TELSTRA CORPORATION LIMITED

Submission in response to the

Australian Competition & Consumer Commission's

Review of Telstra Price Control Arrangements

12 February 2010

PUBLIC VERSION

Contents

A   Executive summary

This submission has been prepared in response to the Australian Competition and Consumer Commission's ("**ACCC's**") Discussion Paper "Review of Telstra's Price Control Arrangements", January 2010 ("**Discussion Paper**"). Telstra notes the Discussion Paper was prepared in response to the Australian Competition and Consumer Commission (Inquiry into Price Control Arrangements) Direction (No. 1) 2009 dated 23 December 2009 ("**the Direction**"). The Direction requires the ACCC to hold a public inquiry about aspects of the price control arrangements that should apply ("**Future Determination**") after the expiry of the Telstra Carrier Charges – Price Control Arrangements, Notification and Disallowance Determination No.1 of 2005 ("**Current Determination**").

Market analysis demonstrates that although price controls may have been necessary during the transition to full market liberalisation, they are no longer necessary. Consumers today can choose from a wide range of telecommunications services and providers. As competition has grown in the market to deliver these benefits, price controls have been successively relaxed. If the price controls arrangements are not removed completely, they should be relaxed further.

Retail price controls in their current form are no longer necessary for two reasons:

o Consumers can choose from a wide range of telecommunications service types from a variety of service providers. It is widely recognised that there are competitive substitutes to the Public Switched Telephone Network ("**PSTN**"), the most pertinent of which is the ability of consumers to acquire voice services from a mobile service provider. In addition to the impact of mobiles, the PSTN is also subject to substitution effects from, wireless broadband, Hybrid Fibre Coaxial ("**HFC**") cable, Voice over Internet Protocol ("**VOIP**") and Unconditioned Local Loop ("**ULL**")-based services. Their effectiveness as a substitute to the PSTN is evident in the declining use and price of PSTN services compared with the increased demand for and use of these substitute services; and

o Australia has a comprehensive wholesale access regime. This regulation allows competitors to replicate Telstra's price controlled services at prices set by the regulator. It also ensures customers have options for the competitive supply of a PSTN service.

Competition rather than price controls is delivering consumer benefits. This is evidenced by the eight per cent difference between the cap and Telstra's actual prices.

Telstra's Total Factor Productivity ("**TFP**") analysis also shows the price caps in the Current Determination were too tight. However, past TFP is not a good indicator of future TFP, particularly since anticipated declines in PSTN demand and output would indicate that future TFP will be lower than what it has been in the past. As a result, regulatory error will be difficult, if not impossible, to avoid; with costly implications for Telstra as well as all current and prospective industry participants.

For these reasons, the ACCC should follow international and domestic trends and recommend removal of price controls in their current form.

The current price control regime should be replaced by a simple regime that reflects Telstra's statements in its June 2009 response to the Federal Government's *National Broadband Network: Regulatory Reform for 21st Century Broadband Discussion Paper*. Telstra strongly supports continuity of two core consumer protections:

- the requirement that an untimed local call be made available to all Australians[1]; and

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[1] Which is a safeguard embodied in primary legislation, quite distinct from any consideration of what price controls, if any, should apply to Telstra.

- that all Australians should have access to a uniformly priced standard telephony service regardless of where they live or work.

These are core consumer safeguards, a fundamental part of the Australian telecommunications landscape, and an important safety net for all Australians which should be retained.

Should Telstra remain subject to a Future Determination that continues to impose price control regulation as part of the existing regime, Telstra makes the following recommendations:

- If Telstra is to remain subject to CPI – X based price controls, the first basket of services or Basket 1 [2] in any Future Determination should continue as a broad basket of services that includes line rental, international, trunk and local calls;

- Price controls on all four baskets should be relaxed to reflect the effects of substitution and increasing competition in the market. To reduce the risk of regulatory error, they should be set to capture the extremities of market failure as a safety net, such as no real price increases in Basket 1, rather than attempt to predict cost trends. ;

- To reflect the anticipated Federal Government policy of mandating the provision of higher cost FTTH in new estates, the drafting for the connections basket should remove optic fibre from the definition. The basket should also take into account the impact the Government's mandate will have on the cost of connections generally in those instances where copper is deployed;

- To allow more rational, market based pricing decisions, any credits or deficits in the Current Determination period should be rolled into the Future Determination as per the Government's policy in 2002 and 2009;

- Telstra should not be penalised in respect of costs arising from factors beyond Telstra's control. Telstra seeks a clause that will allow it to pass through any future industry taxes that are either designed to be passed through to consumers such as 'carbon abatement' type taxes, or where Telstra's competitors are able to pass the tax through, such as the *Utilities (Network Facilities Tax) Act 2006 (*ACT);

- Finally, there are a number of aspects of the Determination due for clarification, review and streamlining. These include pricing notifications to the ACCC and marketing obligations in relation to subscription services.

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[2] Which currently includes line rental, local calls, national and internal long distance calls, calls to mobiles and preferential and community calls.

B   Why price controls should be removed

There is no need for price controls to continue on Telstra after expiry of the Current Determination on 30 June 2010. This legacy regulation is no longer necessary due to the availability and increasing take-up of competitive substitutes for the PSTN and the ongoing regulation of wholesale services. It is clear from the evidence that competition rather than price controls is delivering consumer benefits.

COMPETITIVE SUBSTITUTES

Consumers have a wealth of competitive voice offerings

The Australian Communications and Media Authority ("**ACMA**") Telecommunications Report 2008-09 (January 2010) finds that, as of June 2009 there were:

- 175 licensed carriers;[3]
- three mobile carriers operating six mobile networks covering between 96 per cent and 99.06 per cent of the Australian population;[4]
- an estimated 638 internet service providers ("**ISPs**") in operation using a range of different access technologies;[5]
- four operators of HFC networks covering 2.6 million homes in metropolitan and regional centres[6]; and
- 391 fixed-voice service providers operating in Australia.[7]

Competition from mobile and broadband services is shifting consumer demand away from the traditional fixed line services that are regulated under the Current Determination. The use of mobile networks and devices for voice and data usage has increased dramatically at the expense of fixed access and voice services. Customers who remain on the fixed network have a wealth of competitive offerings to choose from as ISPs become full service providers. Many of these competitors are using ULL as the underlying input to construct Naked Digital Subscriber Line ("**Naked DSL**") and VOIP offerings. These trends combined with the continued availability of fixed voice telephony offers from resellers who use Telstra's wholesale inputs and Optus' HFC network, are placing intense competitive pressure on Telstra's PSTN services.

Decline in PSTN services

As evident in Table 1 below, PSTN services are in decline. After a brief rally in financial year 2007-08, the decline in the number of PSTN lines has resumed:

Lines in operation	FY 2006-07	FY 2007-08	FY 2008-09	Source
Fixed line telephone services (M)	10.92	11.00	10.67	ACMA Communications Report 2008-09

Table 1 ACMA reporting of industry lines in operation from FY 2006-07 to FY 2008-09.

As illustrated in Figure 1 the decrease in the usage of services is even more pronounced. Local traffic is now around 60 per cent of what it was only three years ago:

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[3] ACMA, *ACMA Communications Report 2008-09*, January 2010, p 19.
[4] Ibid, p 21.
[5] The Australian Bureau of Statistics reports that 37 ISPs have more than 10,000 active subscribers.
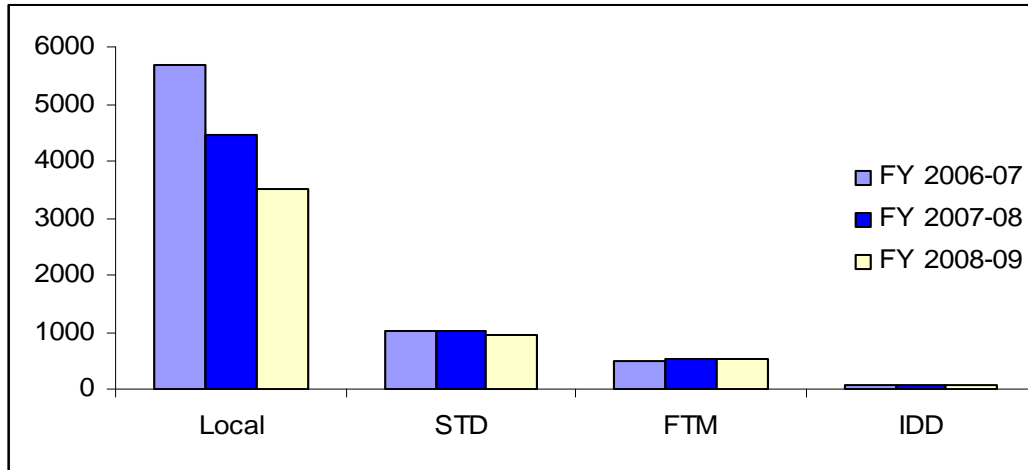[6] ACMA, Op Cit, p 21.
[7] Ibid, p 21.

Figure 1 ACMA reporting of industry PSTN minutes From FY 2006-07 to FY 2008-09.[8]

This situation is not predicted to improve. Table 2 outlines Ovum's latest fixed line forecasts. From 2010 to 2012 Ovum has forecast a decline of around four to five per cent per annum or almost one million lines.[9]

	2009	2010	2011	2012	Source
Total fixed voice lines (000s)	10,570	10,155	9,749	9,290	Ovum fixed line forecasts
Decline		-4%	-4%	-5%	

Table 2 Forecast change in total fixed lines from 2009 to 2012.

Consumers now pay lower prices for PSTN services

Since the Current Determination was introduced, intensifying competition has driven consistent price reductions in the price controlled services. This competition is reflected in declining PSTN prices and usage – as reflected in Table 3 below and Figure 1 above.

	FY 2005-06	FY 2006-07	FY 2007-08	Source
Basic access	-2.4%	-1.4%	-1.6%	ACCC changes in price paid for telecommunications services 2007-08
Local calls	-9.5%	-6.7%	-10.1%	
National long-distance	-6.9%	-10.9%	-10.9%	
International	-8.8%	-4.8%	-7.7%	
Fixed-to-mobile	-10.5%	-7.6%	-6.4%	
PSTN services index	-6.6%	-5.4%	-5.5%	

Table 3 ACCC reporting of % change in Basket 1 prices across all industry from FY 2005-06 to FY 2007-08.

Unsurprisingly given the fall in prices and usage, revenues have also declined industry wide. Figure 2 illustrates the declines.[10]

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[8] ACMA, Op Cit, p 180.
[9] Ovum, *Ovum Fixed Line Forecasts*, 2009.
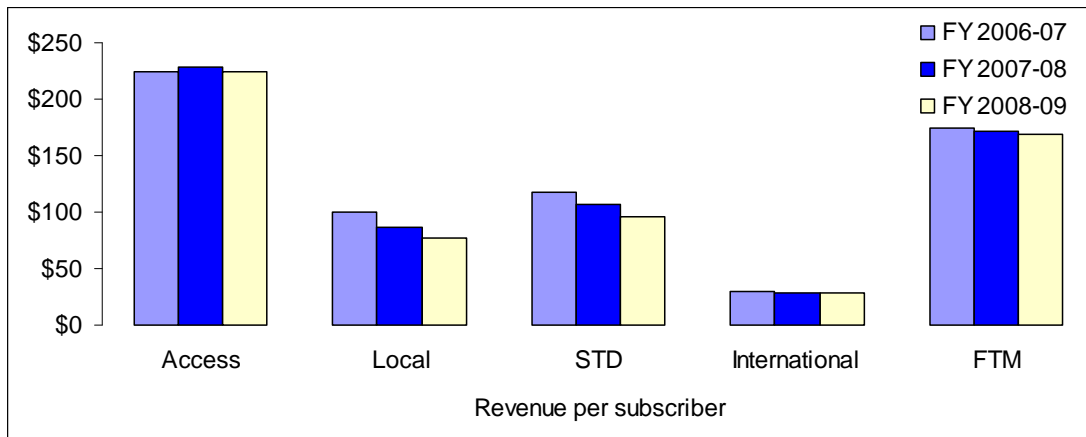[10] ACMA, Ibid, p 179.

Figure 2 ACMA reporting of industry revenue per subscriber by voice service from FY 2006-07 to FY 2008-09.

This decline in fixed services and falling prices is a result of increasing demand from competitive substitutes.

Fixed to Mobile substitution

Over the last three years mobile usage has increased dramatically as a result of falling prices and improved handset functionality. When contrasted with the declines in fixed services, the competitive pressure mobile services place on Telstra's fixed line services is clear. This is a point well acknowledged by industry regulators, operators and market analysts.

Figure 3 outlines the increase in mobile minutes per subscriber from FY 2005-06 to FY 2007-08. Over this period mobile minutes increased by around 1,000 minutes per subscriber per annum, while subscriptions increased by 2.6 million and prices fell by eight per cent.[11] It is thus unsurprising that mobile revenue now exceeds fixed line revenue
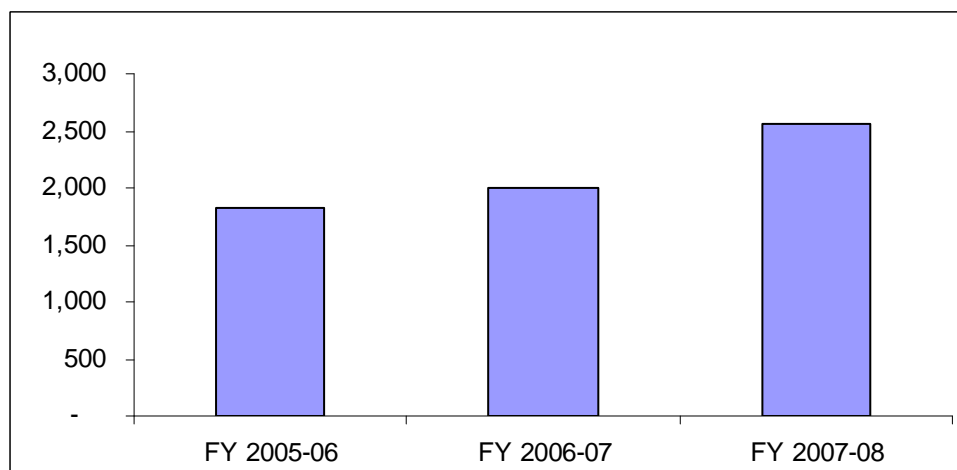
Figure 3 Total subscriber mobile minutes per annum[12]

Figure 4's comparison of local calling and mobile usage puts this usage substitution into context.[13]

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[11] ACCC, *Changes in the price paid for telecommunication services in Australia 2007-08*, 2008, p 144.

