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& CONSUMER COMMISSION

ACCC Communications Market Report 2018-19

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Australian Competition and Consumer Commission
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Glossary

3G / 4G / 5G	third/fourth/fifth generation mobile communications
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACL	Australian Consumer Law
ACMA	Australian Communications and Media Authority
ADSL	asymmetric digital subscriber line
AGVC	aggregating virtual circuit
BROC	binding rule of conduct
CAN	customer access network
CCA	Competition and Consumer Act 2010
CVC	connectivity virtual circuit
DSL	digital subscriber line
DSLAM	digital subscriber line access multiplexer
DTCS	domestic transmission capacity service
ESA	exchange service area
FAD	final access determination
FOAS	fixed originating access service
FTAS	fixed terminating access service
FTTB	fibre to the basement
FTTC	fibre to the curb
FTTN	fibre to the node
FTTP	fibre to the premises
GB	gigabyte
HFC	hybrid fibre coaxial
iiNet	iiNet Limited
LBAS	local bitstream access service
LCS	local carriage service
LSS	line sharing service
MBA	Measuring Broadband Australia
Mbps	megabits per second
MNO	mobile network operator
MTAS	mobile terminating access service

MTM	multi-technology mix
MVNO	mobile virtual network operator
NBN	national broadband network
NBN Co	National Broadband Network Co Limited (also referred to as nbn)
Optus	Singtel Optus Pty Limited
OTT	over the top
POI	points of interconnection
RKR	record keeping rule
RSP	retail service provider
SAU	special access undertaking
SBAS	superfast broadband access service
SIO	service in operation
SSU	structural separation undertaking
SMS	short messaging service
TEM	Telstra Economic Model
Telstra	Telstra Corporation Limited
TIO	Telecommunications Industry Ombudsman
TPG Group	TPG Telecom Limited
ULLS	unconditioned local loop service
VHA	Vodafone Hutchison Australia Pty Limited
Vocus Group	Vocus Communications Limited
VoIP	voice over internet protocol
WLR	wholesale line rental

Competition and price changes in telecommunications services in Australia 2018-19



Fixed broadband

▼ **1.5%**

Annual price decrease

▼ **2.3%**

Five year average annual price decrease*

57%

Proportion of all plans with unlimited data (up from 40% in 2017-18 and 6% in 2014-15)



Mobile phone services

▼ **6.6%**

Annual price decrease

▼ **7.5%**

Five year average annual price decrease*

▲ **65%**

Annual increase in data allowance



Mobile broadband

▼ **16.4%**

Annual price decrease

▼ **9.6%**

Five year average annual price decrease*

▲ **118%**

Annual increase in data allowance

* compound average 2014-15 to 2018-19



Annual growth in data downloads

▲ **47%**

Proportion of total download



Key industry developments



NBN activations
increased

4m ► 5.5m

With over **10.5m** premises in
ready for service areas



Telstra legacy copper
network declined

6m ► 4.8m



Launch
of 5G



Mobile voice call
minutes declined from

67bn ► 64bn

Key ACCC projects



Measuring
Broadband Australia



Investigations
and enforcement



NBN issues:
wholesale service
standards and
pricing inquiries



Completing actions
from the
communications
market study

Types of Internet Access Platforms

DSL, including asymmetric digital subscriber line (ADSL), uses the copper access network to provide an internet service. DSL operates at higher frequencies than voice services, and therefore is a form of broadband which operates independently of and simultaneously with the provision of traditional voice services over the same copper pair.

ADSL2+ is a DSL technology commonly used in the current network to provide high data rates over copper pair telephone lines up to about 4 km in length. It is typically installed in telephone exchanges or alternatively in nodes closer to the end customers. The downlink data rate is usually significantly greater than the uplink data rate.

Very high bit rate Digital Subscriber Line 2 (VDSL2) is a DSL technology used to provide high data rates over copper pair telephone lines of up to about 1 km in length. It is typically used in fibre to the node (FTTN) or fibre to the basement (FTTB) deployments. It can also include vectoring to help remove the impact of crosstalk from one copper line to others. It is able to provide symmetric data services.

Hybrid fibre coaxial (HFC) cable is a combination of optical fibre and coaxial cable, which can be used to provide high data rate broadband services, in addition to pay TV and voice services.

Fibre refers to optical fibre which can be used to provide high data rate broadband services by transmitting information as light pulses.

Wi-Fi is a technology for wireless local area networking.

Wireless broadband services are offered through both mobile and fixed wireless retail services:

- Mobile wireless data services have evolved from mobile phone technology, which uses various portions of the radio frequency spectrum. Mobile network technologies allow users to both move between geographic areas or cells and roam between different mobile networks. Users can access mobile wireless broadband networks using third generation (3G), fourth generation (4G) and now fifth generation (5G) voice handsets (phones) or non-voice service equipment such as tablets, USB modems or datacards (mobile broadband).
- Fixed wireless networks use similar technology to that used in mobile wireless networks. Significantly higher data rates and/or longer transmission distances can be attained from these networks by using fixed directional antenna only (that is, mobility is not supported by these networks).

Satellite broadband uses satellites to relay data signals sent and received via a satellite dish by isolated end users to and from a ground station connected to a broadband network.

1. Executive Summary

During 2018–19 the investment in the rollout of the National Broadband Network (NBN) reached a peak as the network passed over 10.5 million premises. Over the coming year, the goal of providing access to next generation broadband for all Australians will be reached with the completion of the NBN build and migration of consumers from Telstra Corporation Limited's (Telstra) legacy network to the NBN. In the mobile market, ongoing operator investment supplemented by funding under the Mobile Blackspots Program is helping to improve and expand coverage in regional and remote Australia.¹ Initial investments in fifth generation (5G) technology have also commenced, with deployment likely to accelerate in 2020.

With the upcoming completion of the NBN, focus is switching from build and migration issues to the services it provides to the community. The ACCC is concerned that not all consumers are benefitting equally from investment in communications infrastructure, and there is a risk that some consumers may be made worse off. Some consumers may live in areas with inadequate infrastructure, others may be forced to pay more for a service without getting more value or taking up a service that does not meet their needs. In particular, we have observed a reduction in the number of entry level plans, which is requiring consumers to pay for higher speeds or download allowances they may not value. There are also consumers who require fixed voice services, which are rarely available as standalone plans and do not offer the same competitive rates as mobile phone plans.

These issues have implications for consumers and the continued development of communications markets. Continued investment in these services is also important for the economy more broadly given that these services are an essential input into many economic and social services.

We will continue to look principally to competition to ensure that continued investment occurs and delivers benefits to consumers. However, there is likely to be a need for targeted regulation particularly as the NBN currently faces limited infrastructure-based competition.

Ongoing developments across the sector for 2018–19, including the challenges already noted are outlined below.

Key consumer-driven trends in communications markets are becoming entrenched

Many consumers are getting more for their money

Average real prices² fell in 2018–19 across all fixed and mobile services. The average consumer renewing their mobile phone plan would have paid 6.6 per cent less, in real terms for a given level of quality, compared with 2017–18. Those consumers renewing their fixed broadband plan, NBN or non-NBN, would have seen a reduction of 1.5 per cent.

Taking a longer term view, mobile phone services continue to experience greater declines in prices than fixed broadband services. Mobile phone service prices have fallen by approximately 27 per cent since 2015–16, compared with an approximate 9 per cent decline for fixed broadband services.

Overall, in the past four years, there have been real price declines (for a given level of quality) across all categories (fixed and mobile services).

These real price declines reflect the trend of service providers offering greater inclusions at the same, or higher prices. By its nature this quantitative analysis infers that consumers are getting or perceiving greater value from this trend.

¹ <https://www.communications.gov.au/what-we-do/phone/mobile-services-and-coverage/mobile-black-spot-program>.

² Adjusted for non-price characteristics, consumer spending patterns, and inflation.

However some consumers are paying more to access a broadband service

Consumers of fixed broadband services who do not value faster speeds and higher download allowances are being offered fewer choices as many cheaper entry level products are being withdrawn from the market and replaced with higher priced plans with more inclusions. Where previously these consumers had a choice to pay extra for higher speeds or larger download quotas, the market is restricting that choice and requiring them to pay more for access. For these consumers the real price declines described above may not be reflective of their experiences when making purchasing decisions.

For entry level fixed broadband services, we have concerns that NBN wholesale pricing is negatively impacting the availability of affordable NBN services, particularly at the 12/1 Megabit per second (Mbps) speed tier which was intended to be the ADSL equivalent. As a result, a significant cohort of NBN consumers are being asked to pay more for fixed broadband access which may come with large or unlimited data allowances and high speeds they may not value highly.

Data consumption continues to grow rapidly across all markets but fixed line dominates

The ACCC's [Internet Activity Report June 2019](#) shows a continuation of key usage trends including that mobile phone handsets dominate access to the internet, with approximately 28 million services. Of fixed broadband retail connections, NBN services now represent almost one-third at 4.9 million, well ahead of legacy ADSL at 1.9 million.

The total volume of data downloaded by Australians grew by approximately 47 per cent³ compared to the same period last year (figure 2.43). Notwithstanding the dominance of mobile internet connections, fixed broadband (largely NBN) services accounted for 88 per cent⁴ of all data downloaded in Australia.⁵ Research from the Australian Communications and Media Authority (ACMA) found that the proportion of Australians who were 'mobile only' for internet declined from 23 per cent in 2014 to 16 per cent in 2019.⁶ Groups with the strongest preference for fixed internet include families with children and those on higher incomes. This would suggest that consumers will prefer a fixed broadband service as consumption of data intensive applications increases.

Despite a long period of strong growth, forecasts project continuing growth in data consumption over the next few years. Cisco Systems Inc. (Cisco) forecasts global internet protocol (IP) traffic to increase three-fold over the next five years with busy hours traffic growing more rapidly than at other times of the day. Applications that will drive this growth in traffic include virtual and augmented reality, gaming and video content. While traffic over mobile networks is forecast to grow twice as fast, fixed networks are still predicted to account for over 80 per cent of global traffic in 2022.⁷

These forecasts illustrate the continuing opportunities and challenges for fixed and mobile service providers, as well as NBN Co as the principal network owner. Demand for data intensive applications that require high broadband speeds support demand for communications services but also require network upgrades and remediation of infrastructure to accommodate demand, particularly during evening peak periods.

Mobile phone plans are also accommodating consumers' growing consumption of content

In the mobiles market, plans with unlimited calls and SMS are now the norm with price competition focused on data inclusions. Included international calls and SMS as well as international roaming remain

3 Fixed broadband and mobile services for the three month period (April, May, June). Source: ACCC Internet Activity RKR data June 2019 and ABS Internet Activity Survey (8153.0) data June 2018.

4 For the three month period (April, May, and June) ended 30 June 2019. Source: ACCC Internet Activity RKR data.

5 Previously, information on internet activity data was collected by the Australian Bureau of Statistics (ABS) under the now discontinued [Internet Activity Survey \(IAS\)](#).

6 ACMA, Mobile-only Australia: living without a fixed line at home, viewed 11 November 2019 at <https://www.acma.gov.au/publications/2019-10/report/mobile-only-australia-living-without-fixed-line-home>.

7 Cisco Virtual Networking Index: Forecast and Trends, 2017-2022 White Paper viewed 22 October 2019 at <https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-741490.html>.

features generally reserved for mid and higher priced plans offered by mobile network operators (MNOs). MNOs own and operate mobile network infrastructure and sell retail services to consumers.

