

Critique of Mr. Waters' Analysis of the Effect of Unbundling on Broadband Adoption

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November 14, 2003

No Connection between “Long Term Benefit of End Users” and Broadband Penetration

- Commission has correctly concluded that no necessary relation exists between long-term economic welfare gain to end users and broadband penetration (para. 138)
- Demand for broadband services is a derived demand from the demand for applications
- Have high narrowband penetration in NZ
- Thus, increasing broadband penetration is not an appropriate objective
- Instead a CBA, correctly done, measures the long term benefit to end users.

Does LLU Drive Broadband Penetration Growth?

- Mr. Waters presents data in para. 4.2-4.3 linking broadband penetration growth rates in 12 EU countries with unbundled and wholesale DSL sales
- No econometric analysis
- “Correlation does not prove causation”
- Only 12 countries and 2 periods—not enough for reliable statistical inference
 - Claim of “high R²”—actually not statistically significant since F statistic is only 1.17
 - F statistic needs to be over 2.5 to be significant—less than ½ as large as need be.

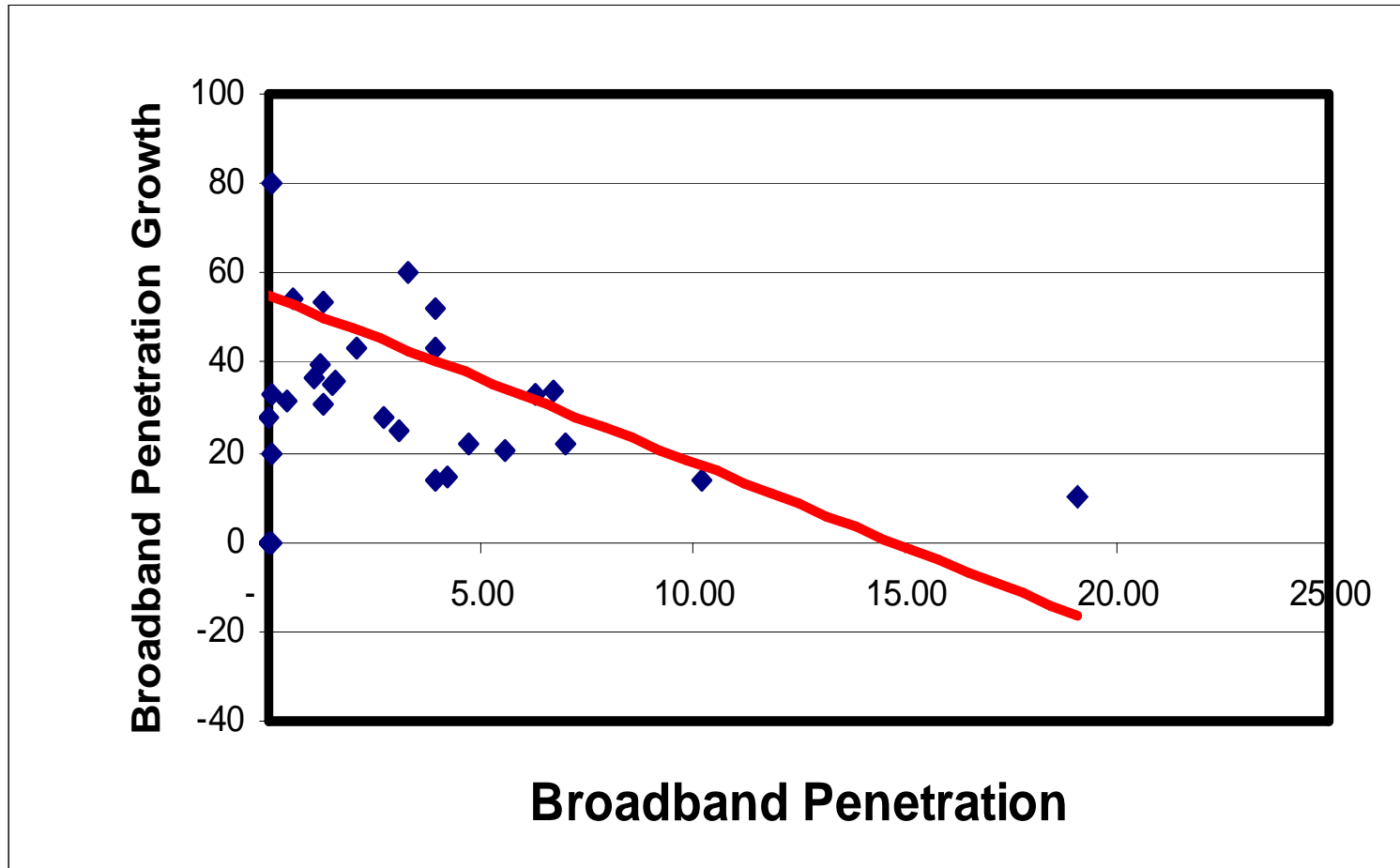
“Correlation Does Not Prove Causation”

- Can the correlation be transferred to other countries?
- Not causal if it cannot be transferred.
 - NZ DSL growth rate between October 2002 and April 2003 is 44% comparable to France which is the second right-most point in Waters Figure 10 yet NZ has no unbundling
 - US with highest number of unbundled lines yet has a broadband growth rate of about 20% in 2002—about 1/2 half as high as NZ
- Cannot conclude anything about the effect of unbundling from looking at correlations

Does High Broadband Penetration “Cause” Low Broadband Growth Rates and Vice-versa?