[12] ACMA Consumer Benefits Report 2007-08. In the absence of data FY 05/06 assumes industry growth identical to Telstra's growth in mobile minutes. FY 08/09 data is unavailable as ACMA has changed their methodology.

[13] Telstra Corporation Limited, *Financial results for the Half Year ended 31 December 2009*, February 2010, p 10.
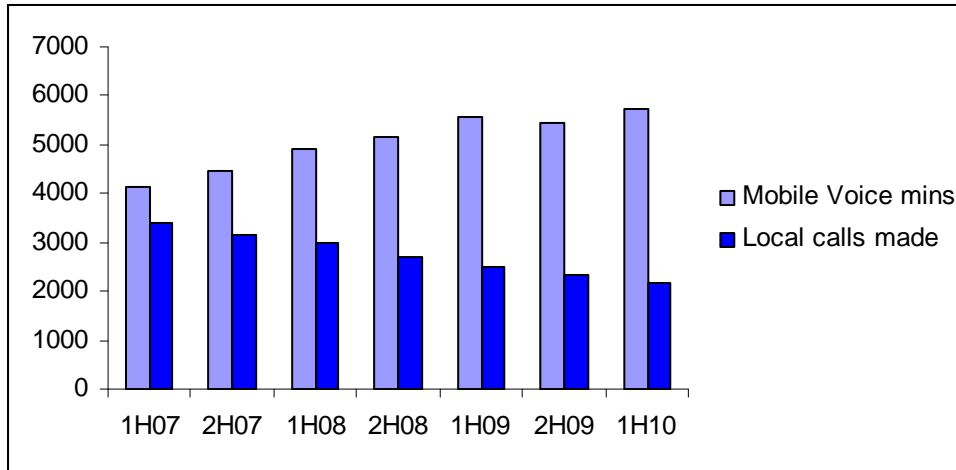
Figure 4 Comparison of Telstra mobile voice mins and Local calls made (millions).

Fixed to Mobile substitution is a widely recognised trend

The ACMA's analysis of these trends has led it to acknowledge the strength of mobiles as a fixed line services substitute. Changes in price and functionality of mobiles are leading consumers to consider the mobile to be their main form of communication and relinquish their fixed line altogether. According to the ACMA:

> "*This continuing reduction in the number of fixed-line subscribers can be attributed to the ever-growing use of mobile phones. Average mobile phone call charges have fallen, while mobile phone functionality also increased. These aspects, in addition to the increased flexibility and convenience offered by mobile phones, have driven many consumers to reduce their use of fixed-line telephones, and in many cases relinquish their fixed-line phone altogether.*"[14]

Analysts agree. Figure 5 below published by Goldman Sachs JB Were compares the net adds between mobile (handsets and wireless broadband) and fixed services (voice and broadband). It illustrates a clear substitution trend towards mobile services. Goldman Sachs JB Were state:

> "*Comparison of customer growth rates in fixed line and wireless points to an undeniable conclusion – the shift to wireless (i.e. away from fixed line) is accelerating.*"[15]

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[14] ACMA, *Consumer benefits resulting from Australia's telecommunications sector 07-08,* p 23.
[15] Goldman Sachs JB Were, *CME Strategy Outlook For 2010 Part 1: Telecoms,* January 2010, p 8.
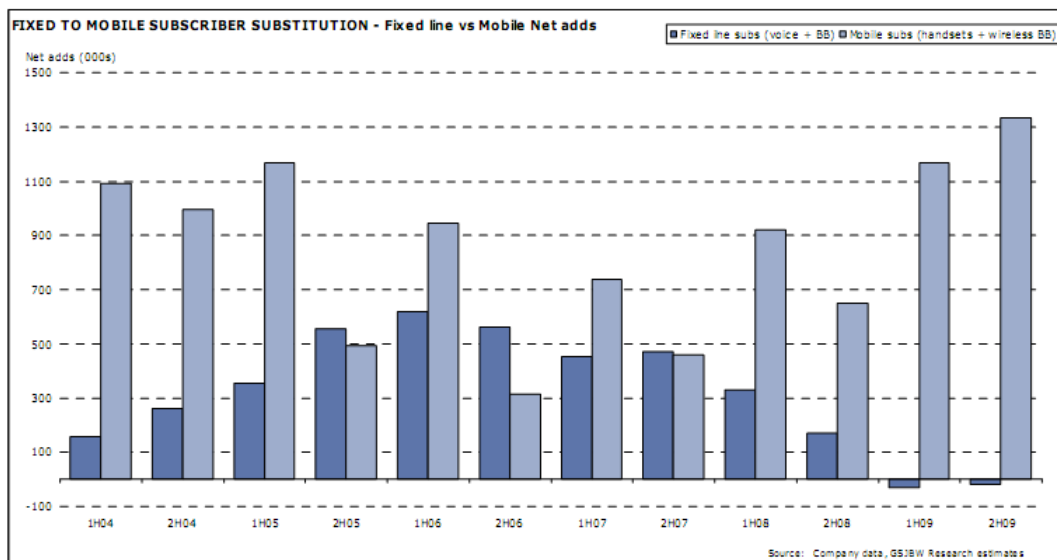
Figure 5 Fixed to Mobile Subscriber Substitution– Fixed line versus Mobile Net adds[16]

These trends are not lost on Telstra's competitors. Paul Broad, CEO of AAPT (one of Telstra's largest fixed line PSTN competitors), comments,

> "*Convergence is finally here and there's no question in my mind the dominance of wireless over fixed line will be further consolidated over the next 12 months.*"[17]

Given these trends, the independent analysis by the ACMA, analysts and competitors, Telstra disagrees with the ACCC claim that mobiles only assert a competitive restraint '*at the margins*'[18].

Competition from fixed line substitutes including VOIP

Broadband competition led by ULLS-based services is also placing competitive pressure on Telstra's PSTN services. Most ISPs are now full service providers. The availability of ULLS has allowed the provision of broadband and VOIP services independent of the supply of a PSTN service. This has increased consumer choice in the market as well as availability of cheaper voice calls.

In the financial year 2008-09 broadband penetration in Australia leapt 16 per cent to 8.4 million subscribers.[19] Along with this penetration consumers have benefited from increasing competition. This is evidenced in the declines in prices per gigabyte (Gb) outlined Figure 6.[20]

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[16] Ibid, p 10.
[17] Paul Broad, *CommsDay Issue 3672 January 2010*.
[18] ACCC, *Review of Telstra Price Control Arrangements – Discussion Paper*, January 2010, p 14.
[19] ABS, Op Cit.
[20] ACMA, Op Cit, p 176.

Figure 6 ACMA reporting of average revenue per Gb from 2006-07 to 2008-09.

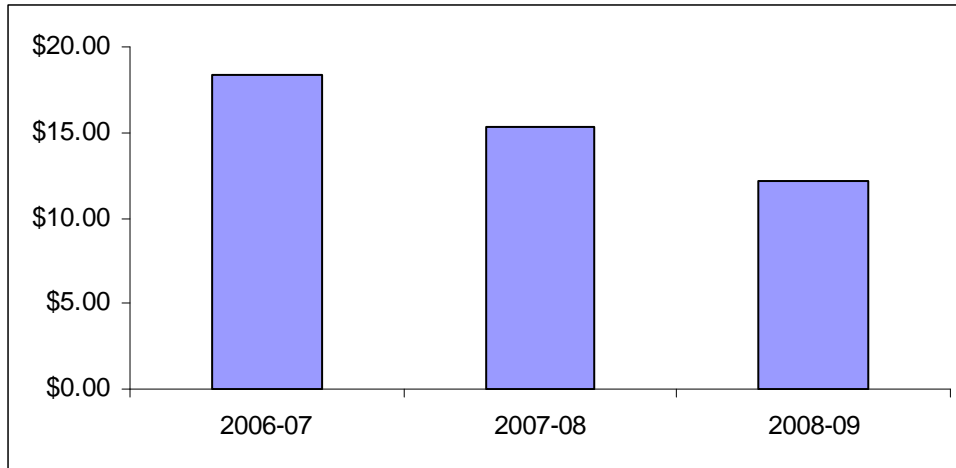ULLS, now available to around 65 per cent of Australian households, has grown five fold since FY 2005-06 to 723,000 lines. [21] The expansion of ULLS-based services has resulted in innovations such as Naked DSL that allows customers to take a broadband service without a separate PSTN access service – this reduces demand for PSTN services. In the past, PSTN access was required to provide a broadband service, supplied either via wholesale DSL or the wholesale line sharing service ("LSS"). This is no longer the case with Naked DSL.

VOIP penetration is also increasing. It grew to 14 per cent in 2009.[22] This penetration will accelerate as ISPs use VOIP as part of their full service offerings. This is especially the case with Naked DSL offers where a customer still wants a fixed voice service.

There are no publicly available numbers of Naked DSL services. However, since their introduction in 2007 it is likely that they are a major driver of the increase in ULL services in financial years 2007-08 and 2008-09. Although the ACCC has reserved its judgment as to the impact this has had on PSTN fixed access services it noted:

> "*With the increasing focus on providing naked DSL services that include carrier grade residential IP telephony connections (such as those currently offered by Internode and iiNet), clear evidence of an increasing take-up of VoIP services—particularly as a full fixed-line voice substitute—may emerge in the future. The ACCC expects this would reflect a similar substitution continuum as observed by ACMA in the case of fixed-to-mobile substitution.*"[23]

As outlined, the imperative to retain a PSTN service has declined. Given regulatory settings that promote the use of ULLS-based competition this trend is expected to continue.

Wireless broadband growth is accelerating fixed line substitution

Over the last 24 - 36 months the increased use of mobiles has been coupled with an explosive growth in wireless broadband and greater consumer choice. Falling prices and increasing speeds has driven rapid adoption of this technology and resulted in wireless broadband becoming a viable substitute to a fixed line broadband service. The improved functionality and falling prices, combined with the take up of voice mobile services, has made wireless broadband another source of competitive pressure on Telstra's PSTN services. Like consumers dropping their PSTN line in favour of broadband over Naked DSL - consumers can also drop their fixed line in favour of a wireless broadband service.

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[21] Telstra's Year end results and operations review – financial highlights and ACCC data and ACCC, *News release - ACCC publishes data on take-up of broadband access services*, November 2009.
[22] Ibid, p 7.
[23] ACCC, Op Cit, p 27.

Wireless broadband (not inclusive of broadband enabled 3G mobile handsets) grew 49 per cent in the first half of 2009. At 2.1 million connections it represented more than 25 per cent of all broadband connections in Australia at that time.[24] Figure 7 below illustrates the growth in wireless broadband when compared with fixed broadband services.
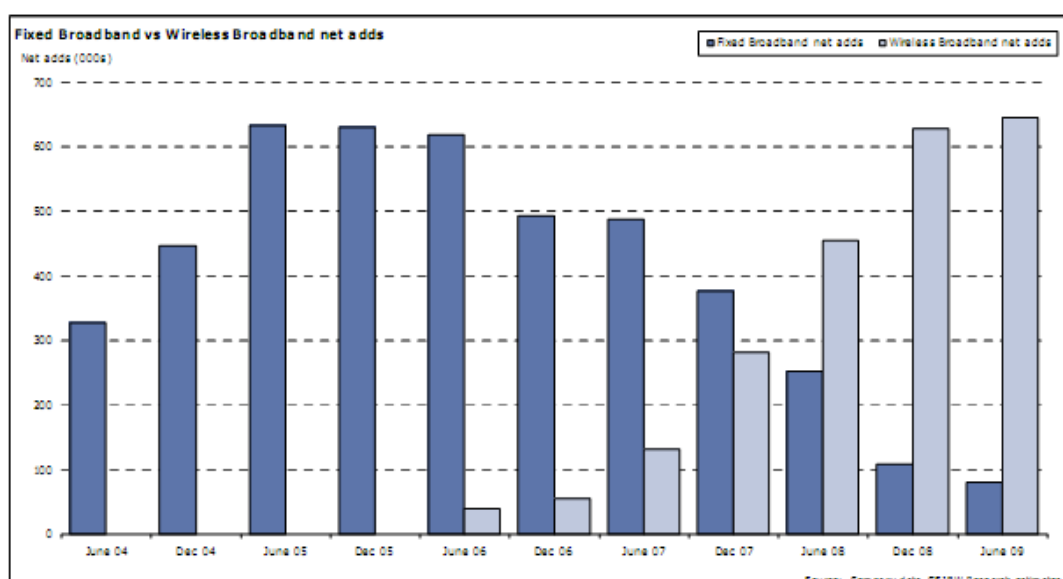

Figure 7 Fixed Broadband versus Wireless Broadband net adds from June 2004 to June 2009.[25]

This rapid growth is a result of increasing speeds allowed by 3G networks. Telstra's Next G™ network is now HSPA+ enabled delivering typical customer download speeds of 550kbps to 8Mbps almost six times faster than when Next G™ was launched – with future speed upgrades expected in 2010. Since January 2009, Telstra estimates that the average price charged per gigabyte reduced by 28 per cent industry wide

It is clear wireless broadband is impacting fixed services today. Analysts at Goldman Sachs JB Were note, using average revenue per user as a proxy for pricing, that wireless broadband is now cheaper than fixed broadband. This is before including the cost of the fixed line. They state,

> "We believe that, given the arrival of wireless broadband as a viable, cheaper alternative to fixed broadband, many customers who previously did not have broadband connectivity are choosing wireless access over fixed."[26]

HFC provides direct infrastructure competition

Telstra also faces infrastructure competition from HFC operators. There are three HFC competitors to Telstra's basic access product with metropolitan and regional networks[27]. All competitors offer a combination of voice, Pay TV and broadband services. The biggest, Optus, with a HFC network footprint of around 2.2 million customers has around 520,000 households using the Optus HFC network for voice services.[28] The strength of the HFC platform was recently affirmed with Optus and Telstra announcing upgrades to their networks to provide higher speed broadband services.

