

WELFARE GAINS FROM OPENING UP PUBLIC SECTOR INFORMATION IN THE UK

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ABSTRACT. This brief paper applies the results of Pollock (2009) and Pollock et al. (2008) to providing a simple estimate of the welfare gains to UK society from opening up access to digital, non-personal, public sector information (PSI) for use and reuse.

1. THE ESTIMATE

From Pollock (2009) and Pollock et al. (2008), an estimate for the gains from ‘opening up’, that is moving to marginal-cost pricing, for digital public sector information is given by following formula (see Appendix below for details):

$$\text{Gains} = \frac{2}{5} F \lambda \epsilon \quad (1)$$

Where F is the revenue under average cost (the current regime), λ is the ‘multiplier’ and ϵ is the elasticity of demand.

What figure should we use for F , the total revenue under the current, average cost regime? From OFT’s Commercial Use of Public Information Report Office of Fair Trading (2006) Annexe A we have an estimate for total income from sales of PSI in the UK of approximately £400m. The figure has likely increased somewhat in the 5 years since the OFT did their survey. Furthermore, this figure does not, of course, include any estimate of the amount of income that would have been generated by PSI

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that was not sold or simply not available – of which there was clearly a substantial amount.

At the same time not all of this information would be digital material, though with the progress with technology it is likely that an increasing amount of this material is digital. Taken together, a figure of around £400-550m would seem a reasonable range for the total revenue (F).

For λ and ϵ there is a summary in Pollock (2009) of likely ranges. Based on these we have:

- Upper end estimates using $\lambda = 8, \epsilon = 3.5$ give gains of **approximately £4.5bn-6bn a year.**
- Middle range estimates of $\lambda = 5, \epsilon = 2$ give gains of **approximately £1.6-2bn a year.**

In considering these ranges for the multiplier, λ , and the elasticity, ϵ , it is important to remember the variety of benefits that these include. First, there are the gains from the development of new informational products and services built directly on the PSI. Second, and perhaps even more importantly, there are also the gains from the development of complementary product and services, such as software tools and consultancy utilizing public sector information.

Third, there are the more indirect benefits, such as the reduction in transaction costs to users and reusers of the information. Fourth, and relatedly, there the potential efficiency gains in the public sector from access to better, more timely information (putting these at one tenth of one percent (0.1%) of total annual government expenditure year would imply gains of around £600m per year).

One could extend this list with even more examples, but the basic point is clear: the benefits from opening up data are not confined to a single specific area but flow from a broad range of improvements across a wide spectrum of society.

APPENDIX A. GAINS FORMULA

In Pollock (2009) we established (p. 29) the following formula for an estimate of the gains of moving from average cost to marginal cost pricing for digital PSI:

$$\Delta W = F \left(-(1 - \theta)(1 - g) + \theta \frac{\lambda \epsilon}{2} \right)$$

Where ΔW is the welfare gain, F is the Revenue under average cost (the current regime), θ is the ‘distributional weight’ for this area, g is the proportion of sales to government, λ is the ‘multiplier’ and ϵ is the elasticity of demand. With a little rearrangement we have:

$$\text{Gains} = \frac{\theta}{2} F (\lambda \epsilon - 2(1 - \theta)(1 - g))$$

θ was estimated (p. 30 of *ibid*) at ≈ 0.8 hence:

$$\text{Gains} = \frac{2}{5} F \left(\lambda \epsilon - \frac{1 - g}{2} \right)$$

The right hand, negative, term in the bracket relates to the government financing of the shortfall in revenue to PSI-holders from moving to marginal cost. In many cases it is possible for this shortfall to be made up not out of general government funds but on the ‘write’ side of the PSI-holders operation, e.g. by slightly increasing the registration charges at registration-based PSI-holders such as Companies House or the Land Registry.¹ If this were so, the term would be zero (assuming, plausibly, that the distributional weights on ‘writers’ and ‘readers’ of PSI were the same). Even, where this is not possible, as for example with the Met Office, the proportion of government revenue is already high (over 50% for the Met Office). In this case this term will be less than a quarter. Relative to the likely size of $\lambda \epsilon$ this will be very small and we will therefore simply neglect it.²

¹More details on this can be found at <http://www.rufuspollock.org/economics/papers/psi-funding-options/>

²For anyone concerned by this neglect, consider that, as discussed above, F is £400-550m so the effect of this neglected term at its maximum (if $g = 0$) is $F/5$ which is less than \approx £100m.

REFERENCES

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