

[Junk statistics on the carrier bag charge](#) [1]

Written by [Chris Snowdon](#) [2] | Tuesday 25 September 2012

I was intrigued by an interview on Sky News last week with Tamsin Omond, an environmental campaigner from Climate Rush. A keen supporter of levying a 5p charge on plastic carrier bags, she claimed that in Wales where such a law has been in force since October 2011 use of these bags has fallen by 95 per cent.

This is a remarkable and barely believable statistic and the Sky presenter looked suitably sceptical (see video below from 3 minutes in). It fell by 95 per cent? Over how long a period? Osmond replied that because it's only been in place for a quarter of the year, use fell by 22 per cent over the last quarter...? So you extrapolate that through? Exactly?

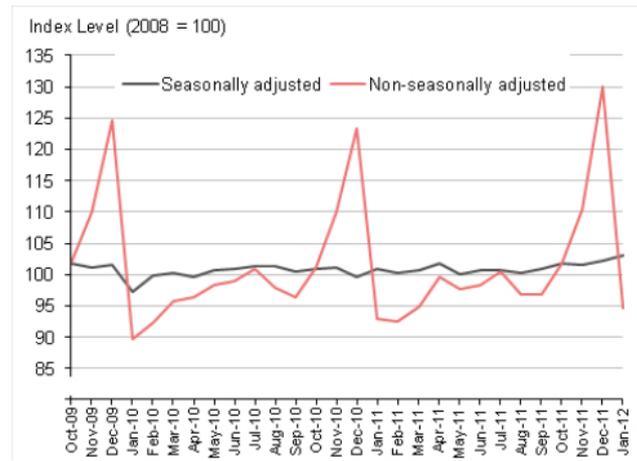
Hmm. That's quite an extrapolation. If we look at the [figures](#) [3], we can see that the average number of plastic bags used in Wales fell from 9.7 per person in 2010 to 7.6 per person in 2011. This, indeed, is a drop of 22 per cent. Such declines are not unprecedented. Plastic bag use fell by 22.5% in England in 2008, for example (presumably because of the credit crunch), but since Wales was the only part of the union to record a significant fall in use in 2011, it is reasonable to assume that the plastic bag charge played a role.

But does this equate to a 95 per cent reduction overall? To reach this figure, the campaigners have assumed that there was no decline in plastic bag use until the 5p charge came in on October 1st. If so, the annual rate could only have fallen by 22 per cent if the last quarter saw plastic bag use plummet by 95 per cent. They further assume that plastic bag use will remain at a five per cent of the pre-levy rate throughout 2012 and forevermore.

This logic does not stand up to scrutiny. Firstly, the basic maths is wrong. If the levy introduced in the final quarter was responsible for the entirety of the 2011 drop, it would mean an 88 per cent decline in that quarter, not 95 per cent. This would be nit-picking if the other assumptions were sound, but they are not. There is no reason to believe that plastic bag use was not already declining in the previous quarters. In the months running up to the 5p levy, the government, shops and the supermarkets informed the public that the charge was about to be introduced and it is fair to assume that people were already being weaned off free carrier bags to some extent before October 1st.

Moreover, the last quarter of the year is not a typical retail period. The pre-Christmas period is the food and retail sector's busiest time (see graph below from the [Office for National Statistics](#) [4]) and, therefore, it is the period in which a disproportionately large number of plastic bags are consumed. Doubtless, the plastic bag levy led to fewer bags being used between October and December, but it is wrong to assume that the decline in the absolute number of bags used will continue during quieter shopping months when fewer bags are used overall. That, however, is exactly what campaigners have done.

Chart 1: All retailing sales volumes, October 2009 to January 2012



Looking at the survey data, it seems clear that the 5p levy did not lead to a 95 per cent reduction in plastic bag use, nor anything close to it. [Figures from the British Retail Consortium](#) [5] show that the number of shoppers [in Wales] who said they had used their own bags on their last supermarket trip rose from 61% in September 2011 to 82% by April 2012. In other words, the number of people who didn't use their own bags in supermarkets fell by half. This is all well and good, but it is some distance from 95 per cent. Research from Cardiff University found that the number of people who always take their own bags when shopping rose in Wales from 27% (42% in supermarkets) before the introduction of the charge to 43% (64% in supermarkets) afterwards. This is an increase of about 50 per cent and many would applaud it, but it is not congruent with the claimed 95 per cent drop in plastic bag use.

None of this is intended to suggest that the Welsh policy is necessarily misguided. Clearly, there has been a marked decline in plastic bag use which many would welcome. Equally, we know that such laws have unintended consequences, such as the tenfold increase in the sale of black bin bags in Ireland after similar legislation was [introduced in 2002](#) [5]. The point is that policy should be based on sound evidence rather than hyperbolic claims from special interest groups. It is easy to bandy impressive figures around, but when one digs a little deeper, they often turn out to be built on weak foundations. Time will tell what effect the Welsh levy has had, but the available evidence suggests that the 95 per cent figure is a junk statistic based on dodgy mathematics and unsound assumptions which should not be taken seriously.

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- [1] <http://www.adamsmith.org/blog/junk-statistics-on-the-carrier-bag-charge>
- [2] <http://www.adamsmith.org/authors/chris-snowdon>
- [3] <http://www.wrap.org.uk/content/new-figures-carrier-bags-use-released-wrap>
- [4] http://www.ons.gov.uk/ons/dcp171778_250868.pdf
- [5] <http://www.eaem.co.uk/news/wales-plastic-bag-charge-success-making-england-likely-follow-suit>
- [6] http://disqus.com/?ref_noscript
- [7] <http://disqus.com>