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[24] Australian Bureau of Statistics, *ABS internet Activity Australia*, June 2009.
[25] Goldman Sachs JB Were, Op Cit, p 9.
[26] Goldman Sachs JB Were, Op Cit, p 12.
[27] ACMA, Op Cit, p 22.
[28] Singapore Telecommunications Limited, - *Management Discussion And Analysis Of Financial Condition, Results Of Operations And Cash flows For The Third Quarter And Nine Months Ended 31 December 2009*, February 2010, p 49.

WHOLESALE ACCESS REGIME

The wholesale access regime makes retail price controls unnecessary

At its core, retail price regulation is unnecessary because Australia has a comprehensively regulated wholesale access regime. The declaration of Wholesale Line Rental ("**WLR**") in July 2006 further strengthened the access regime as it applies to the basic telephony services during the period of the Current Determination. Now all of Telstra's retail PSTN products can be replicated by other operators using declared wholesale inputs such as WLR and combining them with their own or other competitively available infrastructure.

The ACCC has declared the following services relevant to fixed line access services:

- Domestic PSTN Originating and Terminating Access;

- Line Sharing Service ("**LSS**");

- Local Carriage Service ("**LCS**");

- Domestic transmission capacity service;

- ULL; and

- WLR.

These declarations enable competitors to replicate Telstra's retail services using regulated services at regulated prices without having to replicate Telstra's Customer Access Network ("**CAN**"). This places competitive discipline on Telstra because if Telstra attempts to price its retail services too high, competitors will be able to undercut Telstra's prices using these inputs, the prices of which can be determined by the ACCC.

In the Discussion Paper, the ACCC categorises the Australian market as highly regulated. This is precisely the reason why retail price regulation should be removed. Through the access regime, Telstra will continue to be subject to competitive pressure at the retail layer, justifying the relaxation if not removal of retail price regulation. The UK example is instructive; retail price regulation lapsed and was not replaced as a result of strengthened access arrangements in particular the high take-up of WLR lines. Since the wind back of retail price regulation in 2007, prices in the UK fell by 1.5 per cent in 2008, slightly more than previous falls over the past five years.[29]

COMPETITION NOT PRICE CONTROLS IS DELIVERING CONSUMER BENEFITS

The impact of the trends discussed above is reflected in Telstra's half yearly results statement to the ASX in February 2010. In discussing Telstra's PSTN business the statement noted:

- The consumer popularity of wireless broadband has also led to an increasing trend to mobile-only households, which we estimate is now close to 10% of total households;
- lower usage across all calling categories, most notably in local calls and national long distance;
- Retail PSTN services in operation declined as LSS and ULL uptake by competitors continued;
- Strong domestic competition driven by ULLS growth and very competitive mobile offers; and

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[29] Ofcom, Communications Report, 2009, p 243.

- We believe customer behaviour continues to fundamentally shift with the increasing preference towards mobile voice, data messaging and internet based communications. In the first half of fiscal 2010, PSTN accounted for only 24% of total sales revenue compared to 30% three years ago.[30]

These trends have led to Telstra PSTN price reductions that outstripped both the existing controls and the ACCC's recommended controls. This competition is likely to intensify over time.

Comparison of actual prices to imposed price controls

The ACCC has compared their 2004 estimations of TFP to Telstra's actual price performance. Telstra does not consider this input is relevant in determining the need for future controls. Nevertheless, Table 4 below compares the price movements for Basket 1 against what was recommended by the ACCC and what was actually imposed through the Current Determination.

Year (FY)	Implemented price cap %	ACCC recommended price cap %	Reported price movement %	Source
2005-06	0.0	-1.6	-4.4	ACCC NBN
2006-07	0.0	-1.3	-4.2	discussion
2007-08	0.0	-1.1	-0.1	paper
Sum	0.0	-4.0	-8.7	submission

Table 4 Comparison of change in actual price movement of Telstra's basket 1 compared to implemented cap and ACCC recommended cap from FY 2005-06 to FY 2007-08.

In the absence of any other pressures, a rational operator given the opportunity to maximise its revenues would price its services as close to the cap as possible. However, instead of not changing its price over the three years, Telstra's prices fell 8.7 per cent – lower than both the actual cap and the ACCC's recommended cap.

This result is unsurprising given competitive pressure imposed by fixed to mobile substitution, broadband services and the continuing availability of wholesale services that provide PSTN inputs at regulated prices.

Instead of treating the price movement differential as support for the removal of price controls the ACCC suggests that the implemented caps were overly generous. However, it does not explain why prices fell and appears to contradict its assessment in the Discussion Paper that mobile voice and data services provided by the mobile networks are "*yet to reach the point of being full or effective substitutes*".[31]

The fact that prices fell significantly below both the actual and proposed caps is undisputed evidence that the market is effective in passing on efficiency improvements and removal of price cap regulation will do no harm to consumers.

Forecast TFP set at a level below Telstra's actual TFP

Analysis of Telstra's TFP over the last three years indicates why, despite being set at CPI-CPI, the recent price controls were set at a level below Telstra's TFP.

CPI-X price caps are designed to mimic the effects of a competitive marketplace. The X is based on the policy-maker's forecasts of Telstra's and the economy's productivity. The CPI-X adjustment, if X is set to TFP, ensures that, regulated firms do not suffer an erosion of real prices and are not unduly benefited by being able to appropriate all productivity improvements. In a competitive market, productivity improvements would be passed on to consumers through lower prices.

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[30] Telstra Corporation Limited, Op Cit, pp ii 9.
[31] ACCC, Op Cit p 14.

In other words, CPI –X caps are designed to ensure that if Telstra reduces its costs as a result of productivity it does not keep all of these cost savings and increase its margins. The assumption is that there is insufficient competition in the market to deliver the same result.

The Figure 8 tracks Telstra's TFP for the fixed line basket over the last four years. TFP is calculated by dividing the firm's output by its inputs. Where possible Telstra's analysis has relied on the ACCC's methodology – however, some additional assumptions have been made to reflect contemporary methodologies. Telstra's methodology is set out in Appendix A. It indicates that over the last five years, Telstra has reduced the inputs needed to provide its services and that its outputs have decreased as well. This output decline is in line with the declines seen in usage on fixed services outlined earlier. It illustrates that although Telstra has consistently reduced its inputs, overall output, driven by a decline in demand for fixed line services, has also declined.
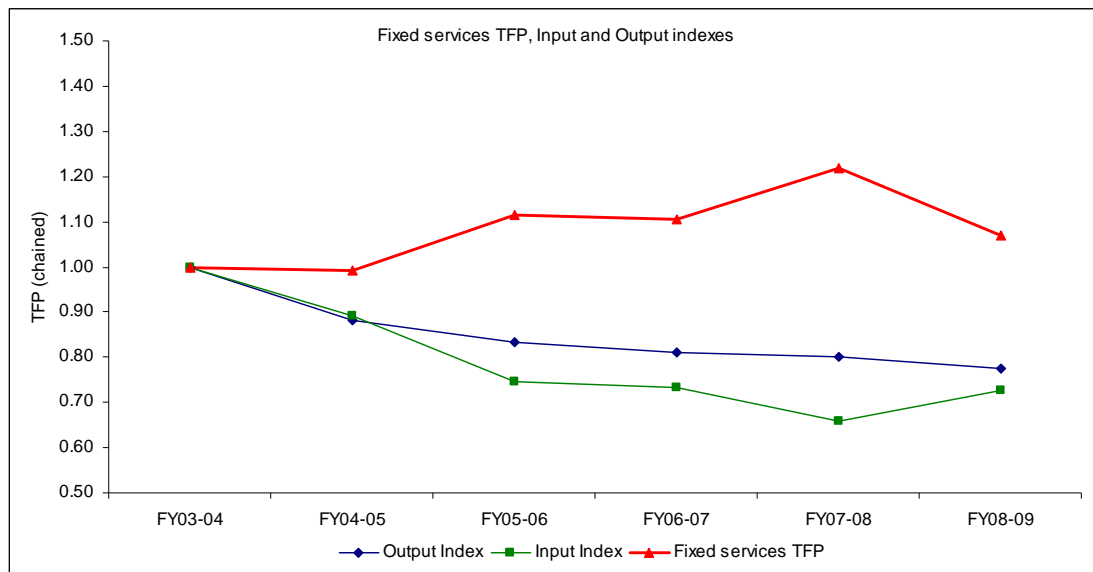
Figure 8 Measure of change in fixed services TFP from FY 2003-04 to FY 2008-09.

Figure 9 compares the Government's price cap to actual prices and what the price cap should have been set at if the Government had perfect foresight and could precisely predict Telstra's actual productivity.[32] The red line performs the CPI-X calculation based on Telstra's actual TFP as set out in Figure 9; the blue line is the Government's forecast cap.

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[32] A retrospective approach also means that there is no need to lag CPI and annual CPI may be applied rather than an average for the year.
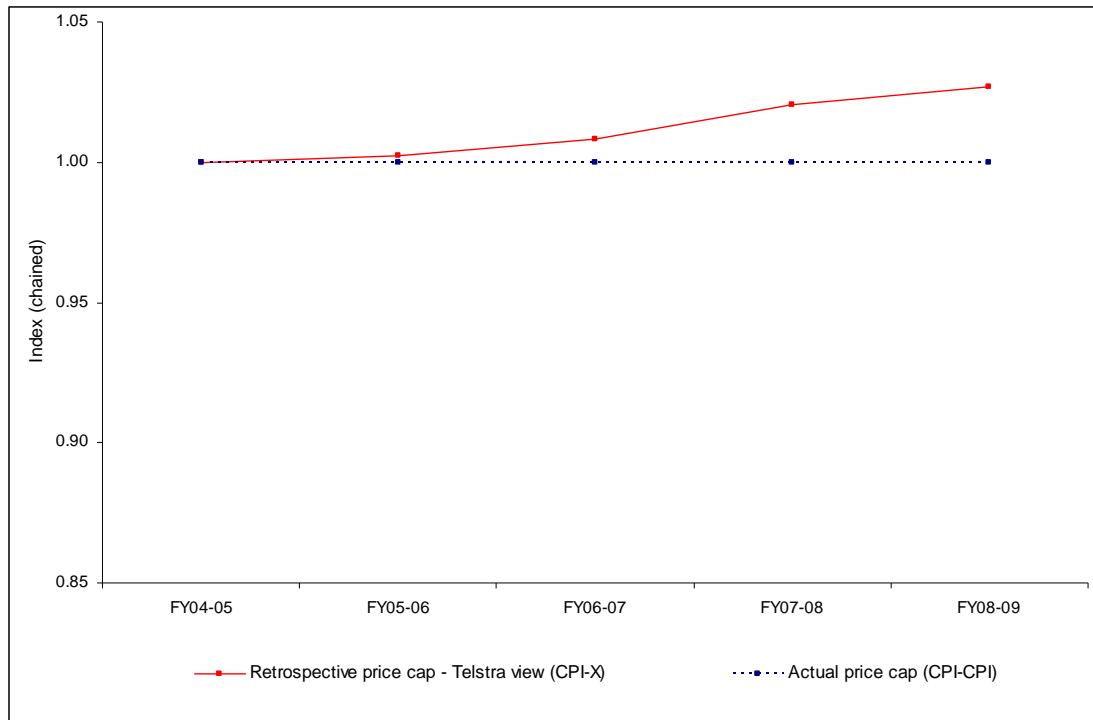
Figure 9 Comparison of Telstra's actual TFP cap to the regulated cap from FY 2004-05 to FY 2008-09.

As the blue line is below the sold red line, Figure 9 illustrates that the Government set price controls below the correct level. This also illustrates the inaccuracy inherent in attempting to accurately forecast a company's TFP. The inaccuracy arises from difficulties in predicting the factors that drive future TFP for fixed services: global technology trends, effects of substitutes such as mobile competition and the effect of wholesale pricing decisions such as ULLS.

Retail price control regulation is being wound back internationally and domestically

The removal of price controls from Telstra would be neither radical nor unusual. Retaining price controls for a further two years will put Australian regulatory policy at odds with the practice of policymakers internationally and domestically who have been removing retail price control regulation.

Telecommunication retail price regulation has been withdrawn, or reduced to very limited oversight, by regulators in many countries such as Germany, the UK, Spain, France, the Czech Republic, Ireland and the Netherlands. In many other retail markets such as Finland, Sweden, Luxemburg and Denmark, operators have been free to set call prices for some time.

Appendix B contains a comparison of Australian prices with other OECD countries that have removed or retained very limited price control regulation. As illustrated previously, Telstra's prices have tracked below the level set by the price controls. Australia's prices on baskets divided into low, medium and high usage by end users compare favourably with countries that have removed price controls. These facts make a strong case for the removal of price controls in Australia.

Additional support for this case is provided by the practice of other Australian regulators in the electricity market – a market which has less opportunity for price and service differentiation – that have removed retail price controls. Appendix C outlines the criteria the AEMC used in reaching the conclusion that retail price controls should be removed in Victoria.[33] If these same

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[33] AEMC, *Review of the Effectiveness of Competition in the Electricity and Gas Retail Markets in Victoria, First Final Report,* December 2007, pp 19-21.

principles were applied to the telecommunications market, price control regulation would arguably have been removed eight years ago.

