

Access pricing issues in mobile termination

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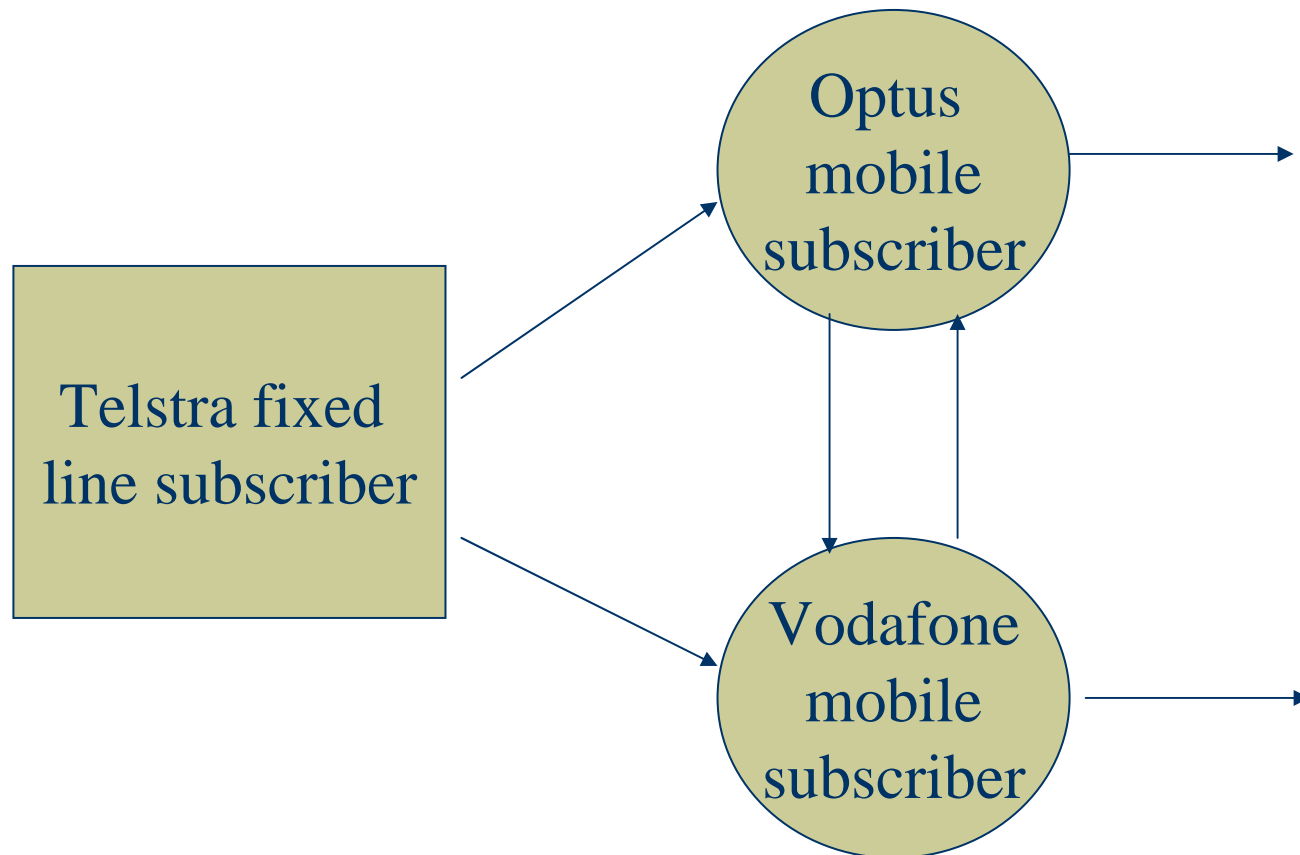
Questions to address

- Is call termination a bottleneck?
- Are there alternatives to regulating termination?
- Focus on mobile to illustrate answers

The termination bottleneck

- ◆ The standard bottleneck access problem
- ◆ OFTEL 1997 “Mobile network operators, like all network operators, have a monopoly position over the ‘termination’ of calls on their own networks. Operators have such a monopoly position because when someone wants to make a call to a mobile, or any other phone, then the calling party has no choice but to call the network to which the called party has subscribed”