- Regression of broadband penetration growth on broadband penetration gets a negative relationship with $R^2=0.77$
 - Higher than Mr. Waters R^2
 - Thus, could conclude that high broadband penetration “causes” low broadband growth and vice-versa
- What Mr. Waters is finding is that you get high growth rates in countries with very small installed broadband penetration
 - Usual result from “diffusion curve” analysis
 - The three highest growth rates are for IT,UK, and PT which correspond to the 3 EU countries with the lowest broadband penetration
 - Removing these countries and France leads to a finding of no relationship
 - Danger of small samples and incorrect statistical inference.

Broadband Penetration Growth and Broadband Penetration, OECD June 2002



No Statistical Relationship Between Regulation and Broadband Penetration

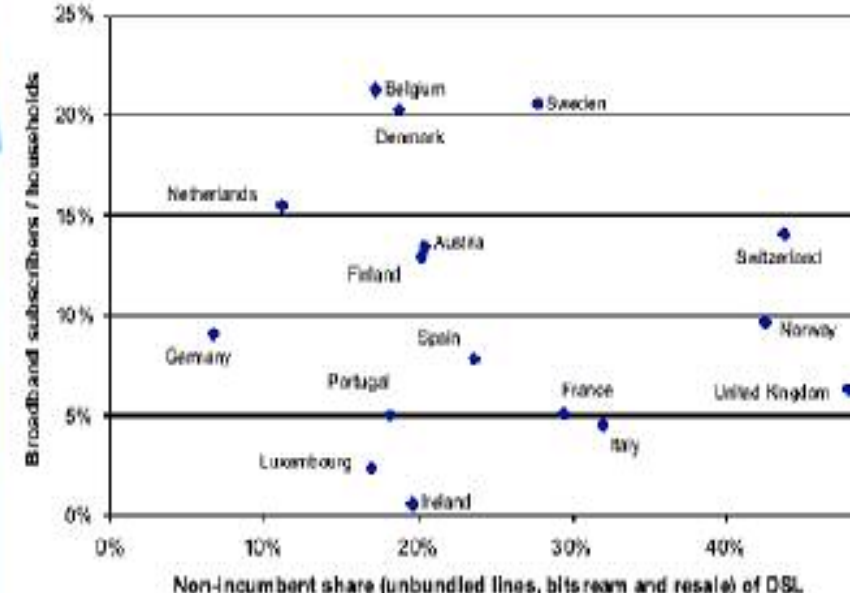
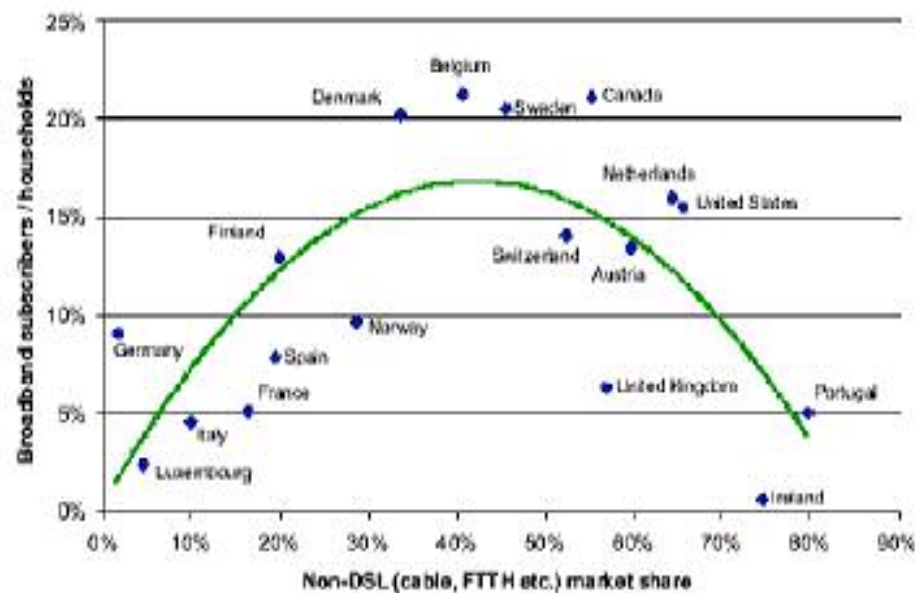
- Should be interested in relationship of regulation and penetration
- D. Maldoon and G. Sidak, “Competition in Broadband Provision and its Implications for Policy”, October 2003
 - “Facilities based competition is preferable where it is feasible” (Data Jan-June 2003)
 - “Mass-market penetration driven by platform competition, not regulated access”(Data Dec 2002)

Platform competition key to broadband penetration



...platform competition...

...not regulated access



Penetration

Uneven shares ← Even shares → Uneven shares

Access takeup

Conclusions

- Mr. Waters offer no valid statistical analysis
- Contrary to his claim, he does not a significant relationship between % of unbundled lines and broadband growth
- Complex relationship between broadband growth, penetration, price, income, and other factors
 - My previous published research (2002) found that relative price of broadband to narrowband is a factor in broadband penetration
- Correlation does not prove causation
- Finding of inverse relationship of penetration and growth is usual diffusion curve finding
- Overall, expect low penetration countries to exhibit initial higher growth and vice-versa