The redundancy of the current price controls has also been recognised by the Productivity Commission ("PC") which, in its Review of Australia's Consumer Policy Framework states:

> *"…the Commission is proposing that all retail price regulation applying to telecommunications products and services and to contestable energy services should be removed. In those markets, competition among suppliers will best serve to keep prices in check."*

> *"Retail price regulations for telecommunications and energy services were introduced as a transitional measure following the deregulation of service provision, subject to review and removal once full contestability had been established. Yet though some of these markets are now very competitive, many of these interim price regulations remain in place.*

> *Hence, once utility markets are fully contestable, as the telecommunications market evidently already is – retail price regulation should be abolished."* [34]

The inappropriateness of the Current Determination as a tool to deliver social policy was also highlighted by the PC when it stated

> *"…the Commission considers price caps to be a relatively ineffective means of mitigating hardship…the Commission concurs with the original policy intent that retail price regulation should be removed where it is judged that retail markets are contestable.*

> *This is not to suggest that support for low income consumers of these services should be removed. But such support will be better delivered through a combination of adequate, transparent and well-targeted community service obligations, and supplier hardship programs entailing flexible payment options and procedures to minimise the risk of disconnection (box 5.7)."* [35]

> *"The Commission sees no reason to alter the thrust of the draft report proposal. It reiterates that effective support for low income and other disadvantaged groups should remain a centrepiece of consumer policy in the utilities area. But this is not the role of price regulation."* [36]

Cost imposition on Telstra

The Current Determination imposes significant compliance costs on Telstra requiring it to:
- notify the ACCC of price changes when selling certain plans;
- develop internal processes and checks to monitor revenues and subscribers to ensure that underlying pricing will meet the caps;
- ensure that any new pricing proposal is likely to meet the caps;
- develop systems to collect and record relevant data;
- prepare a compliance report for the ACCC;
- pay for an independent auditor to audit the compliance report; and
- dedicate Telstra staff to manage this process.

The constraints imposed by the price caps and the compliance regime limit the flexibility that Telstra has in responding to market conditions. Telstra is also subject to Part XIB of the Trade

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[34] Productivity Commission, *Productivity Commission Inquiry Report, Volume 1 - Summary, No.45*, April 2008, p 31.
[35] Productivity Commission, *Productivity Commission Inquiry Draft Report, Volume 2, No.45*, December 2007, pp 97-98.
[36] Productivity Commission, *Inquiry Report, Volume 2 – Chapters and Appendixes, No.45*, April 2008, p 115.

Practices Act 1974 ("**TPA**") which looks to protect Telstra's competitors from vertical squeeze and, as noted above, all the competitive inputs are subject to price regulation. In the context of the competitive nature of the market as described above, this level of regulatory constraint on Telstra's pricing flexibility is no longer warranted.

Conclusion on why price controls should be removed

Table 5 below outlines the trends noted in the preceding sections.

	PSTN	Mobile	Fixed Broadband	Wireless Broadband	VOIP
Subscribers	Declining	Growing	Growing	Growing	Growing
Prices	Declining	Declining	Declining especially per/Gb	Declining especially per/Gb	Already very low or free
Usage	Declining	Growing	Growing	Growing	Growing

Table 5 Trend comparison of competitive substitutes to Telstra's PSTN services.

The market trends that outline a growing competitive market favouring PSTN substitutes, a comprehensive wholesale access regime and the fact Telstra's prices fell below that set by the price cap provide a strong case for the removal of retail price controls.

The current price control regime should be replaced by a simple regime that reflects Telstra's statements in the June 2009 response to the Federal Government's *National Broadband Network: Regulatory Reform for 21st Century Broadband Discussion Paper*. Telstra strongly supports continuity of two core consumer protections:

- the requirement that an untimed local call be made available to all Australians; and

- that all Australians should have access to a uniformly priced standard telephony service regardless of where they live or work.

These are core consumer safeguards, a fundamental part of the Australian telecommunications landscape, and an important safety net for all Australians which should be retained.

However, Telstra notes that the Minister has directed the ACCC to have regard to:

> '*the intention of the Government that price controls for legacy telecommunication retail services will remain in place for a further two years*'.

Therefore, if the ACCC chooses to recommend continuation of price controls, the issues in the following sections of this submission need to be taken into account for any Future Determination to facilitate the transition to removal of the controls in 2012.

C Future Price Caps should only apply to a broad basket of services

If Telstra is to remain subject to CPI – X based retail price controls in any Future Determination, the basket structure should mirror the approach taken in the Current Determination for Basket 1. This approach reflects the ACCC's policy of promoting efficient price setting and the bundled services common cost base. The treatment of fixed line services as a bundle of services is a standard regulatory approach and reflects the real world behaviour of consumers. This should also inform the ACCC's analysis of individual price movements within the basket.

Historically the ACCC has supported broad based price caps. As noted in the 2001 review:

> "…a central theme of all the price control arrangements since their inception in1989 has been the inclusion of a broad CPI-X per cent price cap on a broad basket of services"[37]

> "if there are a number of services that the government decides should be subject to a price cap, then those services should be included in a broad price cap if they share common costs"[38]

This position was reiterated in 2004:

> "Firstly, broad baskets provide a greater scope for Telstra to be flexible in its pricing, which is likely to be more efficient than individual price-caps on each service. A broad basket of services allows a service provider to use Ramsey pricing to minimise the efficiency losses from covering common costs."[39]

It was most recently reiterated in 2010 in the Discussion Paper:

> "A third reason for applying CPI – X price controls in these circumstances, and applying them broadly on baskets of telecommunications services, is that they give firms the freedom to structure their prices in a way that efficiently recovers 'common' costs of production."[40]

The bundle concept is also used in the context of the imputation testing under the price equivalence framework (operational separation) and Non-Price Terms and Conditions Report Relating to the Accounting Separation of Telstra (Accounting Separation Reports). The ACCC's Accounting Separation Reports include an imputation test on the total bundle (access, local calls, national long distance calls, international long distance calls and fixed to mobile calls) of fixed voice products.

The use of a bundle in the ACCC's Accounting Separation analysis reflects the accepted regulatory view that prices within the bundle may be cross-subsidised. This is a point acknowledged in the ACCC's final determination for model price terms and conditions for the PSTN, ULLS and LCS:

> "The Commission's imputation analysis indicated that there is cross-subsidisation of Telstra's local call services [consisting of line rental, local and neighbourhood calls] from its long distance services. However, the existence of positive margins on the long distance services which more than offset the negative margins on local call services means that Telstra's retail local call prices are not considered predatory because access seekers should be able to emulate this cross-subsidisation."[41]

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[37] ACCC, *Review of Price Control Arrangements*, February 2001 p 29.
[38] Ibid, p 31.
[39] ACCC, *Review of Price Control Arrangements*, February 2005 p 46.
[40] ACCC, *Review of Telstra's Price Control Arrangements - Discussion Paper*, January 2010 p 8.
[41] Final determination for model price terms and conditions for the PSTN, ULLS and LCS services, October 2003, p. 101.

Similarly, changes in the prices of individual services within a bundle can also be cross-subsidising.

The bundle is also an established commercial norm. Consumers purchase a bundle of fixed services – they do not purchase individual services. They are bundling fixed telephony services with mobile services, fixed and mobile broadband and pay television services in a variety of combinations. The idea of having a separate account and a separate bill for the calls of just one aspect of their telecommunications needs is not an attractive proposition. Consumer preference in favour of these full bundles is evident in the decline in customers acquiring preselect services from a separate provider which now sit for residential consumers at (C-i-C).

This is a point acknowledged by the ACCC – in its consideration of Telstra's LCS and WLR exemption applications,

> "*Consumers are increasingly acquiring a bundle of fixed voice services from the one provider. This may be due to customer preferences of receiving a single bill for all the services and the cost savings of acquiring a bundle from the same service provider – the price of the package is usually at a discount to that of acquiring given amounts of a product separately. For the same reasons, the ACCC is of the view that it is appropriate to include basic access, local calls, national and international long distance calls and fixed to mobile calls within the bundle (together, "Fixed Voice Services").* "[42]

It is clear based on the statements made by the ACCC in relation to efficient pricing and other regulatory analyses that the bundle of services is accepted as an important focus of price changes. As the ACCC noted in 2001 where services share common costs it is more efficient to price services as a bundle and allow the operator to:

> "*have the freedom to restructure its prices so that it raises prices proportionally more where demand is least sensitive*"[43]

Raising or keeping prices static where demand is least sensitive to price increases (least elastic) allows for price reductions for services where demand is more sensitive to price (most elastic). In a market where demand is falling across the board the decision is starker; price reductions are made to forestall a greater loss in volume. Figure 10 tracks the price changes for the bundle of services in basket 1 over the price control period applying a Tornquist index to individual service prices taken from the RKR Limb 2 reporting. The price changes for individual services in Figure 10 below represent the contribution to the change in price of the bundle. That is, they are weighted by revenue shares also taken from the RKR.

Telstra notes there are inherent uncertainties in calculating the elasticities; however the following estimates are designed to provide an indicative result.

(C-i-C)
Figure 10 Change in price of Bundle 1 services from FY 2004-05 to FY 2008-09.

Table 6 compares the elasticities of the various services to their price changes from FY 2004-05 to FY 2008-09. The methodology for calculating this is at Appendix D

	Elasticity	Revenue weighted contribution to change in price for the bundle
Access	C-i-C	C-i-C
FTM	C-i-C	C-i-C
STD	C-i-C	C-i-C
Local	C-i-C	C-i-C

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[42] ACCC, Telstra's local carriage service and wholesale line rental exemption applications- Final Decision and Class Exemption, August 2008, p 42.
[43] ACCC, Op Cit .

IDD	C-i-C	C-i-C
Bundle		C-i-C

Table 6. Comparison of Telstra's Basket 1 elasticities.

(C-i-C)

These price movements reflect exactly what Ramsey pricing would predict an efficient supplier would do to maximise welfare. It is not surprising Telstra has structured its prices to reflect the point elasticities of the prices in the bundle.

(C-i-C)

The ACCC has long supported a broad cap in preference to sub-caps. In 2001 and 2004, the ACCC stated:

> "*Once a broad cap is in place, sub-caps should not be included in the price control regime from an efficient pricing perspective, as they will limit the extent to which Telstra can efficiently restructure its prices*"[44]

> "*The ACCC also notes that as sub-caps impose additional restrictions on the movement of the price of services within a broader basket, it considers that they should generally be avoided unless there is good reason to do so otherwise.*"[45]

In the Discussion Paper, the ACCC has now:
- noted its expectations of greater pass-through of mobile terminating access service ("**MTAS**") reductions to FTM calls did not eventuate; and
- commissioned a report to assess whether MTAS rate reductions should pass through to FTM call rates and whether this would promote consumer welfare. It is noted that the authors of the report state such analysis would benefit from including fixed-to-fixed calls and assessing whether Ramsey pricing by fixed operators might be one reason for apparently high prices for fixed to mobile ("**FTM**") calls[46]. Assessing a single price within a composite bundle is questionable.

Telstra and industry pricing reflects the broad cap approach that has been in place for the last four and a half years. Any change to this approach in favour of sub-caps would be incorrect for the following reasons:

1. It would be inconsistent with principles of welfare maximisation, whereby suppliers seek to reflect consumer purchasing preferences within the price of a bundle. As such, it reduces customer choice in a way not valued by customers.

2. The imposition of a regulated price reduction in the FTM rate below the efficient level may generate a 'next best' price increase in another price element or elements. Such arbitrary price signals tend to prevent, rather than support, efficient pricing.

3. In addition to the direct detriment to Telstra's customers, such interference would be anti-competitive. It would be contrary to the principles of competitive neutrality and the interests of consumers to impose extraneous inefficient pricing directions on Telstra, reducing its ability to compete with competitors who are not similarly constrained.

4. Any attempt to capture future reductions in MTAS as a reduction in Telstra's FTM pricing raises the practical problem that the regulatory process for MTAS reductions is completely independent from the Minister's power to make a price control

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[44] Ibid p.32
[45] ACCC, Op Cit, p 47.
[46] Analysis Mason, Report for the Australian Competition and Consumer Commission, Regulatory treatment of fixed-to-mobile pass-through, Public version of the final report, October 2009, page 49.

determination under the Telecommunications (Consumer Protection and Service Standards) Act 1999. The former process is subject to multi-lateral negotiations and potential arbitration if these negotiations fail, with completely independent timeframes to that proposed by the Minister in the Direction for any Future Determination. In addition, Telstra is not the only fixed line service provider that is also a mobile network owner. Any sub-cap linked between MTAS reductions and FTM calling would need to be replicated across industry, while the Minister's power to impose price controls is limited specifically to Telstra.

5. Estimating TFP effects on a narrow basket such as FTM would be practically impossible, or completely arbitrary in the timeframe available to make any Future Determination.

6. Finally, the introduction of sub-caps for calling types within the bundle would simply exacerbate the scope for regulatory error. As illustrated in Figure 9 a regulatory error occurred in setting the caps in the Current Determination. Introducing sub-caps within the context of a broader cap in any Future Determination risks a compounding of multiple regulatory errors. It would introduce regulatory uncertainty and increase the regulatory risk, reduce customer choice and severely constrain the ability of Telstra to respond to consumer in needs – and act contrary to the interests of customers and industry best practice.

D   If price caps are retained, they should be relaxed

To reflect increasing competition all four baskets in the Current Determination should be relaxed. In addition, given the transformation of the industry to optic fibre and the step change in costs, the definition of connections should exclude optic fibre. With an unchanged basket structure, any deficits or credits earned in the financial year 2009-10 should be rolled over into the Future Determination. Furthermore, a mechanism should be in place to allow 'pass-through' of external costs such as carbon abatement; and an amendment is also required to the ACCC's methodology for calculating SIOs.

Basket 1

The cap on Basket 1 should be relaxed to CPI-0. Increasing competition warrants the relaxation of the existing controls.

A decision to remove or loosen the cap affirms the market is more competitive than it was four and a half years ago. Maintaining or strengthening it would infer that competition has remained unchanged or has decreased. As outlined in our previous analysis, there is effective competition in the market that places competitive discipline on Telstra's prices.