Traditional view of termination



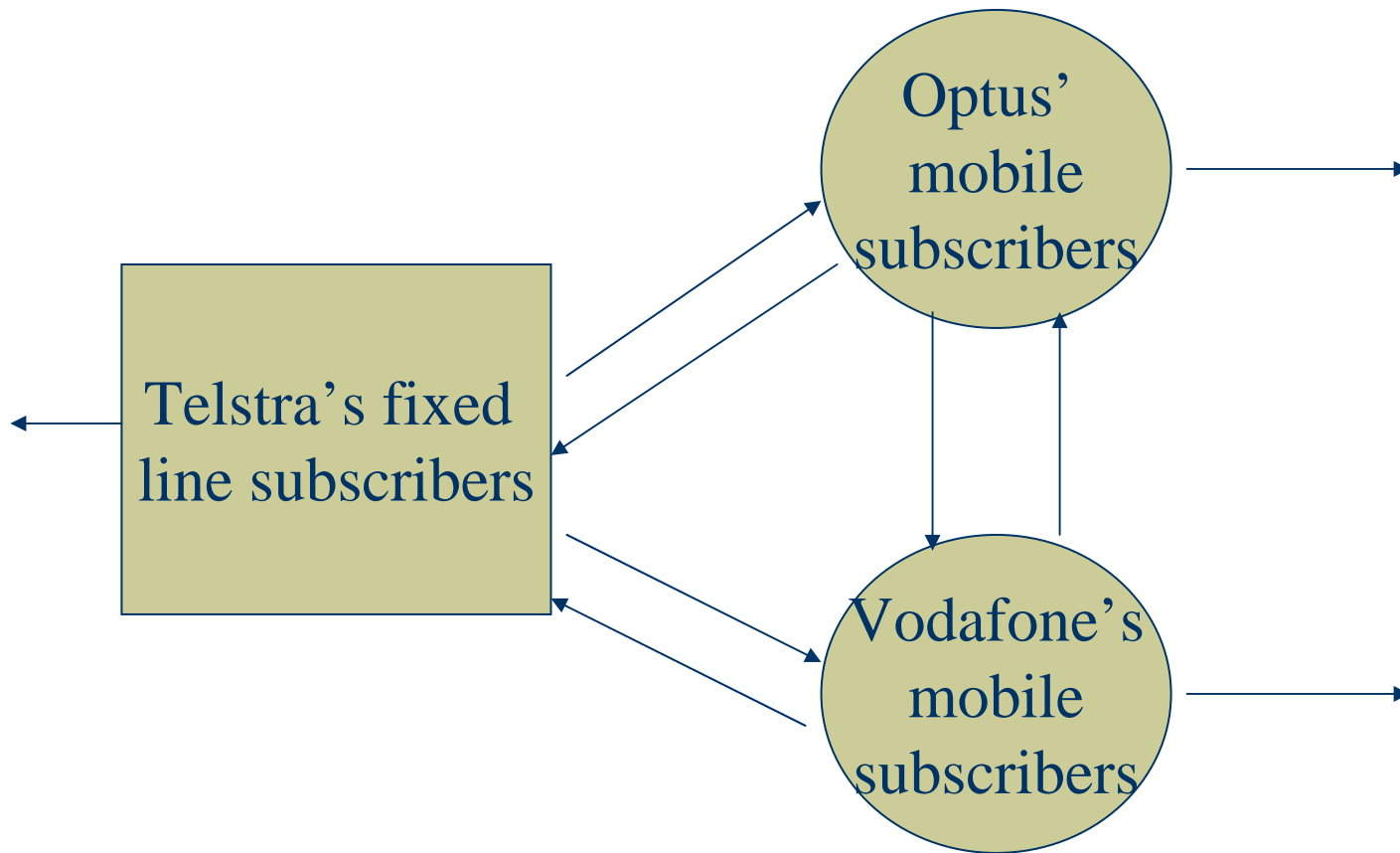


Misses two important features

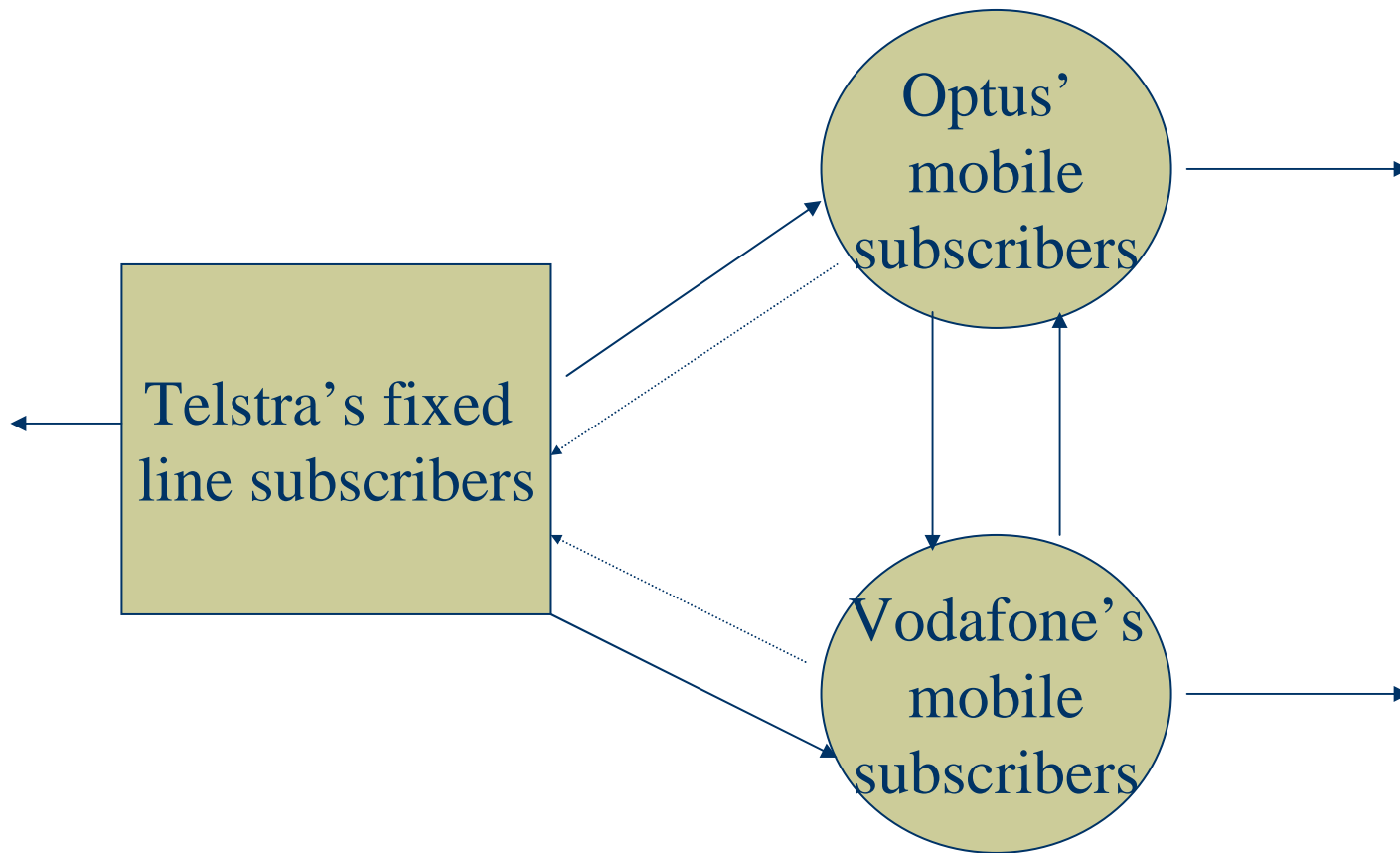


- ◆ Role for bargaining between networks
- ◆ Role for substitution across technologies

I. Bargaining



Allowing Telstra to say “no”



Implications

Armstrong and Wright (2007)

- ◆ Mobile operators make offers
- ◆ Fixed line network can reject
- ◆ Fixed line accepts lowest offer
- ◆ Mobile operators identical competitors
- ◆ 100% penetration
- ◆ In equilibrium, mobile firms offer socially optimal termination charge

Hong Kong (OFTA)

- ◆ 5 fixed networks + 5 mobile networks
- ◆ No dominant operator
- ◆ Strong countervailing power against ‘terminating network monopolies’
- ◆ FTF interconnection is already deregulated
 - no market failure so far
- ◆ MTM was never regulated
 - no market failure
- ◆ Proposing deregulation of FTM