Mobile Virtual Network Operators (MVNOs) (who sell retail mobile services using wholesale services from MNOs) appear to be continuing to compete with each other on more generous download allowances for prepaid plans, as well as targeting particular consumer segments such as consumers seeking low cost international calls or simple to understand plans. While MVNOs play an important role in the retail mobile market, offering more choice for consumers, the ACCC considers the MVNOs continue to provide limited competitive constraint on the MNOs given the nature of their offerings and inherent reliance on the MNOs for wholesale services.

While data inclusions on mobile phone plans continue to increase, we have yet to see any affordable, truly unlimited plans. However, many MNOs are offering plans with no additional data charges for exceeding the advertised cap, instead speeds are throttled, typically at 1.5 Mbps until the next billing month. This allows consumers to continue to use applications such as music streaming, web browsing and standard definition (SD) video for viewing on their mobile handset device. However content and video may be slower to load and high definition video streaming would likely default to SD quality.

Other trends in retail competition include unmetered data streaming of specific content services, access to sport streaming services and international roaming deals. These plan features are predominantly offered by MNOs.

Other developments in mobile competition include the phasing out of handset subsidies, with the cost of devices separated from plans and re-payable over different timeframes. This may reflect that consumers are keeping their devices longer and taking their devices with them as they move between plans and carriers. There is also a move away from lock-in contracts, with more month-to-month offerings from the MNOs and MVNOs, which allow consumers to take advantage of new offers more frequently as they are not locked into 12 month, or longer, contracts.

Consumers increasingly prefer using OTT applications for communicating

Consumers' communications preferences are changing. Call volumes continue to show a strong preference for mobile calling over fixed line telephones. However, for the first time, mobile voice minutes reported by carriers have also shown a significant decline, by about 3 billion minutes over the year, despite the prevalence of unlimited calls on mobile plans. This indicates an increasing preference for over the top (OTT) communications services (e.g. WhatsApp, iMessage and Facebook Messenger), either voice or messaged based, over traditional voice services.

Recent research from the ACMA reports that 51 per cent of Australian adults were mobile-only for voice calls as at June 2019, up from 27 per cent in 2014.⁸ This is driven by the younger cohort, with 79 per cent of 25 to 34 year-olds relying on mobiles for all of their voice calls.⁹

NBN market shares are beginning to change as migration reaches deeper into cities

Telstra maintains its dominance across fixed line and mobile services, however its share of the market is being challenged as some consumers switch to new entrants on the NBN and in the mobile market. Recent quarterly data indicates that as the NBN rollout has shifted to metropolitan areas, Telstra's competitors are capturing an increasing share of new NBN customers, pushing Telstra's share of newly migrated services below 50 per cent.

When structural reform of the fixed line sector is complete, following the rollout of the NBN, the competitive landscape in regional Australia, where Telstra's competitors hold just 45 per cent of the wholesale market may begin to mirror metropolitan areas where Telstra's competitors account for 60 per cent of wholesale market share. Over recent years we have observed that competition from

⁸ Mobile-only voice households do not have a fixed line telephone connected.

⁹ ACMA, *Mobile-only Australia: living without a fixed line at home*, viewed 24 October 2019 at <https://www.acma.gov.au/publications/2019-10/report/mobile-only-australia-living-without-fixed-line-home>.

challenger brands has ensured that Telstra's customers, including those in regional areas, are able to benefit from the increasing value being offered in communications markets as a whole.

More recently, in line with the trends noted above, we have seen Telstra phase out some lower priced plans while other plans have been readjusted so they provide additional features but at around \$10 per month more.

The transition to a new industry structure requires a change in focus to NBN Co as the key service provider

As NBN Co completes its build, attention is now turning to the quality of the access services it provides

NBN deployment and activations increased significantly during the year with over 10.5 million premises passed and 5.5 million activations by 30 June 2019.¹⁰ As the NBN approaches full displacement of Telstra's legacy copper network within its fixed line footprint, focus is shifting to ensuring that the anticipated benefits for competition and consumers are fully realised.

The requirement for NBN Co to operate as a wholesale-only access provider addresses many of the long-standing competition issues that arose from Telstra's vertical integration. Telstra's vertical integration gave it incentives to discriminate against retail rivals seeking to access its network to limit competition.

However, limited network-based competition means NBN Co still operates with little competitive constraint. During the year we have identified a number of concerns with NBN Co's conduct and services. These relate to:

- NBN Co's wholesale service standards providing insufficient incentives for it to support good consumer outcomes on matters such as appointments, connections, faults and service speeds
- NBN Co's pricing changes at the wholesale level affecting the availability and affordability of entry level retail plans
- end-users on some lines being unable to achieve speeds offered on high speed plans
- NBN Co discriminating between retail service providers (RSPs) for the supply of upgraded NBN infrastructure to business customers.

We have implemented a number of work programs and initiatives to find solutions to these issues during the year.

NBN wholesale service standards

We have continued the NBN wholesale service standards inquiry to determine whether wholesale service standards on the NBN are appropriate, and to consider whether regulation is necessary to improve consumer experiences.¹¹ While wholesale service standards are set out in commercial agreements between NBN Co and RSPs, they can contribute to connection delays, missed appointments, unresolved faults, and other poor consumer outcomes.

In September 2018 we accepted an enforceable undertaking from NBN Co to improve rebate commitments regarding late connection or fault rectification and missed appointments (payable by NBN Co to RSPs). NBN Co also committed to improved reporting of key performance metrics to RSPs. While this was an important first step towards improving NBN Co's service standards, further examination of broader concerns has continued – including on the long term service standard framework and treatment of service speed and performance issues.

10 NBN Co, *Rollout information*, viewed 2 December 2019 at https://www.nbnco.com.au/content/dam/nbnco2/2019/documents/weekly-progress-report/Public_Progress_Data%20-%20211119.pdf.

11 ACCC, *NBN Wholesale service standards inquiry*, available at <https://www.accc.gov.au/regulated-infrastructure/communications/national-broadband-network-nbn/nbn-wholesale-service-standards-inquiry>.

In October 2019 we issued a draft decision to impose stronger regulated terms and more substantial rebates, including for services where speeds are impacted by technical limitations. Our inquiry is being undertaken concurrently with NBN Co's negotiations with RSPs on the next version of its wholesale contract. These negotiations have been occurring over an extended period, and it appears that NBN Co has also been making concessions to RSPs during this process. Any additional regulatory terms made by the ACCC will become benchmark terms for those negotiations.

NBN pricing

In October 2019 we commenced an inquiry into NBN wholesale pricing in response to rising concerns about the availability and affordability of basic NBN products.¹² Most consumers have no choice but to migrate from their legacy service to the NBN, but many are finding it increasingly difficult to find a comparable entry level NBN service at a similar price to their legacy ADSL service. This issue has arisen following changes to NBN Co's wholesale pricing in late 2018 which has made it uneconomic for RSPs to provide low priced products.

NBN Co proposed new commercial offers in September 2019 to provide for a smoother transition from legacy services to the NBN. In November 2019 NBN Co announced further changes to its product construct including that from May 2020 it would allow RSPs to pool their CVC requirements for bundled products nationally for the purposes of determining whether an additional payment is required for CVC overage. While NBN Co has undertaken and made a number of changes as part of its pricing review, the ACCC is continuing its inquiry into whether regulatory intervention is necessary to safeguard the transition from legacy services to the NBN now and into the future.

NBN Co has set itself ambitious revenue targets to recoup the significant cost of building its network, and the payments to Telstra and Optus for migrating their customers to the NBN from their legacy networks.

Pricing for NBN services at this stage of the rollout is efficient where it maximises demand while ensuring NBN Co has sufficient funds to complete the rollout and network augmentation activities until it becomes cash flow positive (anticipated in 2023). We would be concerned if NBN Co's revenue goals undermined the key policy intent of the NBN: to provide affordable, high speed broadband to all Australians.

Performance issues

NBN deployment has significantly improved access to high speed broadband services, and changes to NBN pricing during 2017 and 2018 prompted many consumers to shift to higher speed (50 Mbps and above) plans (table 2.2).

However, not all consumers have been able to access these increased speeds. Congestion on some fixed wireless services remains an ongoing issue for consumers in regional Australia.

Additionally, a significant subset of NBN fixed broadband consumers who may desire higher speed NBN services are impeded from accessing these speeds as their access lines are impacted by technical limitations, such as long copper lengths and in-home wiring issues. This is predominantly the result of the use of the fibre-to-the-node (FTTN) access technology for a significant part of the NBN footprint and a mode of deployment that did not include assurance up to the network boundary.

In-home wiring issues on FTTN services can impact service speeds in two ways:

- Multiple telephone sockets in the premise can cause reflections of the signal which degrade the speed.
- A faulty joint in the NBN access cable can cause electrical interference in the in-house wiring to travel along the access cable to the faulty joint and be reflected back to the modem, degrading the data rate.

¹² ACCC, *Inquiry into NBN access pricing*, available at <https://www.accc.gov.au/regulated-infrastructure/communications/national-broadband-network-nbn/inquiry-into-nbn-access-pricing>.

Both issues require a coordinated response by the consumer's RSP and NBN Co. The first issue can be remediated by a technician visiting the home, whereas the faulty joint would need to be remediated by a technician repairing the NBN access network.

The existence and scale of this issue has been highlighted in the quarterly reports of our Measuring Broadband Australia program (MBA), as almost one in four FTTN connections on 50 Mbps and 100 Mbps plans never reach close to maximum plan speeds.

We encourage NBN Co and RSPs to work together to remedy the underlying issues impacting speeds on the fixed wireless and fixed networks. In this regard, we note that NBN Co has developed a diagnostic tool to detect premises that may be impacted by poor in-home wiring. While there are often relatively simple remediation solutions, as in-home wiring issues may occur both within and beyond NBN Co's access network boundary, it is important that RSPs work with NBN Co to remediate poor in-home wiring.

Investigation into breach of non-discrimination obligations

NBN Co is subject to statutory non-discrimination obligations, which operate as an important competitive safeguard to ensure that it does not discriminate between RSPs. Discriminatory conduct can distort the competitive process by preventing RSPs competing solely on their merits and ultimately limit consumer choice.

Following an extensive investigation, in October 2019 we issued NBN Co with a formal warning for discriminating between RSPs for the supply of upgraded NBN infrastructure to business customers. We also accepted a court enforceable undertaking from NBN Co, which includes commitments by NBN Co to implement measures to ensure the conduct is not repeated and that going forward all RSPs can compete on an equal footing.

As NBN Co's activities in the enterprise market expand, we are continuing to examine any potential for this to distort competition, particularly in areas already well served by multiple network operators.

Efforts to address NBN retail level issues are having positive impacts in the market

While a number of initiatives are underway to address issues at the wholesale level, we have taken coordinated action at the retail level to support positive consumer outcomes on the NBN. This has contributed to the following outcomes:

- widespread industry adoption of advertising practices that provide consumers with valuable information (in line with the ACCC's updated broadband speeds claims guidance)
- removal of specific types of harmful marketing so that consumers can trust claims as to whether a plan supports an online application or their usage requirements
- entrenching market incentives to provide better internet speeds as well as address the causes of drop outs and other technical issues that impact consumers
- reported minutes of connectivity virtual circuit (CVC) congestion (which is when many online applications become unworkable or run at very low quality) remained relatively low on average.