Furthermore, loosening the cap reduces the risk of regulatory error. A commonly acknowledged problem with setting price control caps is the error the policy maker will inevitably make. As pointed out by Professor George Yarrow:

> "*And it can safely be said that regulators, no matter how wise and no matter how well resourced, could be expected to make significant mistakes – because the problem has to do with information. The determination of a competitive price is a process that (implicitly) makes use of huge amounts of information, of such scale and scope as can not feasibly be processed by a single decision making unit such as a regulatory agency.*"[47]

Over the 20 year history of the price controls there have been numerous global events, such as the dot com crash in the early '90s and the recent global financial crisis. Such events cannot be forecast - no matter how much information the regulator may have at its disposal. These events, which may have significant impacts on Telstra's business, make predicting the future productivity for the purpose of imposing regulation very challenging if not impossible

Although neither Telstra nor policy makers can predict precisely the direction of its future costs, it is worth noting that despite declining staff numbers, Telstra's aggregate labour costs (excluding redundancy) have remained relatively static over recent years, and is likely to increase in the future given the continuing strength of the labour market.

Indeed, as outlined in the analysis of Telstra's actual TFP, the setting of the X at CPI was inaccurate and was set above Telstra's actual TFP. A CPI-0 cap will lessen the possibility of misjudging future productivity improvements given uncertain future costs.

Baskets 2 and 3

The caps on Baskets 2 and 3, Telstra's residential and business basic line rental services should be relaxed further or at a minimum kept fixed at CPI-0. As they are pre-selectable services, Telstra earns less voice revenue on these services than on its other voice telephony plans. This results in a limited ability for Telstra to recover its cost in the provision of the service. As outlined earlier,

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[47] George Yarrow, *Report on the impact of maintaining price regulation*, Regulatory Policy Institute Oxford, January 2008, p 21.

Ramsey pricing allows Telstra to price its services efficiently to recover the common cost of the bundle. The inability to Ramsey price heightens the risk of regulatory error in setting the cap.

Basket 4

Basket 4 should be relaxed and optic fibre should be removed from the definition of connections. The government is setting a clear mandate for the use of fibre connections in Greenfield estates. Unlike copper connections, fibre connections are subject to significant levels of competition. This removes the rationale for imposing price controls. Furthermore, the move to fibre will also reduce the scale economies Telstra has in relation to copper connections, likely increasing the cost per connection and necessitating a relaxation of the basket 4 cap.

The Current Determination imposes a cap on the price Telstra can charge for connections. Connections have, for decades, been a fairly consistent product offering by Telstra but this part of Telstra's business will soon be subject to a radical shift. This shift, already evident in the growth of competitive tenders for fibre in Greenfields estates, will be greatly accelerated by the enactment of the proposed Telecommunications Legislation Amendment (Fibre Deployment) Bill 2009 which mandates optic fibre lines in many more real estate development project areas from 1 July 2010.[48] This commencement date will coincide with the commencement date of any Future Determination.

Clause 5(2) of the Direction refers to the intention that price controls for retail services remain in place for a further two years, during which time there will be consideration of the impact of the transition to the NBN. However, the growing penetration of optic fibre connections for mass market services is a "here and now" issue. Telstra is only one of a large number of operators competing to deploy network in Greenfield estates. Most developers of Greenfield estates use competitive bidding processes to select an operator to deploy network and Telstra's competitors win a substantial proportion of these competitive contests. Telstra is successful in approximately C-i-C of bids). These competitive dynamics in the supply of optic fibre lines are likely to be massively accelerated by the Government mandating fibre deployment and Telstra's share will be subject to continuing pressure.

As any Future Determination will coincide with the commencement of the optic fibre mandate, it is appropriate for the ACCC to consider whether Telstra's optic fibre connections should continue to be subject to price controls in this rapidly changing environment. The ACCC considering this issue now is not inconsistent with the Minister's statement that any Future Determination would be a "holding operation" until NBN impacts can be considered. Telstra notes that clause 5(5) of the Direction enables the ACCC to consider all other relevant matters in this inquiry. Accordingly, there is no impediment to the ACCC inquiring into and reporting on the appropriate price control arrangements that should be applied to copper and fibre optic connection services from 1 July 2010. As the ACCC notes in the Discussion Paper, the rationale for price caps is that they provide a constraint on the pricing of a dominant operator in cases where competition is considered too weak to affect those constraints. However, that rationale does not apply to optic fibre connections. The inclusion of optic fibre lines within the Current Determination is likely to have been an inadvertent consequence of the drafting, rather than a conscious policy decision.

In this competitive environment, the application of price controls only to Telstra places it at a competitive disadvantage. As noted in the Department of Broadband Communications and the Digital Economy's ("DBCDE") Fibre in Greenfields May 2009 discussion paper, strong competition is envisaged between retail providers that may obviate the need for price regulation at the retail level:

> "*If Telstra were a retail provider on the greenfields FTTP infrastructure, it would be subject to the price control arrangements that would apply to it generally. Currently, other retail providers would not be subject to direct price regulation. However, the proposed model*

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[48] An 'exposure draft' of the Bill was issued for public consultation on 23 December 2009.

envisages strong competition between retail providers to keep downward pressure on prices at this level. Whether greater regulation of prices in greenfield estates would be necessary or workable, would need to be considered in the broader regulatory context. Nevertheless views are welcome on this issue." [49]

In addition to competition between fibre providers for real estate development projects, even though NBN Co will not, at least initially, be deploying in these areas, its own pricing will provide an anchor or benchmark against which the market will operate. We also note that it is possible for the ACCC to regulate, under Part XIC of the TPA, the wholesale prices charged by NBN Co and the broader optic fibre deployment community through declaration. If any regulated wholesale prices were higher than Telstra's regulated retail prices under any Future Determination, then Telstra singularly, without justification, would be subject to a Government mandated loss on those services. Regulation at the wholesale layer should obviate the need for regulation at the retail layer.

Accordingly, there is no economic rationale for any Future Determination to regulate optic fibre connections. One of the simplest means to address this is to carve out optic fibre connections from the current definition of "connection". This approach would also be consistent with the Government's proposed legislative arrangements for the deployment of optic fibre in real estate development project areas, and could cross-reference these arrangements to create a coherent legislative structure. After the current definition of connection in clause 5(1), the following could be inserted:

> *"...but does not include the supply of a standard telephone service that is provided by means of an optic fibre line".*

This would be followed by the inclusion of "optic fibre line" in the list of definitions covered by the Telecommunications Act 1997 in clause 5(2).

Reasonably quickly the mandate of optic fibre connections will result in a decline in copper connections. Telstra will need to significantly alter its internal operations facilitating connections and will lose the benefits of current scale economies with the result that the average cost of copper connections is expected to increase. Such radical shifts in business operations as the current move from copper to fibre are difficult to plan for, as is gauging the cost impact on Telstra operations. This is particularly so as the Government is yet to provide a detailed scope of the mandate and hence the number of new developments that are likely to become subject to the policy are not yet known. Therefore, it is equally difficult to gauge what would be an appropriate control on copper connections from the commencement date of any Future Determination. At best, if any price controls for copper connection services are to be retained, the price controls limiting the movement in connection charges should be more relaxed than they have been previously.

Rollover arrangements

An extension of the existing basket structure from 1 July 2010 will constitute a 'rollover' of the existing arrangements. If this occurs the new controls should follow the Government's policy of 2002 and 2009 that 'rolled over' Telstra's deficits and credits into the next price control period.

Under the existing arrangements Telstra is able to plan its product offering each year with a clear understanding of its regulatory obligations from year to year. This includes any credits or deficits it carries in from one price control period to the next. Given the short period of time between the start of any Future Determination and any decision made on the nature of the controls under that determination, there is insufficient time for Telstra to plan its offerings for the current price control period and the next [50]. Not allowing rollover if the existing

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[49] DBCDE, Fibre in Greenfields Discussion Paper, May 2009, p 17.
50 Assuming that any Future Determination will be for two years with two one year price control periods.

arrangements are maintained will unfairly penalise Telstra. Of concern is that Telstra may need to align price changes with regulatory timings – rather than respond to customer preferences. Telstra may be required to abruptly disrupt its standard business practices and may be required to spend significant sums in making IT and other process changes.

Tax offsets

Telstra is concerned the Current Determination and potentially any Future Determination prevents it from "passing through" to end users the impact of certain taxes. These are taxes specifically designed to ensure that they are "passed through" such as carbon abatement or where Telstra's competitors and others subject to the tax do pass the tax through, such as with the *Utilities (Network Facilities) Tax Act 2006* (ACT). Telstra should not be prevented by any Future Determination from doing what other entities in the broader economy are entitled to do. Indeed, in the case of any carbon abatement scheme, not allowing Telstra to "pass through" the impact of any such impost would defeat the policy intent for introducing the tax.

ACCC methodological issues

The existing ACCC methodology for calculating PSTN yields uses SIOs at the end of the month. However, an optimal methodology calculating basic access rental yield accurately for a given month would involve dividing revenue by the average SIOs during that particular month.

Although there is some variation from quarter to quarter, PSTN SIOs are in constant decline. In a declining market, yield based on start of month SIOs will be understated; yield based on SIOs at the end of the month will be overstated. The simplest way to calculate "average" SIOs for a month would be to take the straight average of the SIOs at commencement of month, and SIOs at end of month. This will removes any bias that may result from using SIOs at the start or end of the month.

The methodology also has the unintended effect of discouraging or precluding discounting or price adjustments to customers in credit management. Telstra has a comprehensive hardship and credit management program which attempts to work with vulnerable and disadvantaged customers to ensure continuity of fixed telephony services. This program involves the distribution of credit notes (such as the Telstra Bill Assistance Program) via a variety of channels - including peak welfare groups. It is Telstra's view that these types of programs, rather than the use of price controls, are more effective in guaranteeing affordability and accessibility - as they target customer needs directly. However, the methodology discourages such activity in that a credit, discount or allowance made to a customer that may be in credit management is not recognised as a reduction to price control revenues. The price control regulation should encourage rather than discourage Telstra from undertaking these activities.

E   Other issues related to streamlining the Current Determination

In addition to the above issues related to the structure of the baskets, there are a number of other matters included in the Current Determination that should be considered for clarification, review and streamlining in any Future Determination.

Low Income Measures Assessment Committee (LIMAC)

A proposal for streamlining the current obligations is to delete clauses 24, 25, 26 and 27. Those clauses are an oversight mechanism to ensure Telstra complies with clause 22 of its Carrier Licence Condition. Telstra does not understand the necessity for it to furnish information to the ACCC on its compliance with its Licence Condition when each meeting of Telstra's LIMAC is attended by generally four representatives of the Government. See Appendix D which indicates the numbers of Governmental officials who attend each meeting. Given the Government resourcing devoted to attendance at LIMAC meetings, Telstra queries the utility of additional Telstra and ACCC resources being devoted to oversight of Telstra's compliance. This appears to be little more than red tape.

Advertising of subscription plans

The Current Determination includes specific clauses requiring potential customers to be notified about 'effective' prices that might apply in certain limited circumstances under subscription packages. There are around 800,000 Telstra customers on such subscription packages, with most of Telstra's competitors offering similar packages. The average consumer now understands how subscription pricing packages work. Moreover, Telstra's competitors have never been required to disclose similar information about the effective price of calls in their advertising and marketing. The only necessary obligation should be that the full terms on which such packages are offered should, as required by existing legislation, be disclosed in each carrier's standard form of agreement.

Directory Assistance

The existing regulations governing the provision of Directory Assistance ("**DA**") by Telstra are becoming increasingly outdated as patterns of consumption and competition change. Consumers now have a multitude of options for finding directory information, including printed and online directories, online search and the DA and voice services of Telstra's carrier competitors. Consequently Telstra's DA is no longer a unique source of vital information for most consumers, and should no longer be regulated as though it is. To reflect this change, Telstra recommends greater transparency around the regulation of this obligation by an amendment to any Future Determination to bring DA under section 154 (1) of the Telecommunications (Consumer Protection and Service Standards) Act 1999 rather than the current position where it is the sole item regulated under section 157 (1) with decisions on pricing at the sole discretion of the Minister. This level of direct Ministerial intervention is no longer necessary.

Schools and charity obligation

Telstra provides major discounts to schools and charities at rates significantly below Telstra's standard residential and business offers. Telstra seeks a review of the schools and charities obligation as the way it is drafted continues to cause uncertainty which needs to be clarified.

Review of payphone regulation

In the face of rapidly decreasing revenues and demand for these services, Telstra is seeking a review of payphone regulation. Telstra is required to offer payphones under its Universal Service Obligation ("USO"). Widespread mobile phone take-up is seeing significant substitution away from payphones, including by low income consumers who are also supported by Telstra's ongoing low income assistance program. The losses Telstra incurs in its provision of price controlled USO payphones are not fully recovered from the USO levy which discourages investment in this line of business.

Extended Zones

The Extended Zones obligation duplicates an existing contractual relationship Telstra has with the Government with are soon to expire. Telstra is currently in consultation with the DBCDE on the succeeding arrangements and these consultations should run their course without extra contractual requirements.

Appendix A: TFP measurement of Telstra's fixed line price-capped services and the level of 'X'

In this appendix the economic performance of Telstra's fixed line voice services over the period 2003-04 to 2008-09 is assessed by estimating Total Factor Productivity (TFP)

TFP analysis involves the examination of performance in the efficient use of multiple inputs and associated outputs. The TFP index is constructed as the ratio of the aggregate of these outputs to the aggregate of inputs.

The general methodology adopted by Telstra in the calculation of Telstra's fixed line voice services TFP is that outlined in Appendix A of the ACCC's 2004 review of Telstra's price control arrangements.[51] In addition a retrospective price cap of the form CPI-X is estimated from the proceeding TFP results and compared to an output price index of Telstra's fixed line voice services and the actual CPI-CPI price cap.

OUTPUTS AND OUTPUT INDEXES

For the purposes of calculating a fixed line voice services TFP index Telstra's fixed line services are divided into the five activities or outputs that are covered by Telstra's fixed line services price cap, alternatively known as Basket 1. Table **1** describes each of these, and how they are measured along with respective data sources.