Hong Kong 2006

Caller	Receiver	Regulated?	Interconnection charge (USD)			Retail prices
			Termination	Origination	Name	
Fixed	Fixed	No	0.4¢	-	CPNP	Flat-rate
Mobile	Mobile	No	-	-	BAK	Flat-rate
Fixed	Mobile	Yes	-	0.6¢	MPNP	Flat-rate
Mobile	Fixed	Yes	0.6¢	-		Flat-rate

FTF: caller party's network pays (CPNP)

FTM: mobile party's network pays (MPNP)

MTM: bill and keep (BAK)

HK Telecommunications User Group

“It was the lack of regulation that drove mobile tariffs in Hong Kong to probably the lowest in the world”

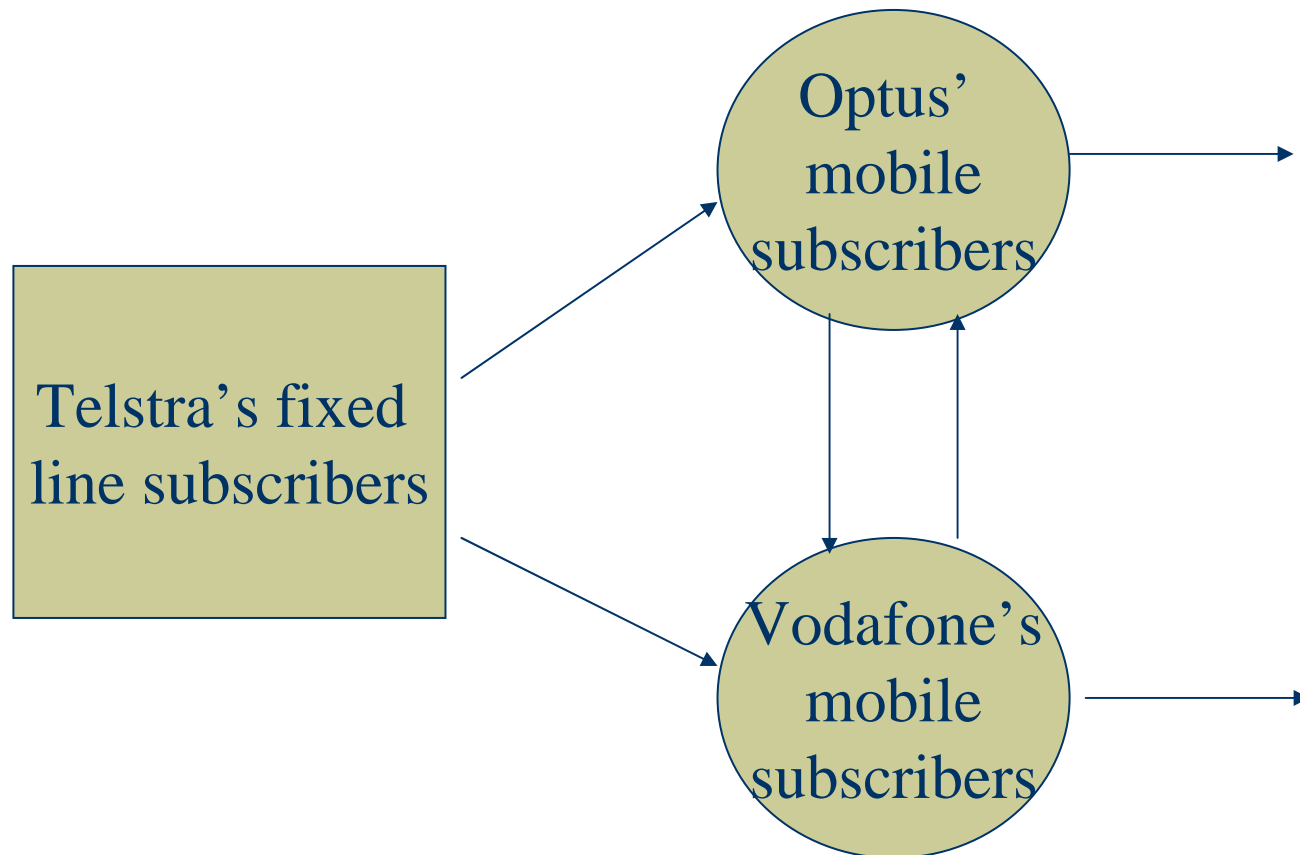
“A regulated interconnection regime impairs free market mechanisms ... as such it would be advisable to remove regulations as the market is now mature with mobile services on the same footing as fixed network services. Hence, interconnection should work in both directions.”