Looking forward, the impending NBN rollout completion brings risks and opportunities

In the latter half of 2020 NBN Co will transition towards a business-as-usual mode of operation as it winds down the nationwide network rollout. This brings specific risks of locking in poor market or consumer outcomes chiefly for premises that are hard to connect or have performance issues, which mainly concerns FTTN premises. These risks include:

- Hard to connect premises facing disconnections of legacy services before an NBN service is available. This arises from an opportunity to end coexistence¹³ at an increasing number of FTTN nodes and boost FTTN speeds, which is only possible where all ADSL premises connected to the node are NBN serviceable and so can be migrated to the NBN.
- A continued lack of engagement from RSPs which may impede remediation of underperforming services, with NBN Co needing an alternative strategy to secure the cooperation of RSPs in identifying and assisting impacted consumers.
- NBN Co and RSPs intensifying efforts to migrate consumers from their legacy services to the NBN, to the detriment of alternative networks available (for example, representing to these consumers that migration to the NBN is their only option for broadband services).

Alongside these risks, the completion of the rollout will provide NBN Co with the opportunity and resources to direct its focus towards new products and services, including network upgrades. This focus will benefit consumers but will also require appropriate regulatory and policy oversight to promote positive competition and consumer outcomes.

Alternative fixed and wireless networks may provide competition to the NBN

A number of upcoming changes may facilitate increased efficient network-based competition to the NBN and exert pressure on NBN Co to upgrade both service and technical aspects of its wholesale products. The deployment of 5G mobile technology and new government policy to facilitate network investments by competing carriers may drive this competition over coming years.

The changed structure in fixed markets means that Australian MNOs have increased supply-side incentives to invest in more advanced networks to provide a range of new services. Not only will enhanced 4G and 5G networks provide MNOs with the capability to compete with the NBN at some service levels, but also over time, 5G technology will be essential for enabling the connectivity of billions of devices. With this in mind, robust infrastructure competition is essential to providing the communications services that Australian consumers and businesses will demand.

While ACMA research discussed earlier indicates a decline in Australians substituting fixed broadband with mobile services, the improved speed and greater data allowances likely offered by 5G mobile services may reverse this trend. As the capabilities offered by 5G and NBN services converge, MNOs may market their services as substitutes to NBN services, and we see no impediment in them doing so in a manner that complies with Australian Consumer Law (ACL).

5G will drive significant changes in mobile markets

Telstra and Optus have begun deploying 5G mobile network infrastructure in select areas of Australia. While this coverage is currently limited, it represents the likely next significant point of differentiation between the MNOs. Initially, 5G networks will leverage existing 4G networks before becoming standalone. The benefits of 5G for consumers could include faster speeds, lower latency, and support for a range of new services associated with the Internet of Things (IoT). As discussed above, there is also the potential for mobile services to provide a competitive constraint against NBN services depending on how these services are offered and priced.

¹³ Coexistence refers to the period where data rates on FTTN, FTTB and FTTC services are impacted by the need to manage interference in legacy ADSL services.

All the MNOs are continuing to invest and expand their networks in preparation for wider 5G deployment. This includes investing in spectrum suitable for 5G, which was first auctioned in December 2018, and continuing to expand network coverage, including co-investing with government in regional mobile blackspot areas. However, there are a number of challenges and uncertainty persisting in these early days of network rollout that may impact MNOs' appetite for the sustained large scale investment demanded by 5G.

Regulators and other policy agencies will need to ensure the appropriate frameworks are in place to promote efficient and ongoing investment in these networks to support the successful delivery of 5G mobile services to consumers and business.

A further market development during the period was the announcement of a proposed merger between Vodafone Hutchison Australia Pty Ltd (VHA) and TPG Telecom Limited (TPG Group) in August 2018. This followed TPG Group's earlier decision to launch its own mobile network in 2017. Following an informal merger review, the ACCC announced in May 2019 that it would oppose the merger due to concerns about a substantial lessening of competition in the retail mobiles market. The ACCC's decision was subsequently appealed by VHA and TPG Group in the Federal Court and a judgment is expected in February 2020.

The ACCC considered the proposed merger would be likely to substantially lessen competition in the supply of mobile services because the proposed merger would preclude TPG Group entering as the fourth mobile network operator in Australia. The ACCC considered that outside of TPG Group's entry into mobile services, there is unlikely to be a new MNO entrant with the scale and scope to effectively constrain the existing MNOs in the foreseeable future. TPG Group was anticipated to be a significant competitor in the mobiles market, which is historically a concentrated market due to the high barriers to entry.

We have acted on our commitments to further examine a number of matters identified in our market study

In 2016, we commenced a wide ranging market study into the communications sector. We aimed to deepen our understanding of developments in the sector to ensure we are well placed to address instances of market failure and promote competition into the future.¹⁴ We released a final report in April 2018 that found the current regulatory framework remains fit for purpose, but identified 28 recommendations and actions for the ACCC and others to pursue to promote further positive outcomes. The market study had a particular focus on new and emerging services and ensuring that market and regulatory conditions were favourable for these services to grow competitively.

Following the conclusion of the market study, we have completed examinations of three key issues identified in the market study: internet interconnection, communications comparator tools and the emerging e-SIMs technology. We engaged with key stakeholders to assess what, if any, further action was necessary to resolve any market failure. A summary of the actions undertaken by the ACCC is contained in Chapter 4.

¹⁴ ACCC, *Communications sector market study*, available at <https://www.accc.gov.au/focus-areas/market-studies/communications-sector-market-study>.

2. Competition indicators

2.1 Wholesale market indicators

NBN rollout and migration to NBN services

During 2018–19 NBN rollout and migration continued at a robust pace, with particularly strong growth in fibre-based access technologies. The total number of premises in ready for service areas increased to 10.5 million, a 30 per cent increase over the year. The total number of premises activated increased 37 per cent to 5.5 million as at 30 June 2019, up from 4 million the previous year. The largest proportion of the increase in activations was for NBN's fibre technologies, with a 39 per cent increase over the year (table 2.1).

Table 2.1: NBN rollout—Premises in ready for service areas and activations

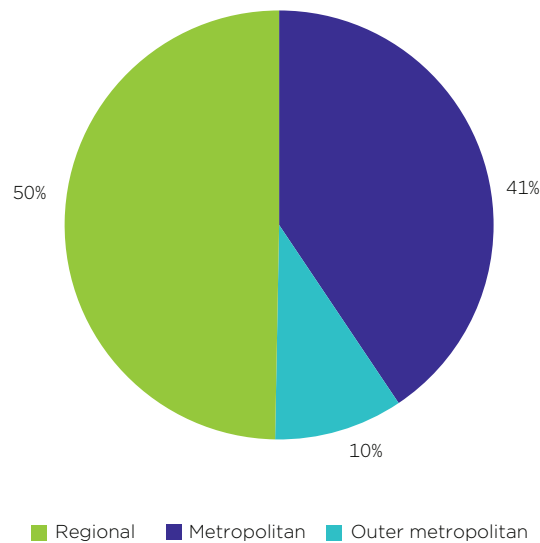
Service type	Description	30 June 2016	30 June 2017	30 June 2018	30 June 2019
Fibre	Premises ready to connect	2 062 991	4 777 672	7 084 074	8 851 811
	Premises activated	942 356	2 183 524	3 705 459	5 151 924
Wireless	Premises ready to connect	420 524	517 543	609 913	659 300
	Premises activated	117 514	184 681	240 084	284 683
Satellite	Premises ready to connect	409 959	418 135	430 449	443 154
	Premises activated	38 764	74 928	90 327	95 480
Total	Premises not yet ready to connect	57 787	268 114	1 086 870	590 438
	Premises in ready for service areas	2 893 474	5 713 350	8 124 436	10 544 899
	Premises activated (all service types)	1 098 634	2 443 133	4 035 870	5 532 087

Source: NBN Co National Broadband Network Rollout Information.

Geographically, regional areas accounted for the largest proportion (50 per cent) of all NBN wholesale services in 2018–19 followed by metropolitan areas (41 per cent) (figure 2.1).¹⁵ This reflects that NBN Co has prioritised deployment in regional areas, however the proportion of services in metropolitan areas is gaining ground, increasing from 35 per cent in 2017–18.

¹⁵ An NBN point of interconnection is designated 'metropolitan', 'outer metropolitan' or 'regional' as per the table provided in Listed Points of Interconnection—NBN Corporation' published by the ACCC on 5 July 2013, available at <https://www.accc.gov.au/system/files/NBN%20points%20of%20interconnection.pdf>.

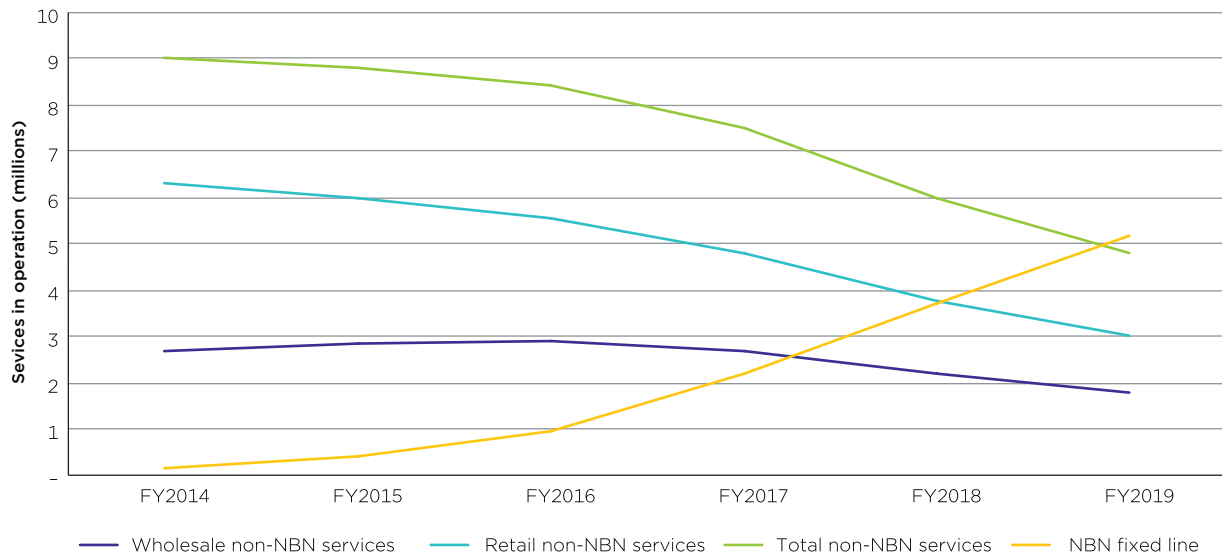
Figure 2.1: Comparison of NBN wholesale broadband services by geography



Source: NBN Wholesale Market Indicators Report, 30 June 2019.

Figure 2.2 shows the changing composition of broadband services in response to the progressive customer migration to the NBN from legacy services. The number of fixed line NBN services increased from 3.7 million to 5.2 million, almost 40 per cent, between 30 June 2018 and 30 June 2019. This corresponds with a reduction in total legacy services (provided over Telstra's copper network) of almost 20 per cent, from 6 million to 4.8 million services. The trend is likely to continue until the NBN rollout is complete and the only legacy services that remain are in areas outside the NBN fixed line network (where copper services remain available).

Figure 2.2: Active NBN and non-NBN fixed line services from 2013-14 to 2018-19



Source: Telstra Economic Model (public), NBN Co National Broadband Network Rollout Information.

