Review of Wholesale Broadband Access Markets

Comments on Professor Nankervis revisions of econometric modeling in BT's first consultation submission

By Frank Verboven, 12 November 2010

In August 2010 I made a number of comments regarding the econometric analysis of Professor Nankervis. In response to this, Professor Nankervis has adequately clarified a data question, and he has also done several sensitivity analyses, which broadly support the earlier conclusions regarding market share effects (as I also had expected).[1]

I also suggested to look at the total penetration effects from entry instead of market share effects, and not only at growth effects but also level effects. In response to this, Nankervis has estimated a linear model to explain the level and growth of total penetration during the period October 2008 to March 2010. While the analysis appears careful, I have the following two comments:

(1) The new evidence does not seem to provide unambiguous support for the claim that the effect of three LLU operators competing with BT is similar to the effect of two LLU operators competing with BT.[2]

(2) The new evidence is somewhat limited, as it only focuses on the number of LLU operators and for example does not look at the identity of the different LLU operators. It does not dismiss the evidence that has been presented in Ofcom's consultation.

In the remainder, I will elaborate on the first point.

The dependent variable of the econometric model is the total penetration rate of BT and the LLU operators (with an assumption on Virgin Media since data on Virgin Media's penetration are available for one month only). The model includes fixed effects to allow for heterogeneity in levels and growth rates across local exchanges. The main variables are:

- $S1, S2, \ldots S5$: level effects for the presence of $1, 2, \ldots 5$ LLU competitors to BT

- $S1*TR, S2*TR, \ldots S5*TR$: growth effects for the presence of $1, 2, \ldots 5$ LLU competitors to BT.

The results are summarized in the table below.

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[1] See John Nankervis, Response to the review by Professor Verboven of econometric modeling in BT's first consultation submission, report prepared on behalf of BT, 28 September 2010.

[2] From Nankervis discussion, I presume the cases with three LLU competitors refer to LLU firms and not to Virgin Media. If correct, the analysis does not appear to make a distinction between markets where Virgin Media is and is not present as a competitor.

Table 1: Effects of number of LLU operators on total penetration (October 2008 – March 2010)

	Number of LLU CPs competing with BT				
	1	2	3	4	5
Estimated level effects at start (October 2008)	0.8%	0.8%	0.8%	0.6%	1.2%
Estimated annual growth effects during period	-0.3%	-0.3%	-0.2%	-0.1%	-0.2%
Estimated level effects after 18 months (March 2010)	0.35%	0.35%	0.5%	0.45%	0.9%

The first two rows are from Nankervis. They show the effect of the number of LLU operators (in addition to BT and presumably Virgin Media depending on whether it is present) on total penetration. I have added the third row, which is computed from the first two rows (rounded numbers) and shows the effects on the penetration level after 18 months or 1.5 years (e.g. 0.8% - 1.5 × 0.3% = 0.35%).

Nankervis concludes that the effect of a third competitor is similar to the effect of a second competitor on both the level and growth rate in total penetration.

- The effect on the level of total penetration at the start of the period is indeed the same for markets with two and three LLU competitors (0.8%).
- The growth effects however seem different (-0.3% versus -0.2%). It is however not possible to see how much they differ, because they are rounded. Furthermore, the t-statistics show that only the negative growth effects in markets with one and two LLUs are significantly different from 0, and those of markets with three, four and five are not.
- Using the rounded numbers (and ignoring insignificance), the cumulative effect on the level of total penetration after 18 months is not the same, i.e. 0.35% for markets with two LLU competitors versus 0.5% for markets with three LLU competitors (but significance cannot be assessed with the available information).
- More generally, the cumulative effects after 18 months suggest that the level of penetration is higher in markets with three, four and especially five LLU competitors than in markets with one or two LLU competitors (and lowest in markets with only BT).

It is not obvious what to conclude from this in terms of testing BT's central hypothesis, i.e., that three suppliers in a local exchange (including BT) are sufficient for the market to be sufficiently competitive.

- On the one hand, there seems to be a difference in total penetration between markets with two and three LLU competitors after 18 months, though with the available information it is not possible to assess its statistical significance.
- On the other hand, even if the difference were statistically significant after 18 months, the magnitude of the effect of the number of LLU operators on total penetration does not appear to be very large, regardless of the number of operators. So the evidence does not clearly imply whether three operate are sufficient for a market to be effectively competitive.