II. Substitution effects

- ◆ Second missing feature of bottleneck story
- ◆ Fixed line subscribers are also mobile subscribers
- ◆ Can have important implications that have been largely ignored

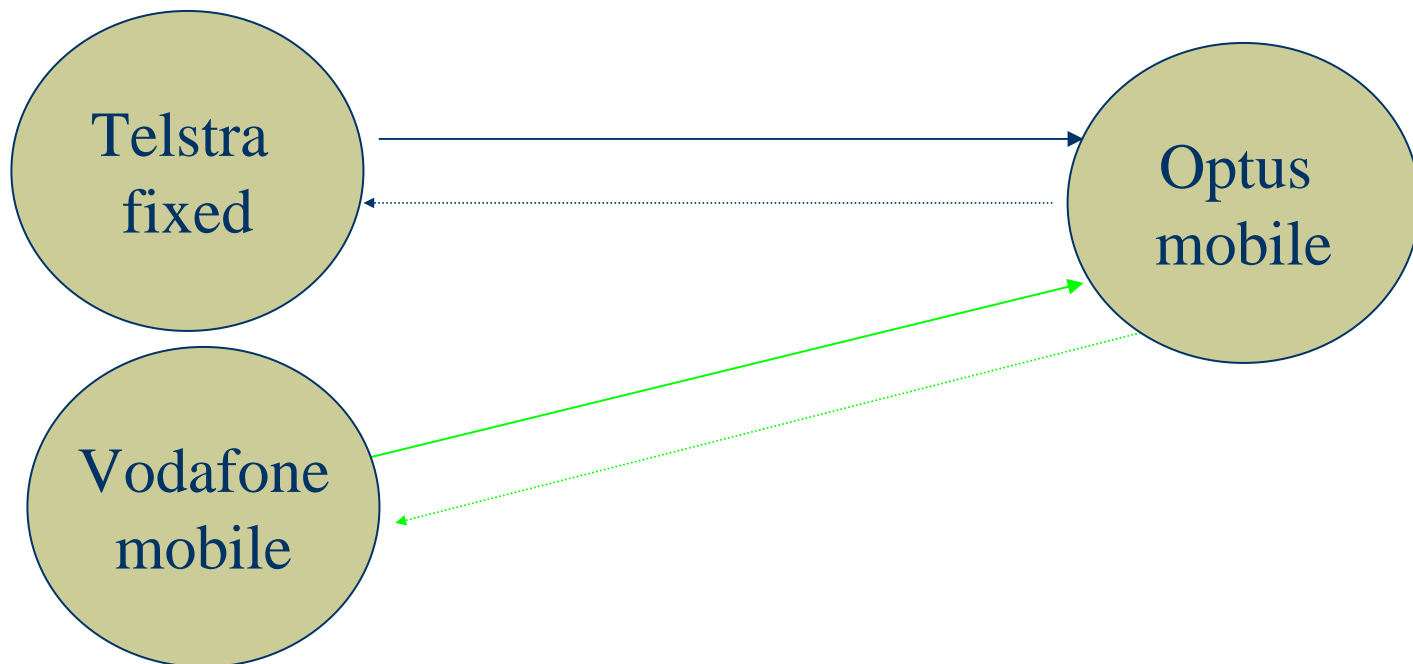
Traditional view of termination



Substitution effects

Person at home

Person on-the-go



Substitution for FTM termination

- ◆ At home and wish to talk to someone on-the-go
- ◆ Suppose FTM is unregulated (back in 2004)
- ◆ Mobile networks charge 21 cents per min to Telstra
- ◆ Telstra charges 33 cents per min for FTM
- ◆ What choices does the person have?
 - Without a mobile subscription, not much
 - With a mobile subscription can:
 - call on mobile instead (23 cents on average)
 - text message (even cheaper)