Output (services)	Measure Used	Source
Access.	Average number of physical retail access lines in each financial quarter of the year.	RAF/RKR
Local	Total number of retail local calls made in the year.	RAF/RKR
STD	Total number of retail STD minutes in the year.	RAF/RKR
IDD	Total number of retail IDD minutes in the year.	RAF/RKR
F2M	Total number of retail on-net and off-net F2M minutes in the year.	RAF/RKR

Table 1: Outputs

To estimate the output index for Telstra the output quantities outlined in Table **1** are weighted by their respective real sales revenue[52] shares earned from providing the service by making use of a Tornqvist output quantity index.

The output quantities used in construction of the Tornqvist output index are reported in   Table **2**.
(C-i-C)

    Table 2: Output quantities

    Table 3 reports the revenue shares used in construction of the Tornqvist output index.

(C-i-C)

              Table 3: Revenue shares

    Table **4** reports the revenue weighted chained Tornqvist output indexes for each output and the bundled output index of Telstra's fixed-line voice services from 2003-04 to 2008-09 that is used in the construction of the TFP index.

(C-i-C)

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[51] Review of Telstra's Price Control arrangements — an ACCC report, February 2005, Appendix A pg. 118-147.
52 Revenues are deflated by the Weighted Average of Eight Capital Cities CPI before construction of share weights and the respective output index.

Table 4: Revenue weighted fixed-line voice services output indexes (chained)

INPUTS AND INPUT INDEXES

The three main inputs in the calculation of Telstra's fixed line voice services input index are determined as labour, capital, and other costs. This is inline with the approach adopted by the 1995 Productivity Commission (PC), formally the Bureau of Industry Economics (BIE)[53], study of global telecommunications TFP, which included Telstra. Table 5 outlines each of the input quantities, costs, how each is measured and respective sources.

Inputs	Measure Used	Source
Labour Quantities	Total full time equivalent employee's attributable to fixed line services	Financial reports
Capital Quantities	Capital quantity was derived by deflating nominal value of capital by the implicit communication price deflator	RAF – Fixed Asset Statement
Other Quantities	Implicit operation & maintenance quantities derived from deflating operating & maintenance costs (excluding labour costs) by the implicit communications deflator	RAF – Capital Adjusted Profit Statement
Labour Costs	Full time equivalent wage bill attributable to fixed line services[54]	Financial reports
Capital Costs	Value of user cost of capital[55]	Estimated from inputs in RAF – Fixed Asset Statement
Other Costs	Other costs are calculated as total operating expenses less depreciation and labour costs[56]	RAF – Capital Adjusted Profit Statement

Table 5: Input quantities and costs

To estimate the input index for Telstra's fixed-line voice services these inputs are weighted by their respective real cost shares incurred in providing the service by making use of a Tornqvist input quantity index.

The input quantities and real cost shares used in the construction of the Tornqvist input index are reported in Table 6 and 7 respectively.

(C-i-C)

Table 6: Input quantities

(C-i-C)

Table 7: Input cost shares (real)

The user cost of capital is used to weight the input quantity index. The user cost of capital is measured using the same approach adopted by the ACCC in Appendix A of the 2004 review of Telstra's price control arrangements.[57] The user cost of capital is defined by the ACCC as:

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[53] Bureau of Industry Economics (BIE), Research Report 65, International Performance Indicators Telecommunications 1995, p. 146.

[54] Labour is deflated by the implicit labour price the telecoms sector.

[55] Capital was deflated by the implicit communications price deflator.

[56] O&M was deflated by the implicit communications price deflator.

[57] Review of Telstra's Price Control arrangements Op. cit. pg. 123.

$$VAUC_t = \left(r_t + d - \Delta P_t / \Delta P_{t-1} \right).P_t.K_t$$

where:

$VAUC_t$ = value of user cost;

r is the opportunity cost of holding capital in year t;

d is the depreciation rate;

$\Delta P_t / \Delta P_{t-1}$ is the annual rate of change in the price of capital

P_t is the price of capital

K_t is the physical quantity of capital stock in year t

The opportunity cost of holding capital r is measure by the 10-year bond rate and the price of capital P_t was estimated by the implicit communications price deflator derived from the gross value added GDP approach in the national accounts. Table 8 gives the series used in the construction of the final value user cost of capital (excluding the physical quantity of capital stock which is given in Table 6).

(C-i-C)
> Table 8: User cost of capital inputs

The calculated Tornqvist input quantity indexes that are calculated from Table 6 and Table 7 are reported for each input to the fixed-line voice service provided by Telstra from 2003-04 to 2008-09 in Table 9.

(C-i-C)
> Table 9: Cost weighted fixed-line voice services input indexes (chained)

TFP RESULTS

The input, output and TFP indexes for Telstra's fixed-line voice services over the period 2003-04 to 2008-09 are reported in Table 10 and Figure 1 respectively.

	Output	Input	TFP
FY03-04	1.000	1.000	1.000
FY04-05	0.883	0.906	0.975
FY05-06	0.832	0.765	1.087
FY06-07	0.811	0.737	1.101
FY07-08	0.802	0.667	1.202
FY08-09	0.776	0.730	1.063

Table 10: Output, input and fixed-line voice services TFP

Over the period of estimation the compound annual growth rate (CAGR) of TFP of Telstra's fixed-line voice services was 1.03 per cent, outputs and inputs decreased 4.95 and 6.11 per cent respectively.
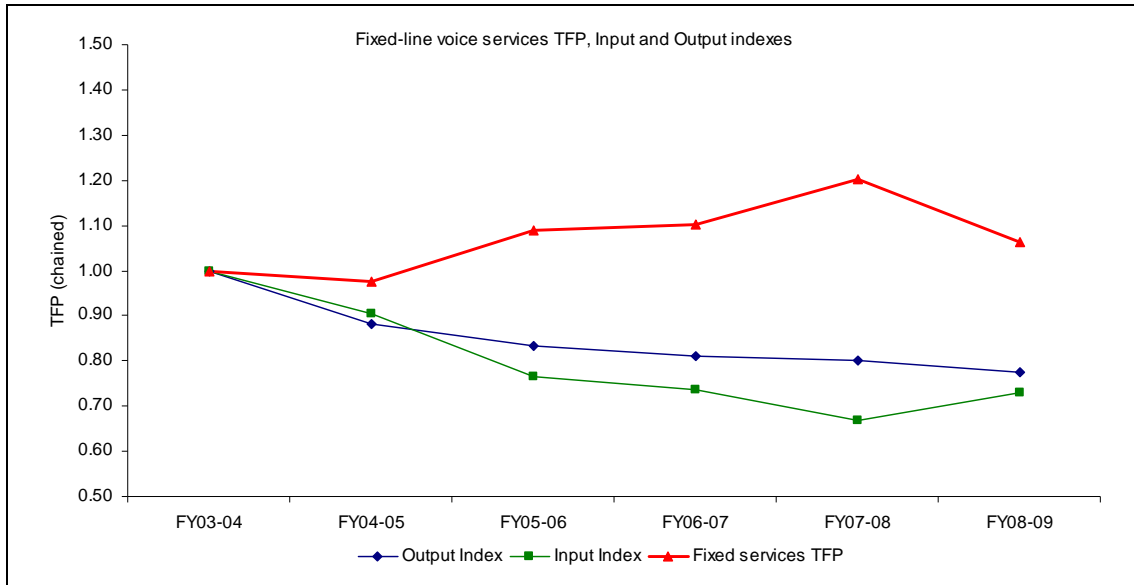
Figure 1: Fixed-line voice services TFP, input and output indexes (chained)

The calculation of 'X', the retrospective price cap and prices

The price-cap that is recommended by the ACCC is that of the form CPI-X, where over the most recent regulatory period, 2005 to 2009, the value of 'X' that was recommended by the ACCC was 4%.[58]

The value of 'X' is determined with reference to the change in the Australian economies annual CPI, which acts as a proxy for the rate of change in output prices in the economy, and the rate of change in the TFP of the economy as a whole as a benchmark measure of productivity. This leads to the formula for 'X' as:

$$\Delta P \ = \ \Delta CPI_{t-1} \ - \ \left(\Delta TFP_T - \Delta TFP_E \right)$$

where:

ΔP = the allowable annual % price change in the basket of price capped services;

ΔCPI_{t-1} = % change in the economy wide CPI from the previous period;

ΔTFP_T = % change in Telstra fixed-line services TFP;

ΔTFP_E = % change in economy wide TFP.

The components of the CPI-X formula are reported in Table 11.

(C-i-C)

Table 11: Components of CPI - X formula

Table 12 reports the CAGR of both the economy and Telstra's fixed-line voice services TFP, which is in line with the approach adopted by the ACCC in setting the a priori value of 'X' in the previous regulatory period.[59] The calculation of the actual 'X' over the last regulatory period is taken as $\Delta TFP_T - \Delta TFP_E$, or the difference between the CAGR of ΔTFP_T and ΔTFP_E. This gives a value of 'X' of 2.04% (1.24%-[-0.80%]).

(C-i-C)

Table 12: Retrospective price cap

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[58] Review of Telstra's Price Control arrangements Op. cit. pg. 142.
[59] Ibid.

Table 12 also reports the calculated (retrospective) price cap based on the actual economy wide TFP and actual Telstra fixed-line services TFP (ΔP). The reported numbers in Table 12 represent the actual ex post price cap that would have been set if there was firstly, perfect foresight and secondly a CPI-X price cap rather than a CPI-CPI price cap applicable.
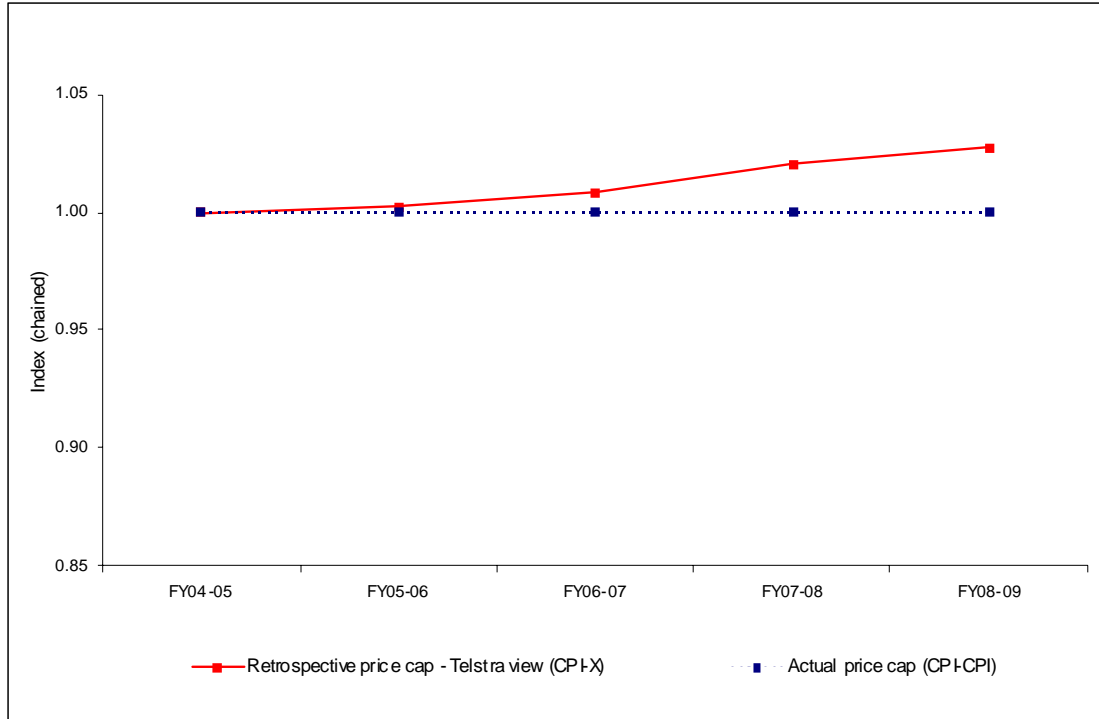

Figure 2: Retrospective & CPI-CPI price cap and actual fixed-line voice output price index

Appendix B International Comparisons

Country	Regulator decision
Denmark	No obligations imposed in the retail market
Luxemburg	Tariffs set freely by operator – must be done with proof of cost orientation.
Finland	Freely set by operator
Sweden	Set by operator, tariffs must be cost orientated
Germany	Applies ex ante tariff notification requirements to the ILEC's traditional retail switched voice services
Netherlands	KPN's fixed retail obligations for residential markets were withdrawn on 1 January 2009
Spain	CMT will set the maximum increases for the monthly fee for fixed access, while the set-up fee is no longer regulated.
France	ARCEP adopted a decision in July 2008, following a market analysis, removing regulation in the retail fixed market.
Ireland	ComReg has decided to withdraw market regulation in the retail calls markets, setting the deadline of 30 April 2008 for the implementation of this de-regulation decision in practice. In the retail access markets ComReg imposed as of 1 October 2007 a price cap on the incumbent, entailing a line rental price freeze until 30 September 2008 and a price cap based on the rate of inflation (consumer price index) thereafter.
Czech Republic	CTÚ withdrew the price regulation obligations from the fixed retail access market for residential customers. The withdrawal of price regulation in the retail access market relies mainly on sufficiency of wholesale remedies
UK	Price controls removed on all retail services

Table 1.Countries that have removed or maintained very limited retail price controls