Wholesale market shares on the NBN

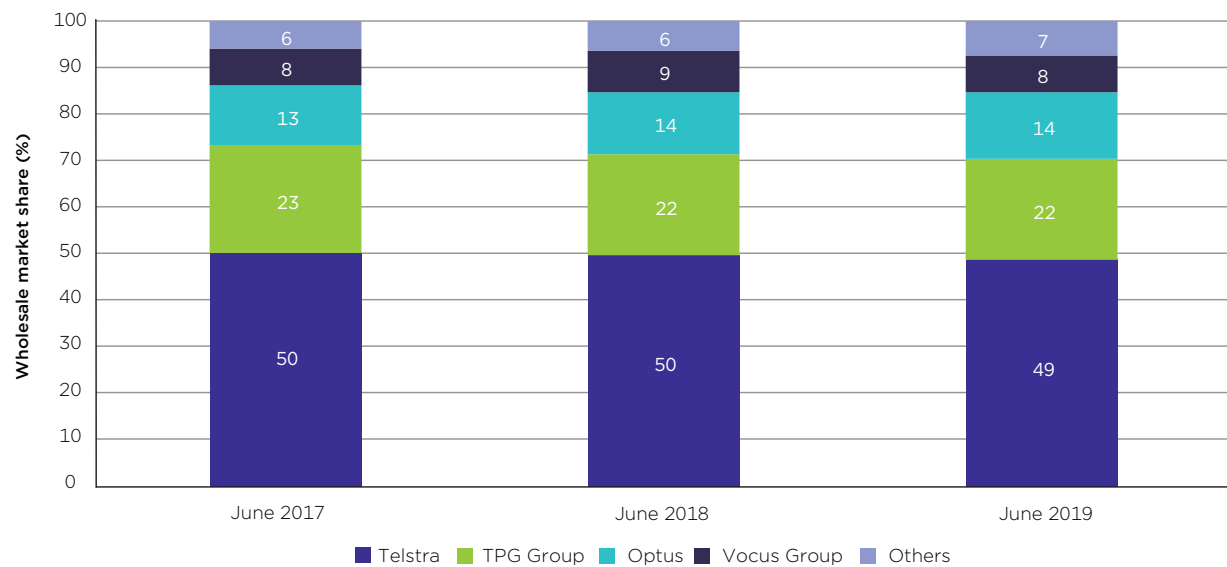
NBN Co provides the ACCC with data on the number of services on the network. This includes services on fibre to the premises (FTTP), fibre to the basement (FTTB), FTTN, fibre to the curb (FTTC), hybrid fibre coaxial (HFC), satellite and fixed wireless access technologies. This information is published on the ACCC's website in the [NBN Wholesale Market Indicators Report](#).

We use this information to provide a picture of wholesale market share changes on the NBN including by access technology and geography. It also allows us to monitor the wholesale service profiles of access seekers on the NBN such as speed tiers and capacity acquired. The analysis in this chapter relates to the state of the market as at 30 June 2019.

National market shares (all access technologies)

At a national level across all access technologies, there are four main NBN wholesale access seekers: Telstra, TPG Group, Singtel Optus Pty Ltd (Optus) and Vocus Communications Limited (Vocus Group). Figure 2.3 shows Telstra maintains the largest national market share with 49 per cent of the NBN broadband services nationwide, followed by TPG Group with 22 per cent, Optus with 14 per cent and Vocus Group at 8 per cent.

Figure 2.3: National wholesale market shares for NBN broadband services (combined) from 2016–17 to 2018–19



Source: NBN Wholesale Market Indicators Report, 30 June 2017, 30 June 2018 and 30 June 2019.

Note: Figures may not add up to 100 due to rounding.

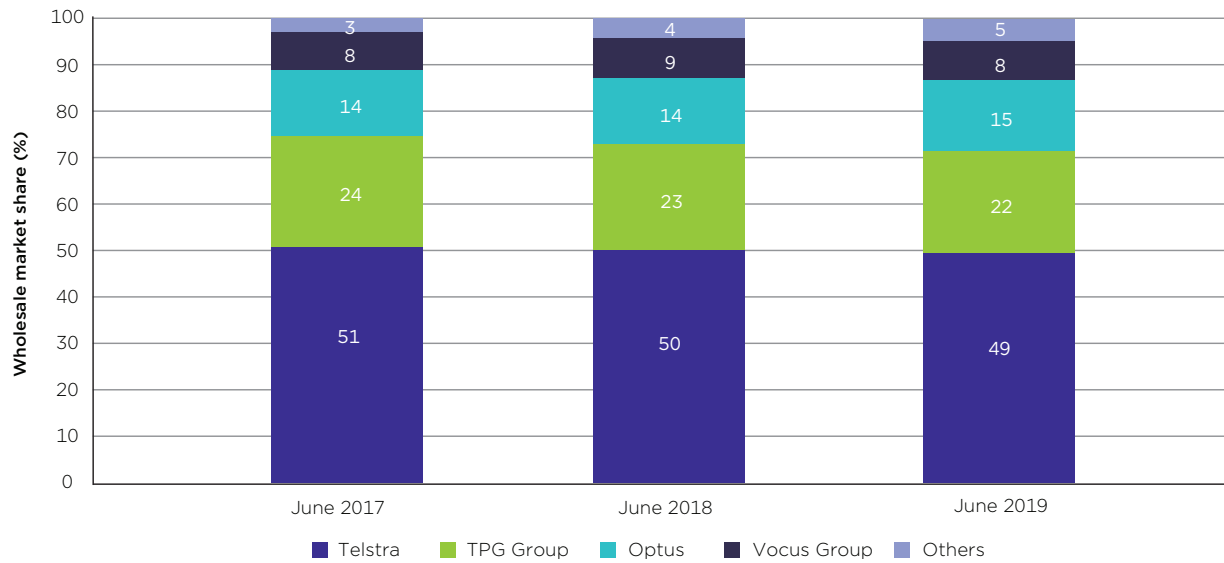
Market shares by access technology

By access technology Telstra has 49 per cent of wholesale fibre-based services,¹⁶ a reduction of 1 percentage point from the previous year (figure 2.4). TPG Group and Vocus Group also lost 1 percentage point of market share each since June 2018 while Optus gained 1 percentage point of market share over the year. At 55 per cent, Telstra has the greatest number of fixed wireless services followed by TPG Group with 14 per cent and Optus with 10 per cent (figure 2.5).¹⁷ Smaller service providers have a stronger market presence in the NBN wholesale satellite market.

¹⁶ The full list of fibre-based services include FTTB, FTTC, FTTN, FTTP and HFC.

¹⁷ ACCC, *NBN Wholesale Market Indicators Report 30 June 2019*, available at: <https://www.accc.gov.au/regulated-infrastructure/communications/national-broadband-network-nbn/nbn-wholesale-market-indicators-report/previous-reports>.

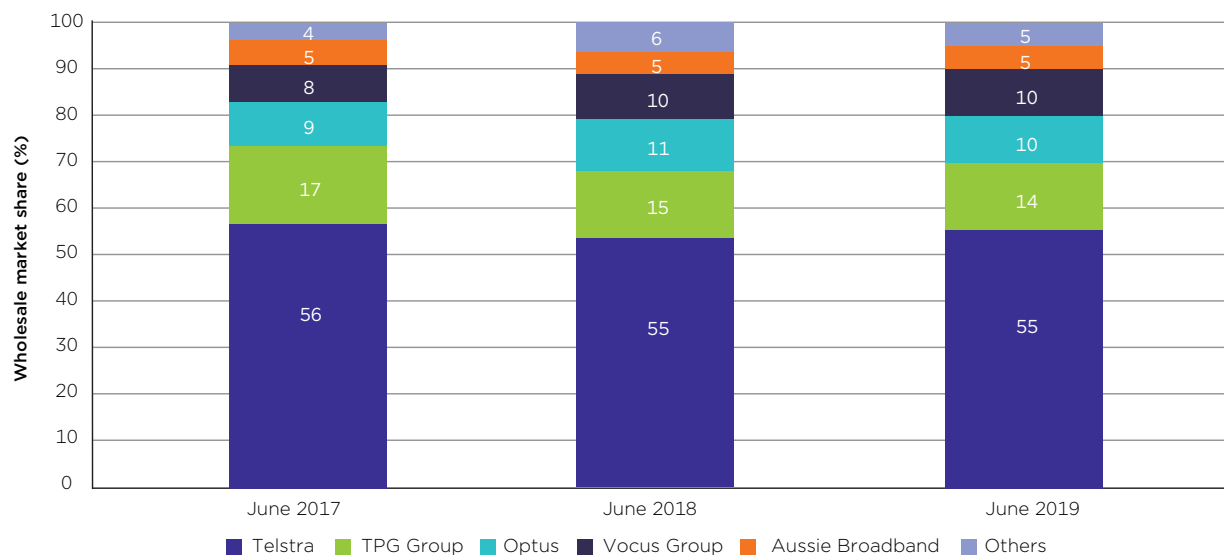
Figure 2.4: National wholesale market share of NBN fibre-based services from 2016-17 to 2018-19



Source: NBN Wholesale Market Indicators Report, 30 June 2017, 30 June 2018 and 30 June 2019.

Note: Figures may not add up to 100 due to rounding.

Figure 2.5: National wholesale market share of NBN fixed wireless services from 2016-17 to 2018-19



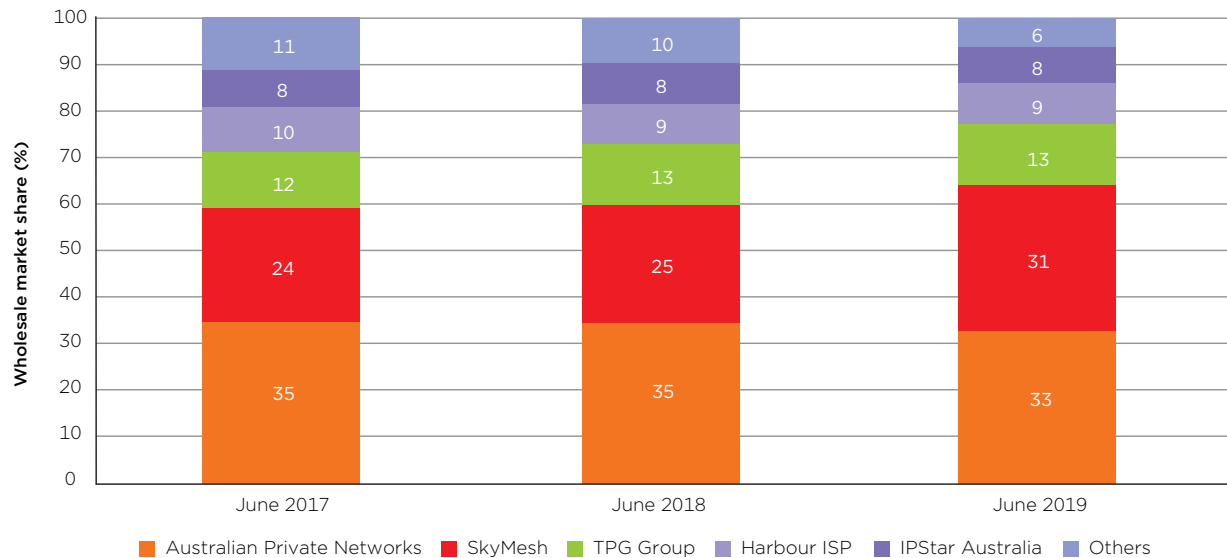
Source: NBN Wholesale Market Indicators Report, 30 June 2017, 30 June 2018 and 30 June 2019.

Note: Figures may not add up to 100 due to rounding.

As shown in figure 2.6, Australian Private Networks has the largest number of wholesale satellite broadband services at 33 per cent, while SkyMesh has grown its presence over recent years to 31 per cent, TPG Group holds 13 per cent, and Harbour ISP has 9 per cent.¹⁸

¹⁸ ibid.