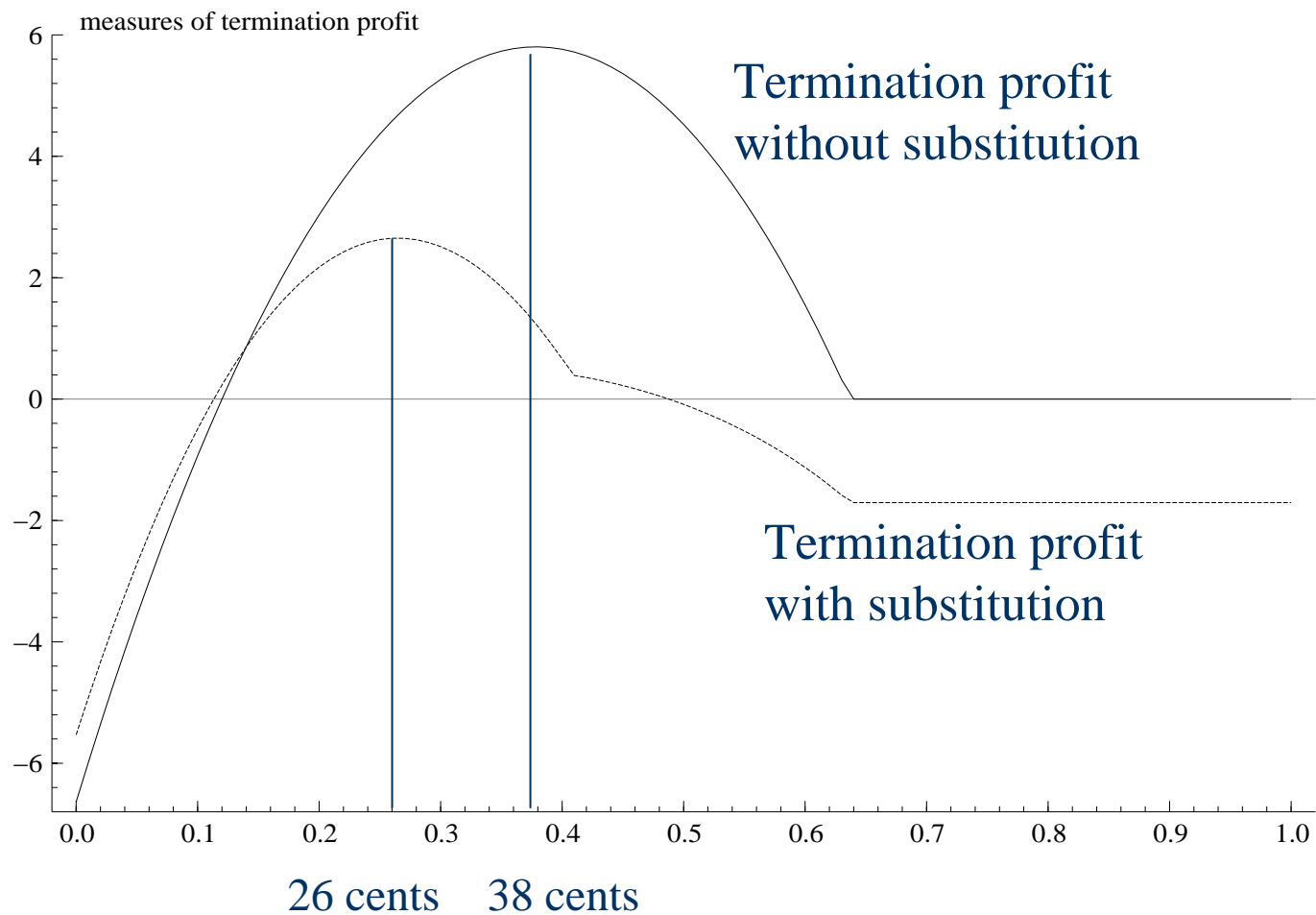
Implications for termination bottleneck

- ◆ Mobile operators responded by lowering FTM and raising MTM (equalizing them)
- ◆ Real bottleneck is MTM termination
- ◆ Even with equal MTM termination charges
 - still some substitution due to buckets of free minutes and off-peak calls
 - what about on-net calling circles?