Comparison of Australian prices to OECD countries with no or limited price control regulation
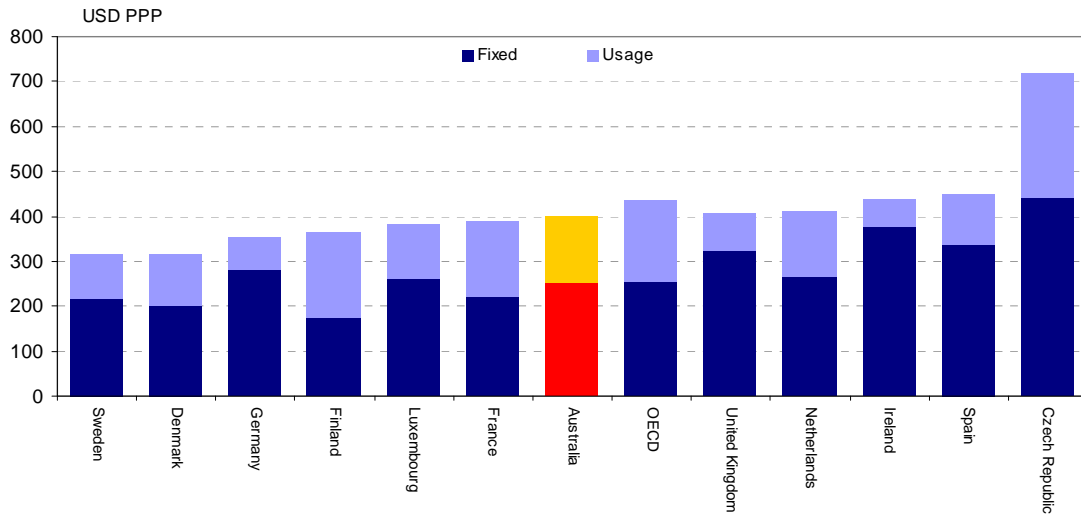
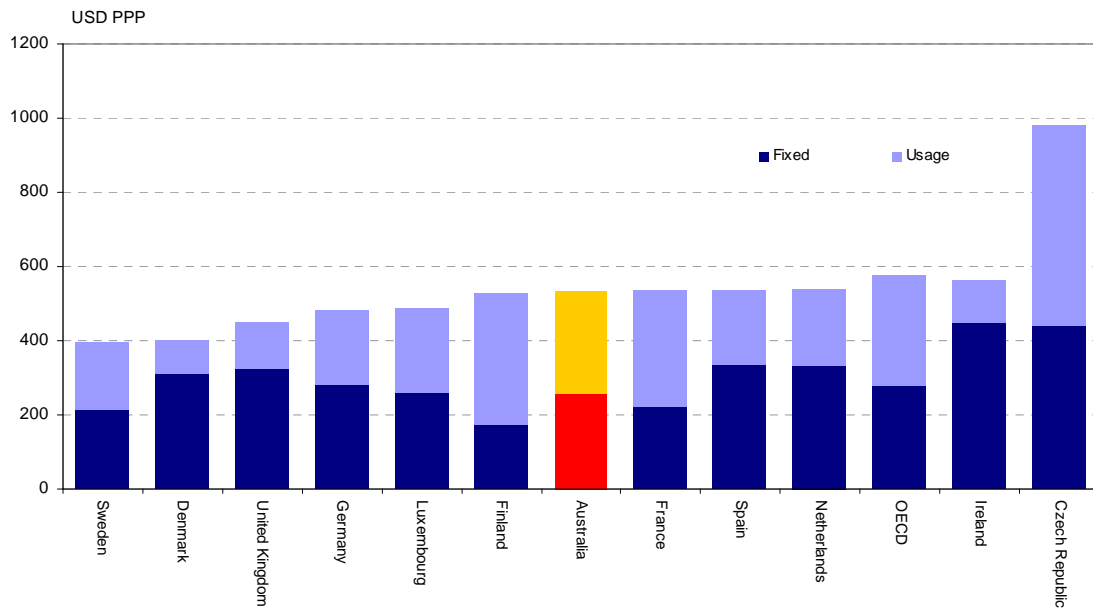Figure 1 OECD residential fixed-line basket: low usage, August 2008

Figure 2 OECD residential fixed-line basket: medium usage, August 2008
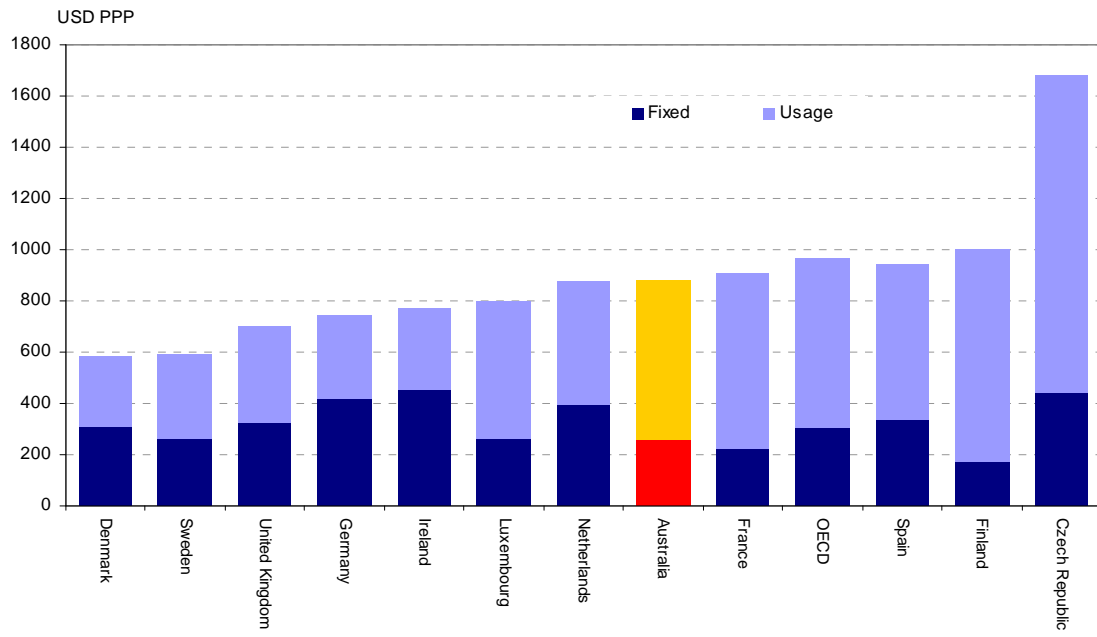
Figure 3 OECD residential fixed-line basket: high usage, August 2008

Appendix C - Indicia of competition in retail energy[60]

Nature and extent of rivalrous behaviour between retailers

• price rivalry between retailers;

• differentiation of products and services between retailers to better meet customer requirements than their rivals;

• proactive and defensive marketing strategies by retailers to obtain new customers and retain existing ones;

• differences in business and marketing models (e.g. between different host retailers and between host and new retailers) to attract customers, manage customer churn and remain viable in a volatile market environment;

• the ability of retailers to identify and discriminate between groups of customers in their price, product and service offers;

• the impact of regulation on retailers' competitive activity, including marketing, price, product and service offerings;

• indicators of compliance and non-compliance with regulatory obligations and customer complaints about retailer service; and

• price and profit levels and trends across and between retailers.

Behaviour of customers in exercising retailer choice

• the extent to which customers are aware that they can choose their energy supplier and are relatively knowledgeable about the types of products and service offerings available in the market;

• the extent to which customers are exercising choice by entering into market contracts and changing retailers in response to the price and service offers available to them;

• customers' willingness to act on market information to choose those energy retailers and products which best meet their needs;

• customers' ability to access and understand information enabling them to compare products and service offerings, and their preparedness to undertake such investigations;

• customer attitudes to retail energy brands and their willingness to try new retailers; and

• the impact of regulation in assisting or deterring the exercise of effective consumer choice in relation to retail energy products.

Impact of entry, expansion and exit conditions on competition

• the conditions for entry and expansion in energy retailing, including access to and the cost of contracts for energy supply and risk management facilities, the presence of economies of scale and scope, and the sunk costs of customer acquisition and retail operations; and

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[60]   AEMC Review of the Effectiveness of Competition in the Electricity and Gas Retail Markets in Victoria, First Final Report, 19 December 2007, p.19-21

- the impact of regulatory requirements such as licensing, retail price regulation and customer service obligations on entry costs and risks.

Appendix D: Estimation of Telstra fixed-line voice services own-price elasticities

Uncertainty always exists when one attempts to theorise about the intuitive impact on the size and direction of the movement in demand volumes from the change in price of a good or service. The only way that this uncertainty can be resolved is by estimating elasticities or demand parameters. This estimation is done by making use of regression analysis.

The role of this appendix is firstly to describe the general demand equations that were estimated along with the data and its construction and secondly to provide the results of the demand equations, along with any necessary additional statistical information.

DEMAND EQUATIONS

Demand parameters in general determine the 'shape' and 'location' of demand functions. A demand function is a rule that tells us how the demand for a particular good or service depends on a number of other variables. The variable of most interest in this appendix is the variable that describes how the demand for lines, minutes or calls of each of Telstra's fixed-voice line services respectively will change given a change in the price of that particular service. This change in demand from a change in the price of that particular service is known as own-price elasticity. A more formal description of an own-price elasticity is the percentage change in demand that is induced from a 1% change in the price of the good demanded.

Clearly, to be able to determine what the own-price elasticity of a good or service is it is required that the demand function of that particular good or service be estimated. This requires determining a priori what variables will help explain any changes in demand. Economic theory tells us that the major determinants of demand are the price of the good itself, along with the price of any substitute goods. Of course there are many other determinants such as:

- incomes or wages of consumers and business;

- changes in the population, which determines the potential holders of fixed-line or mobile services;

- the size and reach of networks, which determines the quality of phone services;

- the price of all other goods in the economy, which helps consumers decide how they can best obtain maximum welfare or value for their money by spending fixed incomes across all goods available to them;

- the costs incurred by consumers if they chose to switch network providers, that is the level of switching costs;

- the availability and price of alternative means engage in voice calls to consumers, such as Voice Over Internet Protocol (VOIP); and,

- seasonal factors such as Christmas and new year.

Clearly this list is not exhaustive however it is in Telstra's view reasonable to assume that the majority of variables that strongly influence demand would be captured in the list provided.

The approach to modelling demands for each of Telstra's fixed-line voice service's is that of a general-to-specific[61] approach. This involves starting with the broadest possible set of demand parameters as dictated by economic theory available and then narrowing down the demand parameters in the demand equation to the parameters that statistically explain any changes in the demand for the service, and have the correct economic interpretation.

The starting point for each of the general-to-specific demand equations is given below in Figure 3:

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[61] For an overview of this method of econometric time series modelling see Wojciech C. W., Deadman D. F. and Elgar E., (1997), "New Directions in Econometric Practice: General to Specific Modelling, Cointegration, and Vector Autoregression."

$$\ln\left(\text{Rental}_{\mathrm{D}}^{\mathrm{T}}\right) = \alpha_1 + \alpha_2 \ln\left(\text{Rental}_{Pt}^{T}\right) + \alpha_3 \ln\left(\text{Rental}_{Pt}^{O}\right) + \alpha_4 \ln\left(\text{Rental}_{Pt}^{A}\right) + \alpha_5 \ln\left(Local_{Pt}^{T}\right) + \alpha_6 \ln\left(Local_{Pt}^{O}\right) + \alpha_7 \ln\left(Local_{Pt}^{A}\right)$$

$$+ \alpha_8 \ln\left(STD_{Pt}^{T}\right) + \alpha_9 \ln\left(STD_{Pt}^{O}\right) + \alpha_{10} \ln\left(STD_{Pt}^{A}\right) + \alpha_{11} \ln\left(IDD_{Pt}^{T}\right) + \alpha_{12} \ln\left(IDD_{Pt}^{O}\right) + \alpha_{13} \ln\left(IDD_{Pt}^{A}\right) + \alpha_{14} \ln\left(F2M_{P}^{T}\right.$$

$$+ \alpha_{15} \ln\left(F2M_{Pt}^{O}\right) + \alpha_{16} \ln\left(F2M_{Pt}^{A}\right) + \alpha_{17} \ln\left(M2MF_{Pt}^{T}\right) + \alpha_{18} \ln\left(M2MF_{Pt}^{O}\right) + \alpha_{19} \ln\left(M2MF_{Pt}^{A}\right) + \alpha_{20} \ln\left(CPI_t\right)$$

$$+ \alpha_{21} \ln\left(Wages_t\right) + \alpha_{22}Pop + \alpha_{23}Pop^2 + \alpha_{24} \ln\left(time_t\right) + \varepsilon_t$$

$$\ln\left(Local_{\mathrm{D}}^{\mathrm{T}}\right) = \beta_1 + \beta_2 \ln\left(\text{Rental}_{Pt}^{T}\right) + \beta_3 \ln\left(\text{Rental}_{Pt}^{O}\right) + \beta_4 \ln\left(\text{Rental}_{Pt}^{A}\right) + \beta_5 \ln\left(Local_{Pt}^{T}\right) + \beta_6 \ln\left(Local_{Pt}^{O}\right) + \beta_7 \ln\left(Local_{Pt}^{A}\right)$$

$$+ \beta_8 \ln\left(M2MF_{Pt}^{T}\right) + \beta_9 \ln\left(M2MF_{Pt}^{O}\right) + \beta_{10} \ln\left(M2MF_{Pt}^{A}\right) + \beta_{11} \ln\left(CPI_t\right) + \beta_{12} \ln\left(Wages_t\right) + \beta_{13}Pop + \beta_{14}Pop^2$$

$$+ \beta_{15} \ln\left(time_t\right) + \eta_t$$

$$\ln\left(STD_{\mathrm{D}}^{\mathrm{T}}\right) = \delta_1 + \delta_2 \ln\left(\text{Rental}_{Pt}^{T}\right) + \delta_3 \ln\left(\text{Rental}_{Pt}^{O}\right) + \delta_4 \ln\left(\text{Rental}_{Pt}^{A}\right) + \delta_5 \ln\left(STD_{Pt}^{T}\right) + \delta_6 \ln\left(STD_{Pt}^{O}\right) + \delta_7 \ln\left(STD_{Pt}^{A}\right)$$

$$+ \delta_8 \ln\left(M2MF_{Pt}^{T}\right) + \delta_9 \ln\left(M2MF_{Pt}^{O}\right) + \delta_{10} \ln\left(M2MF_{Pt}^{A}\right) + \delta_{11} \ln\left(CPI_t\right) + \delta_{12} \ln\left(Wages_t\right) + \delta_{13}Pop$$

$$+ \delta_{14}Pop^2 + \delta_{15} \ln\left(time_t\right) + \nu_t$$

$$\ln\left(IDD_{\mathrm{D}}^{\mathrm{T}}\right) = \phi_1 + \phi_2 \ln\left(\text{Rental}_{Pt}^{T}\right) + \phi_3 \ln\left(\text{Rental}_{Pt}^{O}\right) + \phi_4 \ln\left(\text{Rental}_{Pt}^{A}\right) + \phi_5 \ln\left(IDD_{Pt}^{T}\right) + \phi_6 \ln\left(IDD_{Pt}^{O}\right) + \phi_7 \ln\left(IDD_{Pt}^{A}\right)$$

$$+ \phi_8 \ln\left(M2MF_{Pt}^{T}\right) + \phi_9 \ln\left(M2MF_{Pt}^{O}\right) + \phi_{10} \ln\left(M2MF_{Pt}^{A}\right) + \phi_{11} \ln\left(CPI_t\right) + \phi_{12} \ln\left(Wages_t\right) + \phi_{13}Pop$$

$$+ \phi_{14}Pop^2 + \phi_{15} \ln\left(time_t\right) + \upsilon_t$$

$$\ln\left(F2M_{\mathrm{D}}^{\mathrm{T}}\right) = \gamma_1 + \gamma_2 \ln\left(\text{Rental}_{Pt}^{T}\right) + \gamma_3 \ln\left(\text{Rental}_{Pt}^{O}\right) + \gamma_4 \ln\left(\text{Rental}_{Pt}^{A}\right) + \gamma_5 \ln\left(F2M_{Pt}^{T}\right) + \gamma_6 \ln\left(F2M_{Pt}^{O}\right) + \gamma_7 \ln\left(F2M_{Pt}^{A}\right)$$

$$+ \gamma_8 \ln\left(M2MF_{Pt}^{T}\right) + \gamma_9 \ln\left(M2MF_{Pt}^{O}\right) + \gamma_{10} \ln\left(M2MF_{Pt}^{A}\right) + \gamma_{11} \ln\left(CPI_t\right) + \gamma_{12} \ln\left(Wages_t\right) + \gamma_{13}Pop_t$$

$$+ \gamma_{14}Pop_t^2 + \gamma_{15} \ln\left(time_t\right) + \psi_t$$

where :