Figure 2.6: National wholesale market share of NBN satellite broadband services from 2016-17 to 2018-19



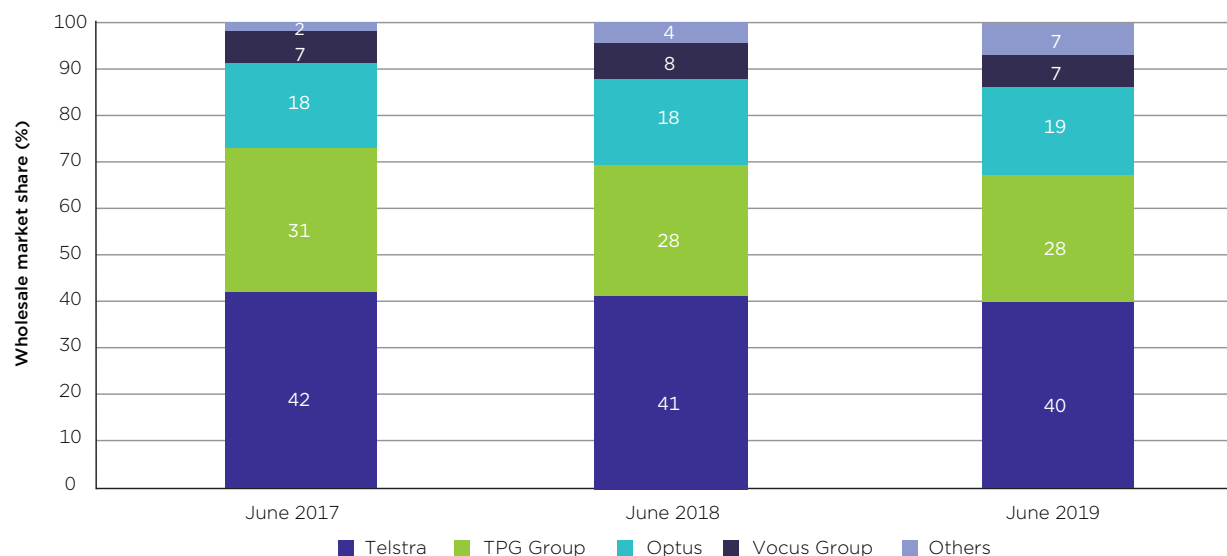
Source: NBN Wholesale Market Indicators Report, 30 June 2017, 30 June 2018 and 30 June 2019.

Note: Figures may not add up to 100 due to rounding.

Market shares by region

Figures 2.7 and 2.8 compare the wholesale market shares in metropolitan points of interconnection (POIs) and regional POIs for June 2017, June 2018 and June 2019. Telstra continues to play a dominant role in regional areas, but is less dominant in metropolitan areas. TPG Group and Optus continue to have a much larger market share in metropolitan areas compared to regional areas, whereas the Vocus Group's market share is about the same in both geographic areas.

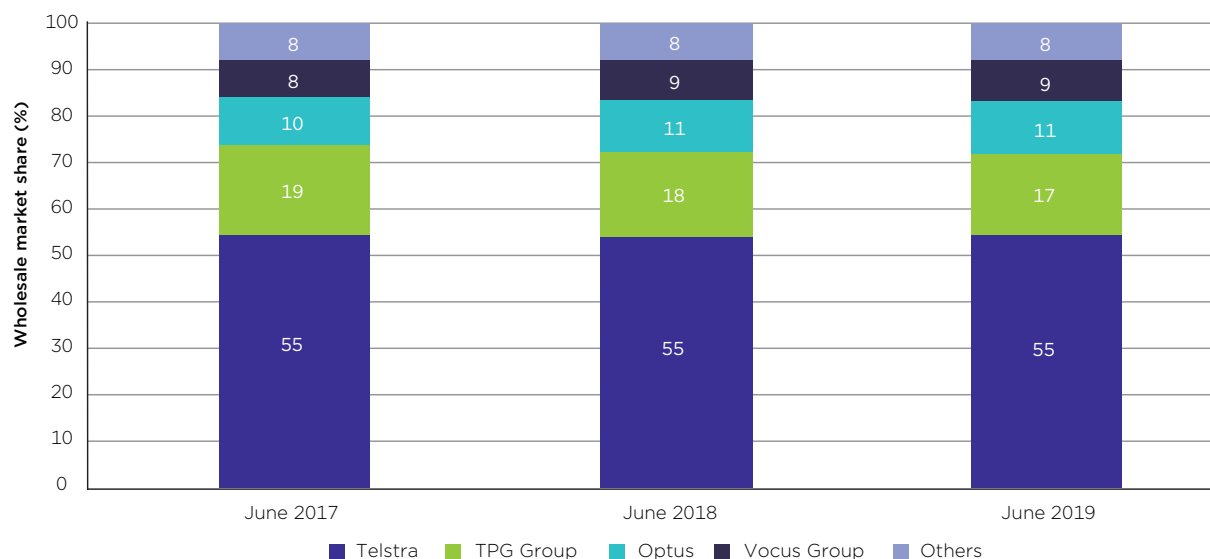
Figure 2.7: Metropolitan POI market share for NBN wholesale broadband services from 2016-17 to 2018-19



Source: NBN Wholesale Market Indicators Report, 30 June 2017, 30 June 2018 and 30 June 2019.

Note: Figures may not add up to 100 due to rounding.

Figure 2.8: Regional POI market share for NBN wholesale broadband services from 2016-17 to 2018-19



Source: NBN Wholesale Market Indicators Report, 30 June 2017, 30 June 2018 and 30 June 2019.

Note: Figures may not add up to 100 due to rounding.

Speed tier profile

NBN Co sells wholesale services in a range of speed tiers, including 12/1 Mbps, 25/5 Mbps, 25/10 Mbps, 50/20 Mbps and 100/40 Mbps.¹⁹ These speed tiers contribute to the download/upload speeds RSPs are able to offer to consumers.

Table 2.2 shows the most popular NBN access service acquired by access seekers in 2018-19 is the 50 Mbps download speed tier followed by the 25 Mbps and 12 Mbps speed tiers.²⁰ This is a notable shift from 2017 when the 50 Mbps speed accounted for only 4 per cent of services compared with 56 per cent for the 25 Mbps speed tier. The change in proportions is likely in response to changes to relative NBN Co's wholesale pricing which have made the 50 Mbps speed tier more attractive compared to lower speed tiers.

Table 2.2: Distribution of speed tiers from June 2017-19

Speed tier ('Up to' download/upload in Mbps)	Percentage of wholesale services		
	2017	2018	2019
12/1	29	28	17
25/5 and 25/10	56	27	19
50/20	4	35	55
100/40	12	10	8

Source: NBN Wholesale Market Indicators Report, 30 June 2017, 30 June 2018, 30 June 2019.

Note: Figures may not add up to 100 due to rounding.

Table 2.3 shows the percentage of services represented by access seeker in various speed tiers. The 50 Mbps speed tier now accounts for 64 per cent of Telstra's services. TPG Group and Vocus Group services are more evenly distributed across speed tiers. Optus has the highest proportion of 50 Mbps services with 73 per cent of its services on this speed tier.

¹⁹ Note that for some speed tiers on certain access technologies NBN Co specifies a range, e.g. 25-50/5-20 Mbps for the 50/20 Mbps speed tier when offered on the FTTB/C/N and Wireless networks.

²⁰ ACCC, *NBN Wholesale Market Indicators Report 30 June 2019*, available at: <https://www.accc.gov.au/regulated-infrastructure/communications/national-broadband-network-nbn/nbn-wholesale-market-indicators-report/previous-reports>.

Table 2.3: Speed tiers by access seeker (as percentage of total services)

	12 Mbps	25 Mbps	50 Mbps	100 Mbps
Telstra	15	17	64	5
TPG Group	30	21	38	11
Optus	7	10	73	10
Vocus Group	19	39	31	11
Aussie Broadband	0	30	45	25
VHA	0	11	60	29
Other	16	36	35	13

Source: NBN Wholesale Market Indicators Report, 30 June 2019.

Capacity acquisition

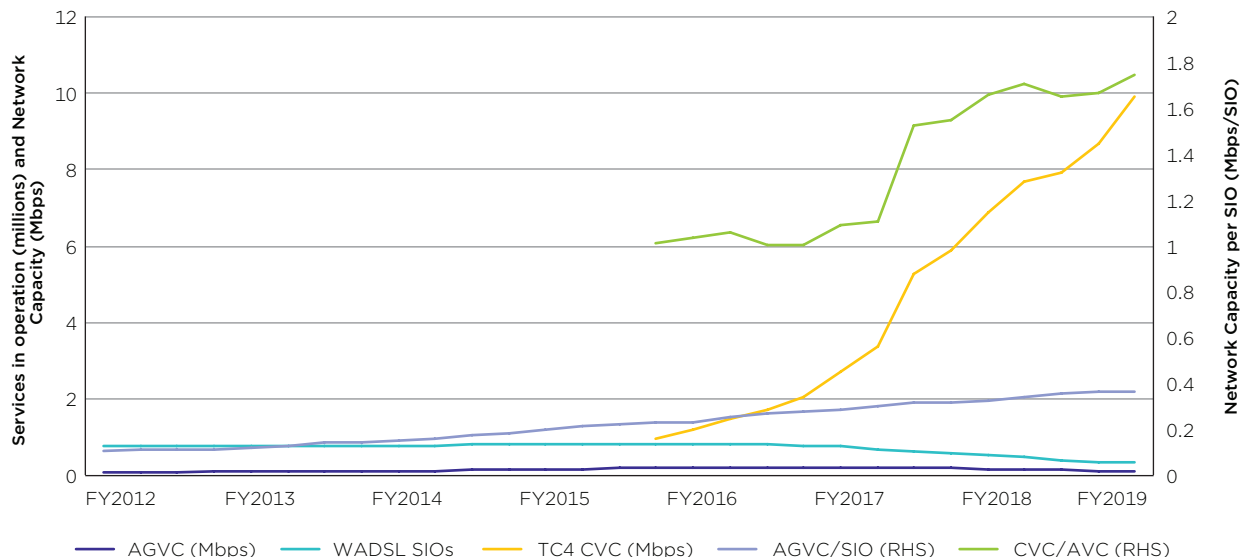
The amount of network capacity that access seekers provision can determine the throughput speeds they make available to end-users, particularly during the busy period. This has a strong impact on the quality and reliability with which end-users can access applications that require constant and high-throughput capacity such as video streaming.

As at 30 June 2019 access seekers were acquiring on average 1.75 Mbps per end-user of network capacity on the NBN. This is referred to as Connectivity Virtual Circuit (CVC) capacity. This is an increase on the 1.66 Mbps per end-user average as at 30 June 2018 (figure 2.9).

Telstra's wholesale ADSL customers on average acquired 0.36 Mbps per-end user as at 30 June 2019. This is referred to as Aggregated Virtual Circuit (AGVC) capacity. The AGVC has increased slightly since 30 June 2018 (0.32 Mbps) and since 30 June 2017 (0.30 Mbps).

Accommodating increased use of data intensive services and applications, such as increased use of video streaming, is likely to be driving growth in both CVC and AGVC on the NBN and Telstra ADSL networks respectively.

Figure 2.9: Capacity acquisition on wholesale ADSL and NBN from 2011-12 to 2018-19



Source: Telstra Economic Model (public version), NBN Co Wholesale Market Indicator Reports (various quarters).

Wholesale services on legacy networks

Prior to the deployment of the NBN, most fixed communications services were provided using Telstra's copper network. These services were provided by Telstra or other service providers acquiring wholesale services from Telstra to supply retail voice and fixed broadband services. Following the completion of the NBN, these services in NBN's fixed line footprint will be fully migrated to the NBN and Telstra's copper network will be largely decommissioned.