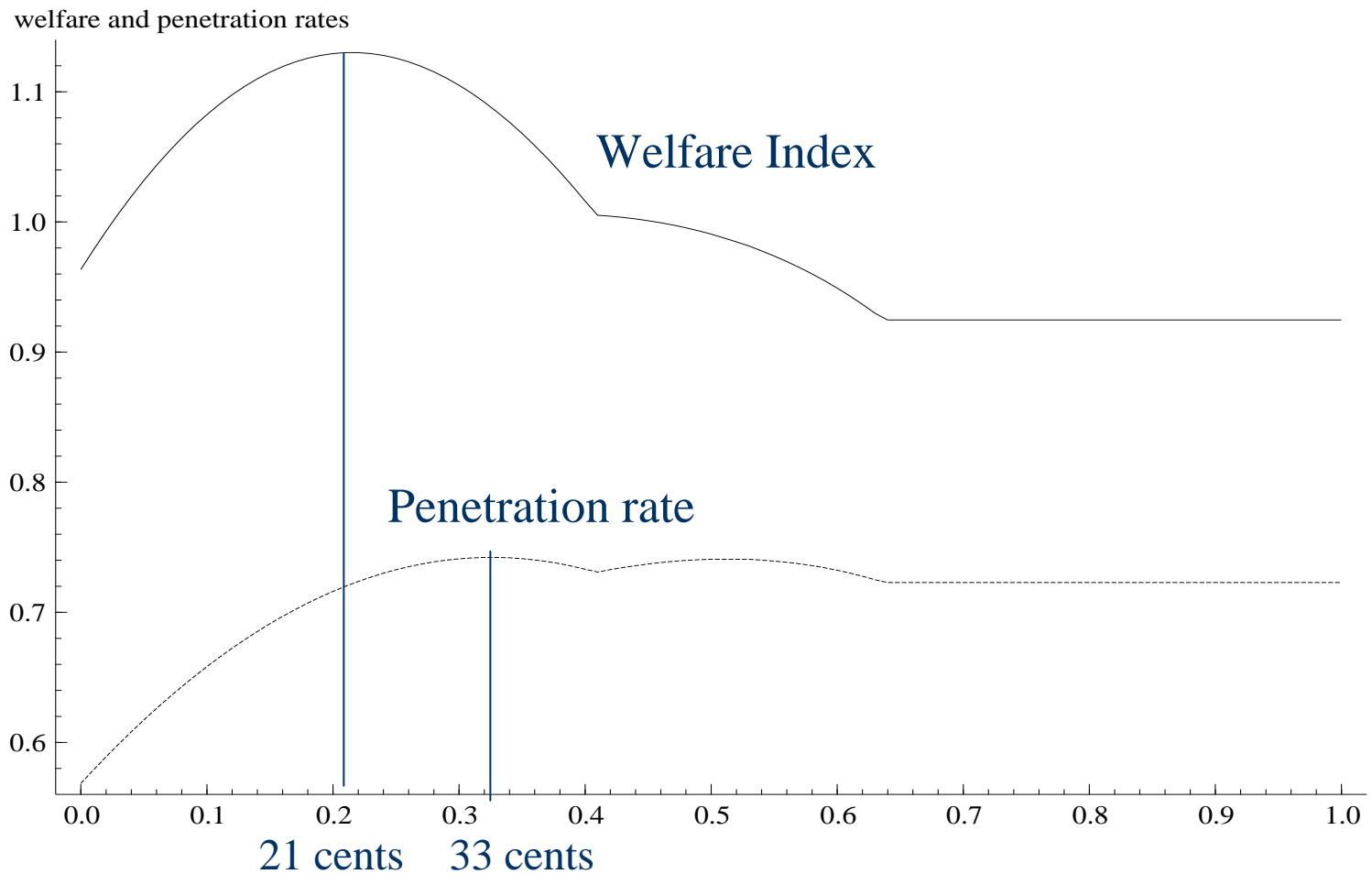
Hausman and Wright (2007)

- ◆ Calibrate a model for Australia in 2004
- ◆ 72% penetration rate
- ◆ MTM price = 23 cents, FTM = 33 cents, rental \$22
- ◆ Use data on quantity of calls from Optus
- ◆ Use ACCC data on costs, range of elasticities from ACCC's – Hausman's
- ◆ Assume receivers get benefit of 16.5 cents

