregate spending in the country and not the spending of a typical household. Since 1956, the poorest pensioners and highest earners have been excluded from the RPI because they tend to spend their money on atypical items. The differences reflect the aims, spirits and uses of the indices. They also affect the numbers – as higher spending households tend to experience lower rates of inflation than lower spending households, their inclusion in the CPI will give a rate lower than that experienced by a typical household. The RPI is, on that basis, more suitable for the uprating of benefits.

A pensioners’ RPI?

The “Pensioners’ RPI” (once published by ONS) did not purport to be a measure of inflation for all pensioners or all pensioner households. The indices cover just those pensioners excluded from the main RPI. It is no longer published but its typically low rate did not reflect the experience of all pensioners.

National Statistics status

The de-designation of the RPI was a curious decision that implies that the RPI became inappropriate between 2010 (when UKSA confirmed that RPI should be a National Statistic)
and 2013. This is despite Carli having been used in RPI for many years, and its supposed theoretical defects being well-known. The reasons why UKSA changed its mind in 2013 are unclear.

The change to the collection of clothing prices in 2010 was at the time viewed as a routine adjustment intended to improve the accuracy of clothing inflation. There is no basis on which it can be said that better data made RPI a ‘worse’ measure of inflation. New raw data cannot cause RPI’s construction to become bad in some way. A similar change to clothing prices in 1996 also widened the formula effect and attracted little attention. It is unclear why ONS and UKSA did not raise this in the 2010 or 2013 assessments. But it looks like the data is still the right data.

The significance of NS status

High profile statistics that have been de-designated as National Statistics still remain widely used today. The fact that RPI has been de-designated has not led to any principled reduction in the use of the RPI – switches have only been by those looking to reduce what they pay out. The RPI remains the same technically as before. On the basis of the usage figures available, RPI remains more popular than CPI. This is not surprising in light of the clear benefits which RPI has for use in the uprating of pensions and the measurement of how households are affected by rising prices.

Freezing the RPI

The consequences of the decision to ‘freeze’ RPI remain entirely uncertain. RPI has continued to be updated, and the National Statistician has indicated that RPI will be updated as required to keep it “fit for purpose”. Again, it provides no basis to conclude that RPI has a problem. If anything, the decision will ensure the continuity of RPI by preventing any significant change being made to the formulae used in the elementary aggregation stage of RPI.

Revisability

Once published, the RPI for a particular period is never revised. This is precisely because it is used for so many legal contracts. To have to reopen settlements in the event of revised data would be a nightmare. The CPI and its derivatives can be revised and have been several times. As CPI is governed by EU rules, the UK authorities have little control over revisions.

The BT pensions case and its impact on RPI

Pension funds are often running deficits and have eyed the Treasury cutting public sector pension payouts by shifting from RPI for upratings to CPI. BT could shift if the RPI had been so amended as to invalidate it as a continuous basis for calculating increases. The judge ruled it had not and this supports my view that the RPI is essentially the same beast it was pre-2010.

A change is not an amendment
The RPI like most statistics is constantly being updated but such changes do not amount to fundamental amendments that “invalidate it as a continuous basis” for measurement. They are part and parcel of the continuity of RPI so that evolves to remain fit for purpose. The character of the index has not been changed and there is no break in the series such that figures before and after the change cannot be compared on a ‘like for like’ basis. An amendment would need to: alter the underlying purpose of the RPI; materially alter the coverage of the RPI; or materially alter the construction of the RPI. None of these have happened.

Has the purpose of the RPI changed?

Compromises have to be made in index construction which may introduce aspects which are arguably inconsistent with its purpose, but which viewed in the round do not in fact involve any change in the purpose of the index as a whole.

Has the coverage of the RPI changed?

The basket of goods in the RPI is updated every year. Should the update be made every other year, it would not be material but should the basket be fixed in perpetuity, it would be a material change. It is the principle not the numerical effect that matters – ONS/UKSA and I differ on that point. The effect in the index cannot be predicted accurately and might change over time so it would not be a reasonable basis to be making such judgements, as UKSA has with the RPI.

Has the construction of the RPI changed?

It is widely agreed that the construction of the RPI has not changed. The Bank of England is also of the view that the character of the RPI is the same and there has not been a “fundamental” change. It is accordingly hard to understand the BoE view that seems to support so strongly the de-designation of, and the advice not to use, the RPI.

The Bank of England, the “city” and index-linked gilts

The Bank of England agrees to and the Chancellor has a veto on any changes to the RPI. This is because some indexlinked gilt investors have a right to redeem their holding if the change is both “fundamental” and “materially detrimental” to their interests. There is a strong suspicion that the risk that a statistical change could land the nation with a large bill has been detrimental to the RPI. It has possibly caused ONS not to act in the best interests of the statistics, almost second guessing what the Bank and Treasury might think. The ONS should not have been timid but the number of gilts remaining that have this commitment is modest and the market price such that there is in effect no risk of the government having to reimburse holders. A change to the RPI that was likely to affect future reported inflation rates would have some impact on the market, but in all probability the market movement would be very modest.

The ONS, the RPI and the Code of Practice
There are several areas where ONS and UKSA might have fallen foul of the Code since the 2007 Statistics Act was passed.

**Brexit**

Post-Brexit, the UK cannot be reliant on the EU-defined CPI. This is another reason to get the RPI back in the fold. The CPI in effect is outside the remit of the Code as ONS is obliged to implement any changes that the EU requires in the name of harmonisation.

**The future**

The last decade has seen many problems with the management of the RPI. The solution is easy though and in two parts. First, research needs to be carried out into the collection of clothing prices, and change made, as neither the RPI nor CPI is good enough at the moment – this is modest evolution over time not major revolution. Second, the ONS needs to have a clear and agreed plan for future development. It needs to be developed and operated in the open not behind closed doors – and by the ONS, under UKSA guidance, and without closed groups. The public and financial markets need to know what’s coming. This is easy but can only happen if ONS and UKSA let their thinking on Carli evolve and look at the realities of index construction.