Wholesale DSLAM activity

In relation to the wholesale digital subscriber access line multiplexer (DSLAM) activity at Telstra exchanges, the average number of wholesale equipment-based access seekers has remained stable at an average of 3.9 per exchange service area (ESA). Access seekers deploy DSLAMs at exchanges to supply voice and broadband services over Telstra's customer access network (CAN) to consumers using access seekers' own infrastructure. The number of Telstra ESAs where access seekers have infrastructure decreased during the year from 596 to 583.²¹ These access seekers acquire the wholesale unconditioned local loop service (ULLS)²² or line sharing service (LSS)²³ to supply consumers with broadband and voice services. The number of services in operation (SIO) also declined across the range of services (voice, DSL, ULLS and LSS) which reflects the migration of end users from legacy services provided over Telstra's CAN to the NBN.

Copper-based broadband market share by ULL band

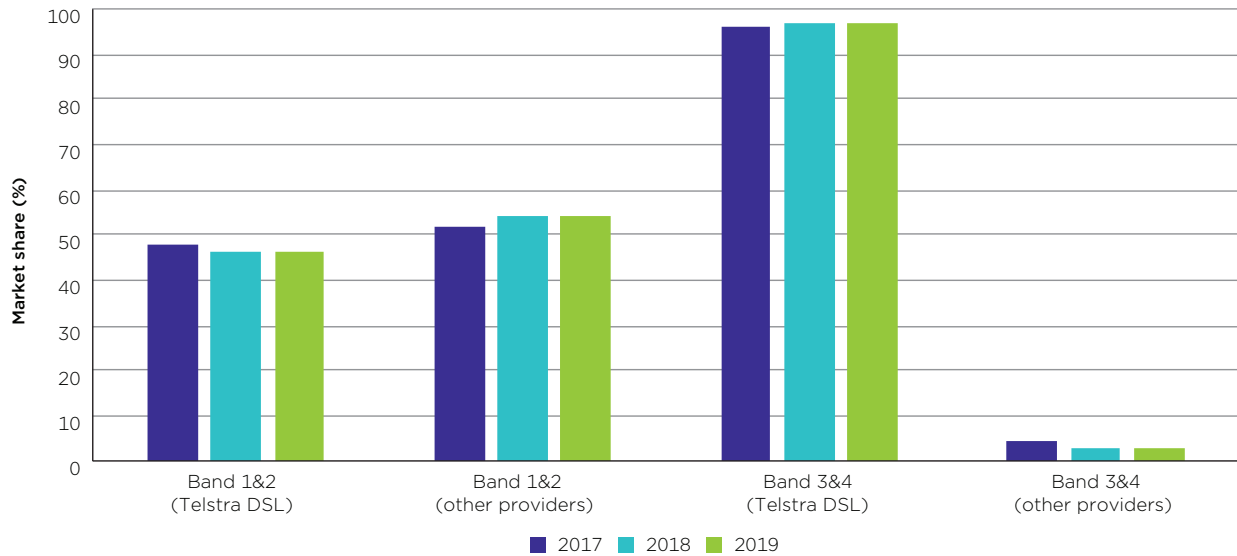
Figure 2.10 compares the market shares of Telstra and other providers for copper-based retail services split by Band 1 and 2 (which generally represent metropolitan areas) and Band 3 and 4 (which generally represent rural and regional areas). Telstra continues to retain a dominant position in providing copper-based services in Band 3 and 4. Telstra maintained a stable market share in Band 1 and 2, although there was a marginal reduction in its market share between 2017 and 2018 due to increasing competition from other providers.

21 ACCC, *Snapshot of Telstra's customer access network—June 2019*, available at <https://www.accc.gov.au/system/files/Snapshot%20of%20Telstra%27s%20customer%20access%20network%20-%20Jun%202019%20.pdf>.

22 ULLS is a declared service that allows access seekers to use the copper line connecting end users to the local telephone exchange allowing them to provide both fixed broadband and voice services using their own DSLAMs and other exchange equipment.

23 LSS is a declared service that enables access seekers to share the use of the copper line connecting end users to the local telephone exchange, allowing them to provide fixed broadband services using their own equipment.

Figure 2.10: Copper-based broadband market share by ULL band from 2016-17 to 2018-19



Source: Telstra Customer Access Network RKR data (various years).

2.2 Retail market indicators

Fixed broadband services

Fixed broadband services are broadband internet services provided over fixed networks such as Telstra's copper network, Optus and Telstra's HFC networks, the NBN and other fibre-based networks. Services provided over mobile networks are discussed below. NBN services included here are FTTN, FTTB, FTTP, FTTC, HFC and fixed wireless (that is, all services other than satellite).²⁴

The analysis of non-NBN services is limited to ADSL, HFC, non-NBN fibre and non-NBN fixed wireless, depending on the availability of statistical information.

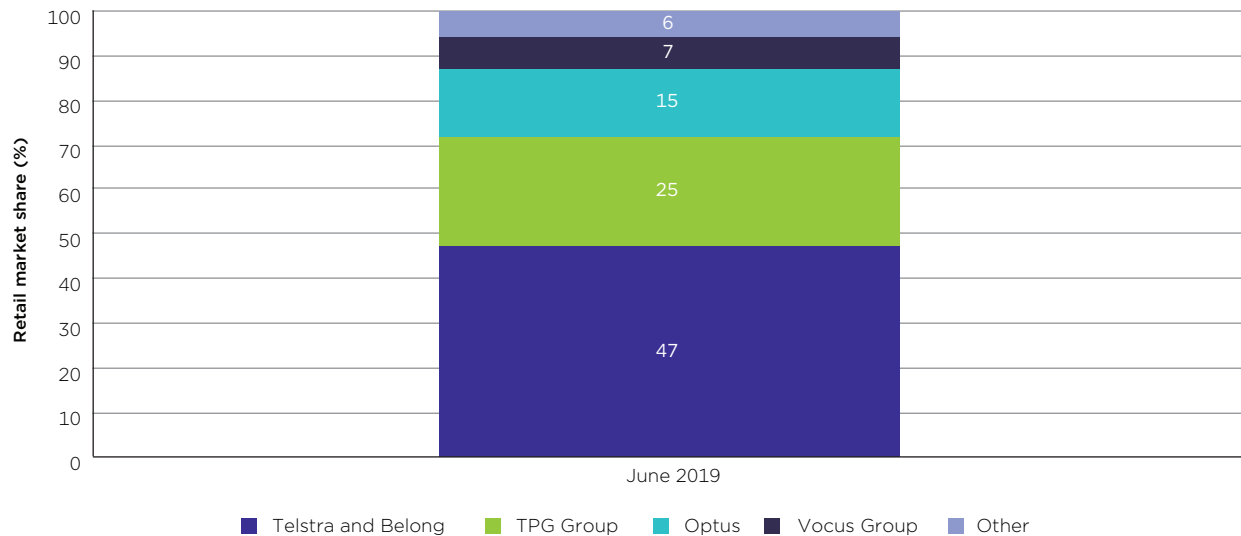
There are some limitations in the methodology we use to calculate market shares using SIO data obtained under ACCC record keeping rules (RKR). These limitations arise because the RKRs collect data from the key service providers, but not all. Additionally, the cessation of the Australian Bureau of Statistics' (ABS) Internet Activity Survey (IAS) has meant some data sets in 2018-19 cannot be compared with previous years. Notwithstanding these limitations, the market share figures are largely indicative of the key trends in fixed broadband market shares over time.

²⁴ We include NBN fixed wireless in our analysis of fixed broadband services due to the functional similarity between fixed wireless and other fixed access technologies.

Market shares for fixed broadband services

In 2018-19 Telstra represented the largest market share in the retail market for fixed broadband services, claiming 47 per cent of market share. This is followed by TPG Group (25 per cent) and Optus (15 per cent) (figure 2.11).

Figure 2.11: Retail market share for fixed broadband services in 2018-19



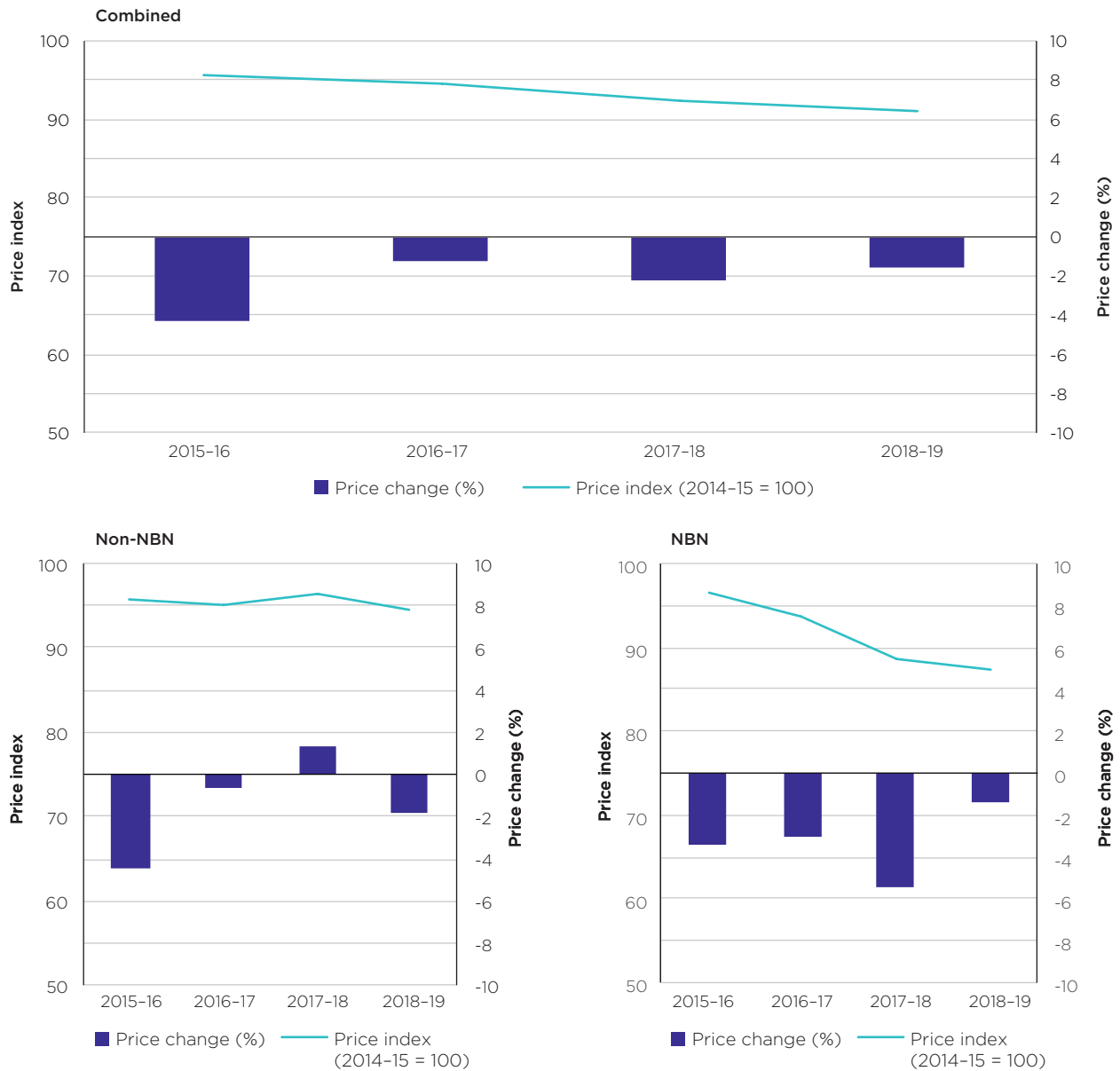
Source: ACCC Division 12 RKR data for all named carriers except for Vocus Group, whose figures are based on publicly available data.