Equilibrium outcomes



Measured outcomes



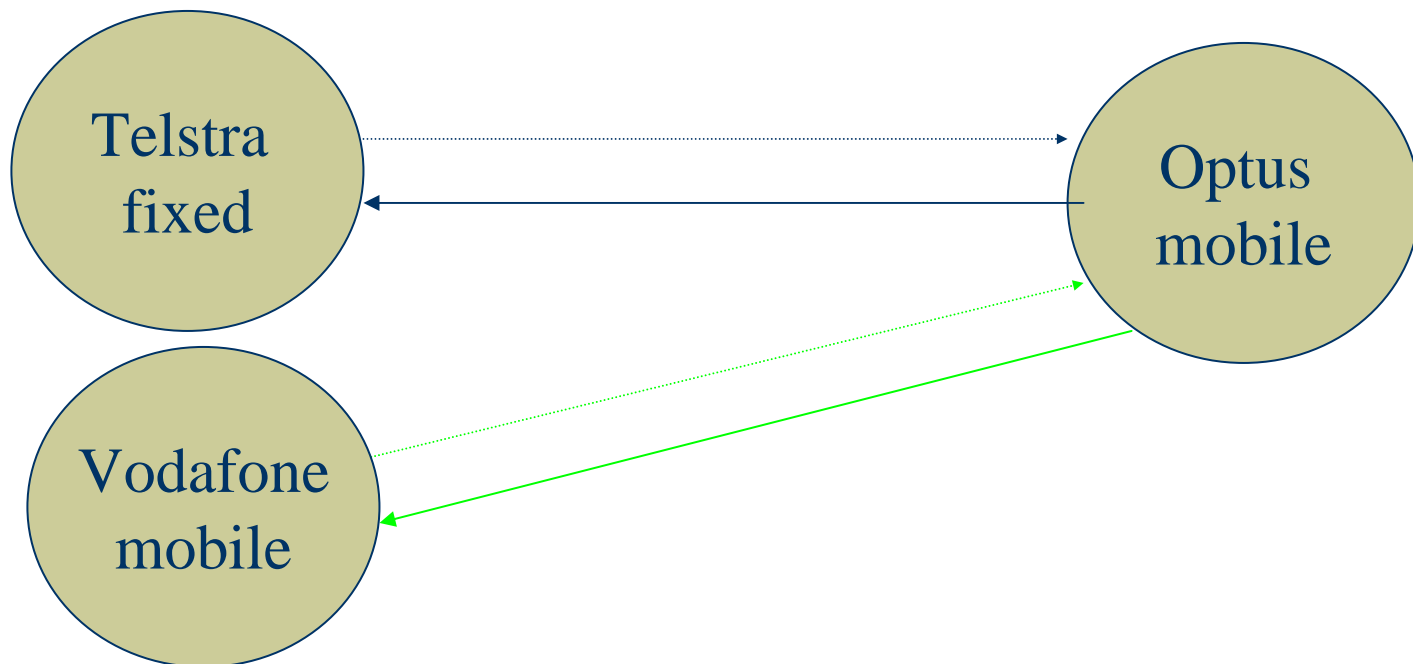
Welfare implications

- ◆ High FTM termination charges encourage more people to subscribe to the mobile network for two reasons
 - Waterbed effect
 - To avoid high FTM charges by using MTM instead
- ◆ Additional mobile subscribers create externalities
 - To people who want to reach them (from home or on-the-go)
 - To people who can receive their calls (at home or on-the-go)
 - New good effect = large externalities
- ◆ As penetration goes to 100%, externalities may become less important, as do deadweight losses
- ◆ Welfare effects of high FTM are smaller with substitutes

Substitution effects in reverse

Person at home

Person on-the-go



Bargaining *and* substitution

- ◆ Worth thinking about these together
- ◆ Do they solve the bottleneck problem?
- ◆ In Australian case, need to consider integrated fixed and mobile providers
- ◆ This may not be so important if everyone has mobile
- ◆ VOIP is another substitute technology for fixed

Other policy approaches

- ◆ Cost based approach
- ◆ Receiver pays
 - Not an alternative to (FTM) regulation
 - Natural implication of regulating very low (or no) FTM termination charges
- ◆ Bill and keep
 - Recover costs directly from end users
 - Leads to receiver pays
 - More spam calls to mobile phones/ switch off phones?
 - Empirical evidence not conclusive



Regulatory convergence?

- ◆ Bill and keep in telecommunications
- ◆ At par settlement in payment networks
- ◆ Internet peering
- ◆ Net neutrality

Regulatory tradeoffs

- ◆ Unregulated networks may set inefficient pricing structures (may focus too much on attracting one side)
- ◆ They may also internalize externalities across users
- ◆ Not a problem of cost recovery, so regulation easier
- ◆ But regulation will bias towards closed networks
- ◆ Open networks likely to be more efficient