Demands

$Rental_D^T$ = the total adjusted monthly demand for Telstra basic consumer basic access lines;

$Local_D^T$ = the total demand seasonally adjusted monthly demand for Telstra local calls;

STD_D^T = the total demand seasonally adjusted monthly demand for Telstra STD minutes;

IDD_D^T = the total demand seasonally adjusted monthly demand for Telstra IDD minutes; and,

$F2M_D^T$ = the total demand seasonally adjusted monthly demand for Telstra F2M minutes;

Prices

$Rental_P^{T,O,A}$ = the real monthly rental charged by either Telstra (T), Optus (O) or All Other providers (A);

$Local_P^{T,O,A}$ = the real local call price per minute charged by either Telstra (T), Optus (O) or All Other providers (A);

$STD_P^{T,O,A}$ = the real STD call price per minute charged by either Telstra (T), Optus (O) or All Other providers (A);

$IDD_P^{T,O,A}$ = the real IDD call price per minute charged by either Telstra (T), Optus (O) or All Other providers (A);

$F2M_P^{T,O,A}$ = the real fixed-to-mobile call price per minute charged by either Telstra (T), Optus (O) or All Other providers (A); and,

$M2MF_P^{T,O,A}$ = the real mobile originated call price per minute charged by either Telstra (T), Optus (O) or All Other providers (A);

Environmental variables

CPI_t = the ABS reported weighted average of all eight capital cities consumer price index;

$Wages_t$ = the ABS reported average wage of persons in the Australian workforce;

Pop_t = the ABS number of Australian households in the population; and

$time_t$ = a linear time trend

Other

$\varepsilon_t, \eta_t, \nu_t, \upsilon_t,$ and ψ_t are independently and identically distributed (i.i.d) normal residual variables

$t = 1, K, N$; and,

All other parameters are to be estimated and superscript T, O or A represents demand or prices for Telstra, Optus or All Other competitors.

Figure 3: Telstra's fixed-line voice services demand equations

Several points should be noted about the general regression equations from Figure 3:

- Rental prices are included, specifically Telstra's rental price, in each of the fixed-line voice service demand equations. This is because access to a basic access service is, all else equal and setting aside access to pay phones, a necessity to access fixed-line voice services;

- Mobile originated calls are also included in each fixed-line voice service demand equation as mobile products are a direct substitute for each of the available fixed-line calling types;

- Population is also included twice and in level's form (as opposed to a logarithmic representation), Pop and Pop^2, this is so as to allow for a maximum to be tested. That is, are there a maximum number of households who will potentially take up or a point after which services will decline in number, despite any growth in the number of households? and

- The variable $time_t$ is used to capture any long run trends between the dependent variables and independent variables. That is all dependent variables have been determined to be trend stationary.[62] This will be described in more detail in the proceeding section.

DATA CONSTRUCTION AND TIME SERIES TESTS (UNIT ROOTS)

Data construction and sources

All data that refers to Telstra's fixed-line services is sourced from Telstra's RAF and RKR. All mobile data that refers to Telstra is sourced from Telstra's internal Product Reporting Group — Mobility Reporting. CPI, wages, and households are sourced from the Australian Bureau of Statistics (ABS), and all other data (i.e. competitor prices) that does not relate to Telstra was sourced from publically available sources. Table 13 outlines the relevant constructions/descriptions of all other data that does not relate to Telstra or that was sourced from the ABS.

Variable	Construction/Description	No. of final obs.	Source
$Rental_P^{O,A}$	Taken as the ratio of reported bi-annual and quarterly rental income to the number of retail rental customers. . Missing data supplemented and estimated by reported growth rates in prices from the ACCC's annual Telecommunications reports.	73 - Sep-03 to Sep-09	Financial reports and ACCC Telecommunication's Report
$Local_P^{O,A}$	Taken as the ratio of reported bi-annual and quarterly local call income to the number of retail local calls. . Missing data supplemented and estimated by reported growth rates in prices from the ACCC's annual Telecommunications reports.	73 - Sep-03 to Sep-09	Financial reports and ACCC Telecommunication's Report
$STD_P^{O,A}$	Taken as the ratio of reported bi-annual and quarterly STD call income to the number of retail STD minutes reported. . Missing data supplemented and estimated by reported growth rates in prices from the ACCC's annual Telecommunications reports.	73 - Sep-03 to Sep-09	Financial reports and ACCC Telecommunication's Report
$IDD_P^{O,A}$	Taken as the ratio of reported bi-annual and quarterly IDD call income to the number of retail IDD minutes reported. Missing data supplemented and estimated by reported growth rates in prices from the ACCC's annual Telecommunications reports.	73 - Sep-03 to Sep-09	Financial reports and ACCC Telecommunication's Report
$F2M_P^{O,A}$	Taken as the ratio of reported bi-annual and quarterly F2M call income to the number of retail F2M minutes reported. Missing data supplemented and estimated by reported growth rates in prices from the ACCC's annual Telecommunications reports.	73 - Sep-03 to Sep-09	Financial reports and ACCC Telecommunication's Report

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[62] To determine if variables are trend stationary or posses what is called a unit root a test called an Augmented Dickey Fuller (ADF) test is conducted.

	Taken as the ratio of reported bi-annual and quarterly mobile originated call income to the number of retail mobile minutes reported. Missing data supplemented and estimated by reported growth rates in prices from the ACCC's annual Telecommunications reports.	73 - Sep-03 to Sep-09	Financial reports and ACCC Telecommunication's Report
$M2MF_P^{O,A}$			

Table 13: Data construction, description and sources competitor data

There are several points that should be noted from Table 13 and Figure 3, which include:

- Seasonally adjusted — demand for minutes and some prices can be highly seasonal. Any seasonal variation in the demand for minutes in particular might upset the ability of the regression analysis to accurately determine the impact of prices, and other explanatory variables, on the demand fro minutes. For this reason it is necessary to remove the seasonal influence from the data. This is achieved by using the X-11 seasonal adjustment process;[63]

- All prices are converted to real September 2009 dollar to September 2009 dollars by the weighted average of eight capital cities' CPI;

- 'All Other' includes Vodafone and Hutchinson for mobile originated call prices. Fixed-line voice services 'All Other' includes AAPT and Primus;

- Prices are taken as the total average price which includes where relevant flagfall charges across both retail and business markets; and,

- To improve the degree's of freedom of the regression's the data was interpolated from quarterly or bi-annual data to monthly observation by making use of a cubic spline method with the last data observation matched to the original data. This method assigns each value in the low frequency series to the last high frequency observation associated with the low frequency period, and then places all intermediate points on a 'natural' cubic spline (or line, curved or straight) connecting all the points.[64],[65]

Time series tests (unit roots)

Many economic times series are classed as non-stationary series, that is, their mean and variance changes randomly over time. Such variation makes it intrinsically difficult to determine if any long run relationships between demand and variables such as price exist, as the demand series depart from any given value as time goes on. This makes it difficult to determine if changes in the demand are actually being driven by changes in price or other explanatory variables.

However, if the overall, long run trend is particularly evident and is in one direction or another then the series is said to be trend stationary. That is once the data is de-trended or the trend accounted for by the inclusion of a time trend, as is the case in Figure 3then long run movements in demand can be determined with more reliability as being due to changes in prices or other explanatory variables.

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[63] This is done with the aide of the Eviews statistical package, which applies the X-11 method as programmed by the US Bureau of Labour Statistics.

[64] A cubic spline is defined by the following properties: 1.Each segment of the curve is represented by a cubic polynomial; 2. Adjacent segments of the curve have the same level, first derivative and second derivative at the point where they meet; 3. The second derivative of the curve at the two global end points is equal to zero (this is the "natural" spline condition).
Cubic spline interpolation is a global interpolation method so that changing any one point (or adding an additional point) to the source series will affect all points in the interpolated series.

[65] See Nievergelt, Y., (1993),*UMAP: Module* 718; *Splines in Single and Multivariable Calculus*, for an exposition of cubic spline methods for interpolation of data.

To determine if a series is trend stationary[66] several tests can be performed, however the most popular is what is called an Augmented Dickey Fuller (ADF) test. The results of ADF tests on each of the demand series is reported in Table 2.

(C-i-C)
Table 14: Augmented Dickey Fuller tests for unit roots

The results of the above tests show that each of the demand series should be modelled with the inclusion of a time trend and that the a priori view from inspection of the data that each series exhibited a trend stationary pattern was correct. Therefore a long run relationship can be determined between each demand series and the respective drivers of demand.

REGRESSION RESULTS

Following the appropriate checks for unit roots in Table 14, the appropriate seasonal adjustments and conversion of data to real dollar terms, each regression can now be estimated. The final regression a results are reported in Table 3 following the application of the general-to-specific modelling framework in which statistically insignificant drivers[67] of demand along with variables that display counterintuitive economic meaning, such as the incorrect sign are sequentially removed from the regression, and the regression recursively estimated.
(C-i-C)

Table 15: Final regression results

To test if the demand functions represent long run relationships after controlling for the trend stationary characteristics of the demand variables, special tests must be used called cointegration tests. Once these tests have passed, the least squares regression estimates in Table 15 are deemed to be stable long run parameters. This is especially important for determining if the estimates of elasticities to come from the regression results are in fact the true long run estimates.

To conduct the cointegration tests, one simple method is to estimate the series of values for each residual term from Table 13, $\varepsilon_t, \eta_t, v_t, \upsilon_t,$ and ψ_t and then test if this series varies through time, on average or not (i.e. testing for a unit root). If these series are found to respectively reject the presence of a unit root then the resulting regression is determined to be cointegrated and a long run representation of the true relationship.

The last line in Table 15 shows the results of this test, where the null hypothesis is that the respective series has a unit root. Given that each p-value is less than the rule of thumb threshold of 0.1, then we conclude that each series does not display the presence of a unit root and the regression is cointegrated.

The overall implication of the results in the last line of Table 15 is that the estimated elasticities from the respective regressions a can be interpreted as stable long run results. The estimated own-price elasticities can be directly determined from the regression results, given that the functional form used is a log-log model. The estimated own-price elasticities are reported in bold in Table 15 and are summarised in Table 16.

(C-i-C)
Table 16: Telstra fixed-line voice service own-price elasticities

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[66] The focus here is on trend stationary data rather than difference stationary data as plots of the demand data clearly shows that the data is trending, with little or no variation month-to-month. However tests for difference stationary data were performed and all rejected the hypothesis of difference stationary series.
[67] The threshold p-value of 0.1 was used to determine statistical significance.

Appendix E: Attendance of FAHCSIA (member) and the ACMA and DBCDE (observers) at LIMAC 1 Jan 2006 – 31 Dec 2009

Meeting #	Date	FAHCSIA	DBCDE	ACMA	Total
29	13 Feb 06	1	1	1	3
30	8 May 06	1	1	0	2
31 Audio	7 Jul 06	2	3	0	5
32	14 Aug 06	1	2	1	4
33 Audio	5 Oct 06	0	0	1	1
34	11 Dec 06	2	2	1	5
35 Audio	19 Jan 07	1	1	1	3
36	19 Feb 07	1	2	1	4
37	14 May 07	1	2	1	4
38	13 Aug 07	2	2	1	5
39	10 Dec 07	1	1	0	2
40	11 Feb 08	1	1	1	3
41	12 May 08	1	2	1	4
42	11 Aug 08	1	1	1	3
43	8 Dec 08	2	1	1	4
44 Audio	15 Jan 09	1	4	1	6
45	9 Feb 09	2	1	1	4
46	11 May 09	1	2	1	4
47	24 Aug 09	1	2	1	4
48	14 Dec 09	2	1	1	4
Total All	20	25	32	17	74
Total F-2-F	16	21	24	14	59

Table 1 Attendance of FAHCSIA (member) and the ACMA & DBCDE (observers) at LIMAC 1 January 2006 – 31 December 2009

FAHCSIA and DBCDE come from Canberra, and the ACMA come from Melbourne for the face-to-face meetings, which are held in Sydney.