Average price changes for fixed broadband services

The ACCC has utilised a refined version of last year's 'plan matching' approach to estimate average changes in price for fixed broadband services as set out in figure 2.12 (see appendix 5.5 for further information on refinements made since last year's publication). This approach compares the average prices of different categories of plans, thereby accounting for changes in non-price characteristics over time. The approach also adjusts for consumer spending behaviour and inflation, in order to present an accurate estimate of the price changes experienced by consumers.

The analysis shows that, when comparing similar plans, real prices for fixed broadband services fell by 1.5 per cent in 2018-19. This fall in real prices was largely due to a fall in real prices of non-NBN plans, of 1.8 per cent in 2018-19. Annual real price changes (based on the refined methodology) were estimated for 2015-16 to 2018-19, and are represented as an index in figure 2.12. It shows that there has been a downward trend in real fixed broadband prices since 2015-16, despite a small increase in average real prices of non-NBN products in 2017-18.

Figure 2.12: Changes in average prices for fixed broadband services from 2015-16 to 2018-19



	2015-16	2016-17	2017-18	2018-19
Combined				
Price change (%)	-4.3	-1.2	-2.2	-1.5
Price index (2014-15 = 100)	95.7	94.5	92.5	91.0
Non-NBN				
Price change (%)	-4.4	-0.6	1.3	-1.8
Price index (2014-15 = 100)	95.6	95.1	96.3	94.5
NBN				
Price change (%)	-3.4	-3.0	-5.5	-1.4
Price index (2014-15 = 100)	96.6	93.7	88.6	87.3

Source: ACCC estimates based on Division 12 RKR data and information from RSP websites.

Average price change methodology

Introduction

The most basic approach for creating a price index is to measure the change in prices from one year to the next in an average price of a basket of products. There is a problem with this 'basic approach', however, if rapid increases in technology are improving the quality of the products then the increases in prices should not be interpreted as price inflation because the price changes partly reflect changes to the product.

The two approaches we explored to calculate price changes in this year's Report to estimate price changes for a given level of quality (holding quality constant) motivates both the 'plan matching' approach and the 'hedonic' approach. Both approaches control for changes in quality using quantitative measures of quality (so changes in quality that cannot be quantified are not controlled for). 'Quality' in the following section refers to quantifiable features of a product or plan (such as download speed or data allowance) that are available for purchase by consumers and does not refer to a consumers actual end user experience in using that product or plan (e.g. actual data usage, quality of access technologies on the NBN, quality of mobile network).

Plan matching approach

Under the plan matching approach, plans are organised into groups with similar features (e.g. download speed, data allowance). For each group, the change in price is estimated. This is interpreted as the change in price for a **given level of quality**.

The main advantages to this approach are that it is relatively simple, transparent, reliable and easily repeatable. The main disadvantage to this approach, however, is that it requires a set of characteristics to be available for two consecutive years—meaning the newest and oldest offerings are generally excluded. For instance, the price of a new-to-market 100 gigabyte (GB) post-paid mobile plan in the 2018–19 financial year cannot be used in the calculation of the price changes for that year, if no 100 GB plan existed in 2017–18. This approach is discussed further in appendix 5.5.

Hedonic approach

Conversely, when the hedonic approach is employed, all available plans in the market are used in the estimation of price changes. The theory underpinning hedonic analysis is that differentiated products can be viewed as a bundle of characteristics, such as data allowance or download speed. This approach uses econometrics to estimate the effect of time on prices, controlling for the characteristics of the plans. Accordingly, the approach estimates 'pure' price changes, as differences in quality are for i.e. it estimates price changes for a **given level of quality**. This approach is discussed further in appendix 5.6.

Results

Overall, both approaches indicate a decrease in real prices. The price change results of the hedonic approach are generally greater in magnitude than those of the plan matching approach and can be viewed as an upper bound for price changes (table 2.4). However, it is important to remember the price changes calculated for both approaches do not reflect changes in 'sticker' or 'shelf' price, rather they show a better measure of the overall value proposition for consumers i.e. price changes for a **given level of quality**.

Notably, a consumer could see a sticker price that stayed the same or increased on the previous year, but at the same time receive an even larger increase in the quality of product they receive—this would show as a price decrease in both these models.

Table 2.4: Real price changes for the ‘hedonic’ approach²⁵ from 2015–16 to 2018–19

	2015–16	2016–17	2017–18	2018–19
Non-NBN	-6.4%	-8.5%	-8.0%	-1.7%
NBN	-17.6%	1.2%	-6.5%	-5.9%
Total fixed broadband	-10.9%	-4.0%	-7.8%	-3.3%
Post-paid mobile	-16.6%	-13.7%	-16.5%	-19.8%
Prepaid mobile	-23.1%	-8.8%	-9.4%	-25.2%
Total mobile phone services	-18.1%	-12.9%	-17.0%	-21.3%
Mobile broadband	-1.8%	-12.9%	-18.8%	-12.4%

Prepaid mobile experienced the greatest decline in prices in 2018–19 with a decline of 25 per cent under the hedonic approach (table 2.4). This result reflects a greater magnitude of decline than that experienced under the plan matching approach (7.3 per cent). Furthermore, the two approaches follow similar trends such as showing greater decreases in prices of mobile technologies than that of fixed line technologies. In 2018–19, total fixed broadband (NBN and non-NBN services) prices decreased by 3.3 and 1.5 per cent for the hedonic and plan matching approach, respectively. Conversely, total mobile (post-paid and prepaid mobile phone services) prices declined by 21.3 per cent under the hedonic approach and 6.6 per cent under the plan matching approach.

Methodology differences—quality adjustment

One of the key differences between these approaches is in the quality adjustment process. Under the plan matching approach, plans are grouped together and compared across time based on a number of non-price characteristics such as data allowance, call inclusions and contract length. It is the average price changes within these groups that are used in the calculation of real change in average prices. This ensures that from one period to the next the non-price characteristics (proxy measures of quality) are held constant when calculating average price changes. For example, if a fixed broadband plan has (among other features) no data download limit and includes unlimited national calls in 2017–18, its price will be compared to plans with similar features in 2018–19. Similar calculations are then conducted for each group of like plans before calculating the average of these price changes across all groups. Accordingly, as plans are grouped according to their characteristics, observed price changes may reflect changes in sticker prices, or changes in the value of service inclusions at a given price, or both.

In contrast, the hedonic method controls for the quality of the plans, and then estimates the effect of time on price. The hedonic approach treats each product as a combination of characteristics and features, and assigns values to each of the features (e.g. download speed, data allowance) in the product that are identified as ‘price determining’.²⁶

As a result of these changes we are no longer comparing prices of like-for-like products and price changes for a product may occur due to changes in quality and/or sticker price. Price statisticians refer to this issue as the need to price to constant quality.

²⁵ All the underlying coefficients used to calculate the price changes are statistically significant at the 5 per cent level ($p < 0.05$).

²⁶ ABS, *Information Paper the Introduction of Hedonic Price Indexes for Personal Computers*, 8 February 2005, [http://www.ausstats.abs.gov.au/ausstats/free.nsf/0/6B5EF2E6C1935D18CA256FA1007856A2/\\$File/64580_2005.pdf](http://www.ausstats.abs.gov.au/ausstats/free.nsf/0/6B5EF2E6C1935D18CA256FA1007856A2/$File/64580_2005.pdf).

While this approach is innovative, and enables us to include new-to-market plans, we continue to undertake further testing of this complex model before considering whether to present results as headline figures in future reports due to its complexity.

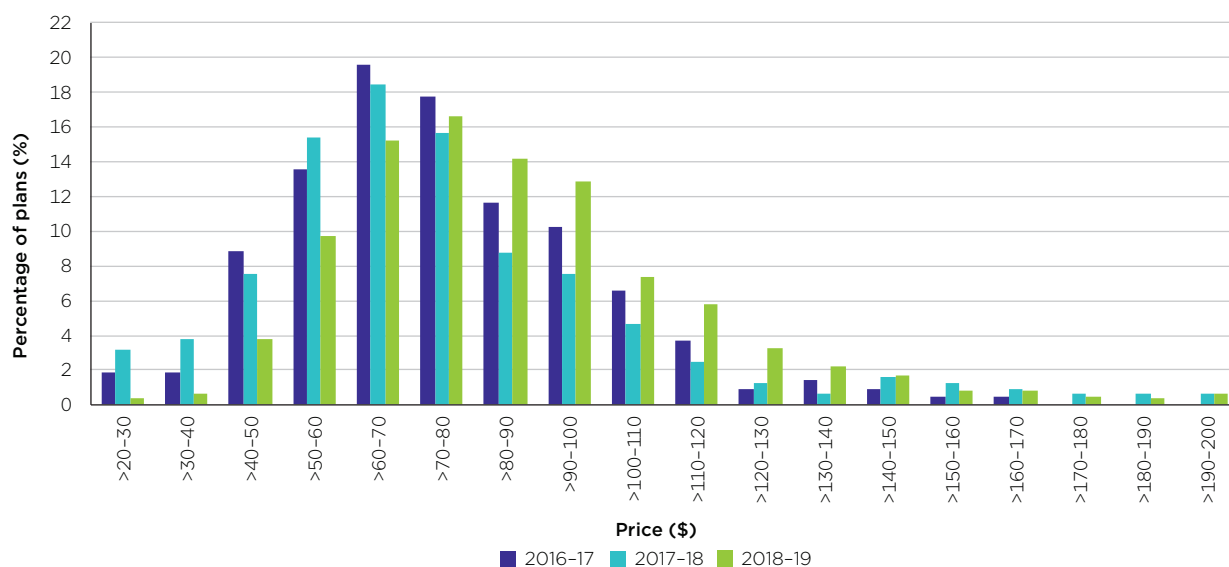
Range of fixed broadband plans available to consumers

Service providers offer plans at various price points. The number and variety of plans available varies between the price points. NBN plans are shifting to provide more ‘premium’ plan features such as faster download speeds, greater download allowances as well as bundling with entertainment services (e.g. Foxtel or Fetch TV). Conversely, the distribution of non-NBN²⁷ plans has remained fairly steady over the last three years.

For NBN plans, there has been a shift in the concentration of plans to the \$60 to \$90 price range, compared with the \$50 to \$80 range reported in 2017-18. The most popular price point in 2018-19 was the \$70 to \$80 which accounted for 17 per cent of NBN plans (figure 2.13). There is an overall increase in higher priced plans as RSPs are increasingly bundling fixed broadband services with extra features and services in response to evolving consumer preferences.

For non-NBN plans, the concentration of plans remains the same as last year, with the majority of plans being around the \$50 to \$90 price range (62 per cent this year, compared with 64 per cent in 2017-18). The most popular price point in 2018-19 has remained unchanged from 2017-18 with plans in the \$60 to \$70 range contributing to 19 per cent of all non-NBN plans (figure 2.14).

