

Spectrum Policy

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Thomas W. Hazlett,
“Property Rights and
Wireless License Values”

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Spectrum v. Licenses

- Status quo: Operating Permits
- Spectrum allocated administratively
- Restrictions impose inefficiency
- Cartel enforcement devices

37 Concerned Economists (Feb. 01)

- Full Liberalization
- Relax all use restrictions
 - Services
 - Technology
 - Business models
- Exhaustively license spectrum
 - Overlay rights (as in U.S. PCS)
 - Entry via ‘cheap spectrum’ policy

Two Objections

- Windfalls not equitable
- A better way to allocate spectrum:
unlicensed
- Result: No substantial progress in USA

Windfalls vs. Efficiencies

- Flexible use => productive
 - Analog cellular licensees awarded digital rights
 - Voluntary reallocation of UHF TV spectrum
- Property rights = Windfalls

‘Which Way, Senator Fall?’

- Windfalls: positive or negative
 - More efficient, more profitable
 - More efficient rights, less exclusivity
- Rights are inter-related
 - Incremental rights issued to license class
 - Rights are implicit precedents
- License value changes are ambiguous

Empirical Test

- Value of Wireless Phone Licenses
- 42 license auctions in 27 countries (95-02)
- 1,438 licenses (1,080 USA)
- Liberal Dummy with extensive wireless property rights
 - Australia
 - El Salvador
 - Guatemala
 - New Zealand

Control Variables

- Income per capita
- Population in licensed area
- Density and Urbanization
- NASDAQ Index @ auction close
- Market concentration (HHI)
- 3G
- Incumbent dummy
- Bandwidth allocated to license
- 800/900 MHz dummy
- License term
- Auction type dummy (First price sealed bid = 1)
- Fixed telco service rates
- Economic liberty index
- USA dummy

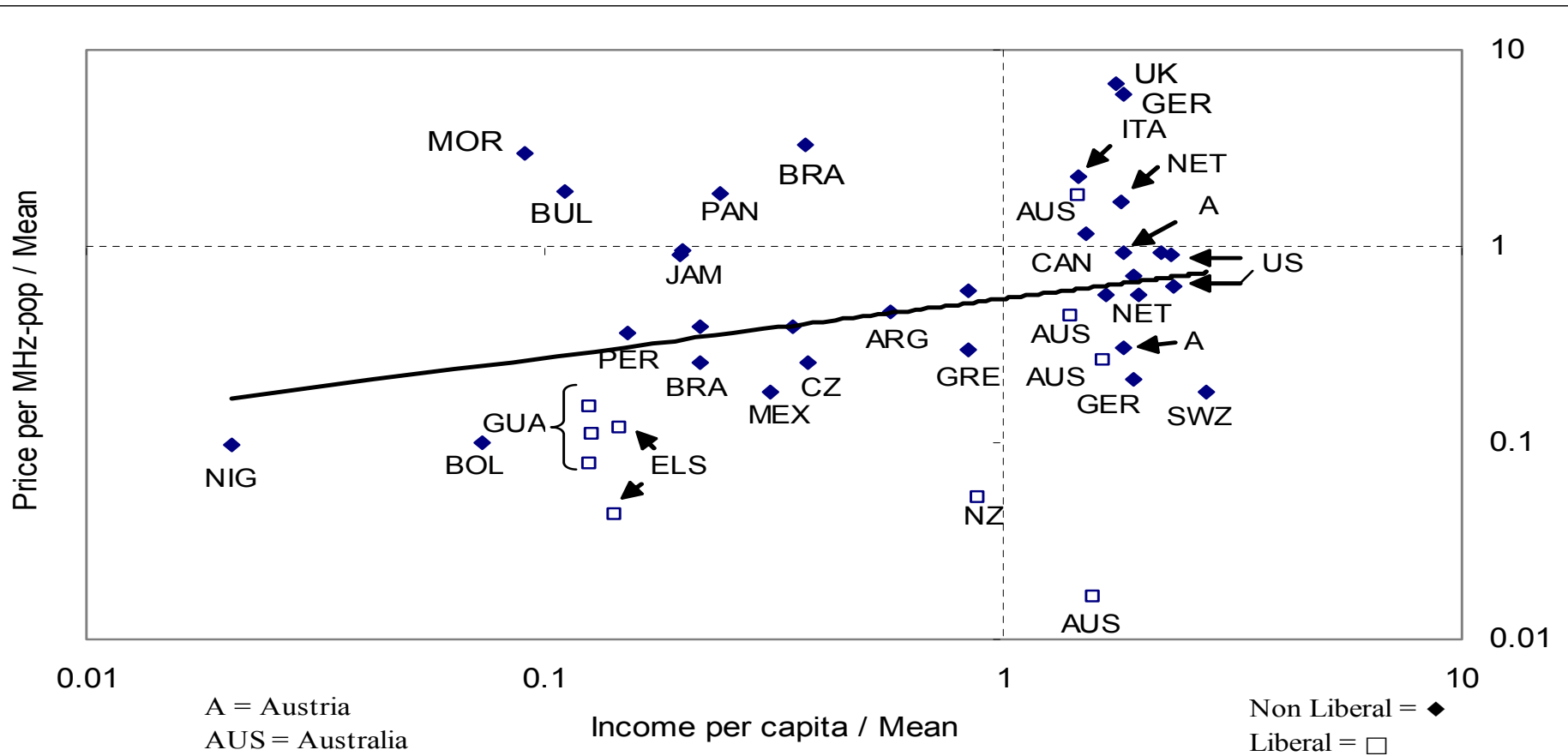
Log Log Results

- Income per capita +
- Population in licensed area +
- Density -
- Urbanization +
- NASDAQ Index @ auction close +
- Market concentration (HHI) +
- 3G +
- Incumbent dummy +
- Bandwidth allocated to license +
- 800/900 MHz dummy
- License term
- Auction type dummy (First price sealed bid = 1) +
- Fixed telco service rates + (connect)/ - (call)
- Economic liberty index +
- USA dummy +

Liberalization Effect

- Statistically significant
- Negative
- 38% price difference
- From standard allocation to “full” liberalization reduces license rents

Mean price/MHz/pop v. income per capita (values relative to the sample mean)



Implications

- Economic Theory:
 - Helps explain regulatory capture
- Public policy:
 - Equity issues “solved” by extensive liberalization
 - “Cheap spectrum” policy via property rights
 - Social gains large, as lower license values reflect that more efficient markets and lower retail prices are anticipated

Look Busy... or Be Busy?

- Experiments in spectrum property rights encouraging
 - Even as momentum lost to “substitute” policies in USA
- From Heresy to Passé Orthodoxy... all without ever having been implemented



May 3, 2002

Spectrum Auction Delay Hits Fast Track

By Roy Mark