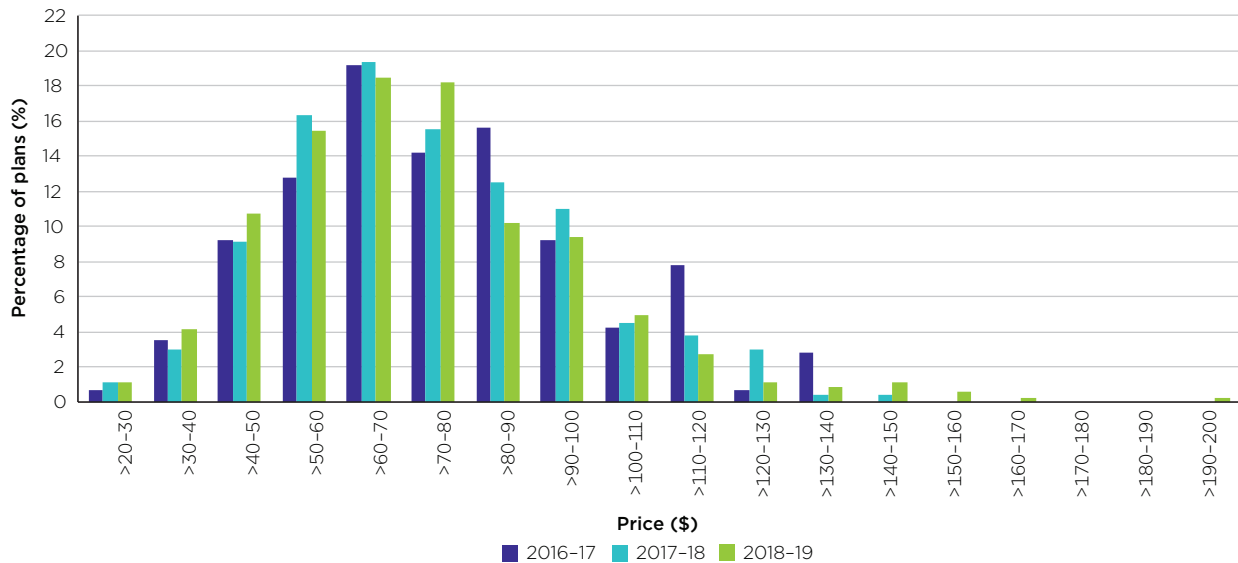
Figure 2.13: Percentage of NBN fixed broadband plans at various price points from 2016-17 to 2018-19



Source: ACCC estimates based on information from RSP websites.

²⁷ Non-NBN fixed broadband services includes ADSL HFC, fibre and fixed wireless.

Figure 2.14: Percentage of non-NBN fixed broadband plans at various price points from 2016-17 to 2018-19



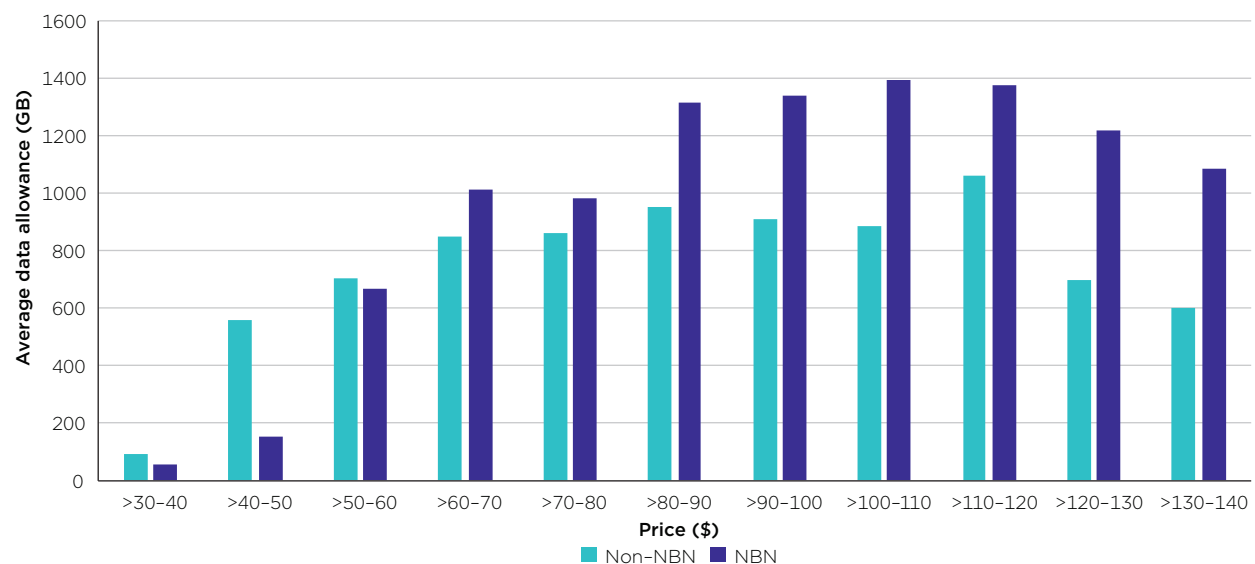
Source: ACCC estimates based on information from RSP websites.

The average data allowance for fixed broadband services

The average data allowance of non-NBN services is generally higher than the data allowance of NBN services at the lower price categories that are less than \$60 (figure 2.15). These non-NBN plans often include unlimited data, while the entry-level plans on the NBN in this price range have limited data allowances and low download speeds. However, the average data allowance for NBN services exceeds non-NBN services in all price points above \$60.

The average data allowance begins to decline at price points above \$110 (figure 2.15), likely due to some premium plans in the market trading higher data allowances for additional bundled services (e.g. Foxtel or Fetch TV).

Figure 2.15: Average data allowance at various price points for NBN and non-NBN fixed broadband services in 2018-19



Source: ACCC estimates based on information from RSP websites.

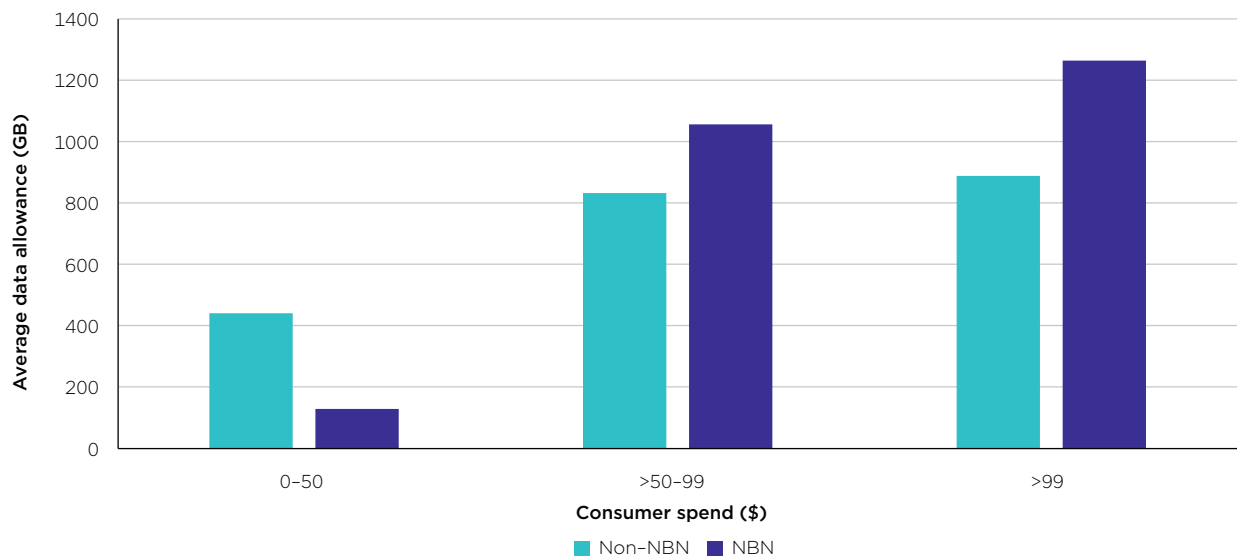
Note: Analysis assumes that broadband plans with 'unlimited' data have data allowances equivalent to 1500 GB.

Figure 2.16 shows the average data allowance categorised in terms of consumer spend in three consumer categories. 'Low' spending consumers are defined for the purposes of this analysis as those

who spend \$0 to \$50 per month, 'medium' spending consumers are defined as those who spend greater than \$50 up to \$99 per month, while 'high' spending consumers are those who spend more than \$99 per month.

Non-NBN services generally provide a greater data allowance in the lower price points (441 GB for non-NBN, compared to 132 GB for NBN). At the high end of market, spending over \$99 per month, NBN provides a higher average data allowance of 1262 GB, in comparison to 892 GB for non-NBN services (figure 2.16).

Figure 2.16: Average data allowance by consumer spend for NBN and non-NBN fixed broadband services in 2018-19



Source: ACCC estimates based on information from RSP websites.

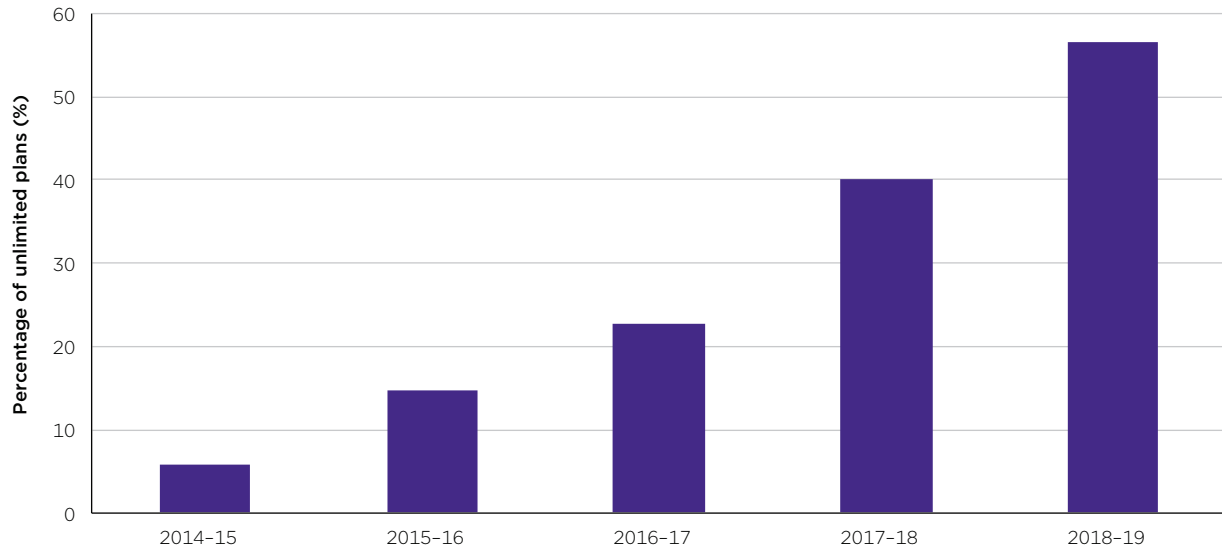
Note: Analysis assumes that broadband plans with 'unlimited' data have data allowances equivalent to 1500 GB.

Fixed broadband services with unlimited data allowances

Fixed broadband plans with unlimited data allowances have continued to increase in prevalence in recent years, increasing from 6 per cent of all available plans in 2014-15 to 57 per cent in 2018-19. In the last year there has been an increase in unlimited fixed broadband plans of 17 percentage points (up from 40 per cent in 2017-18) (figure 2.17).²⁸ This is expected given the higher download speeds capable on the NBN and increasing consumer demand for applications such as streaming services that typically result in higher data usage.

²⁸ Based on analysis of publicly available plans collected by the ACCC. There were 25 unlimited plans in 2014-15 (out of 422 plans), 234 unlimited plans in 2017-18 (out of 583 plans) and 540 unlimited plans in 2018-19 (out of 953 plans).

Figure 2.17: Percentage of fixed broadband plans with unlimited data allowances from 2014-15 to 2018-19

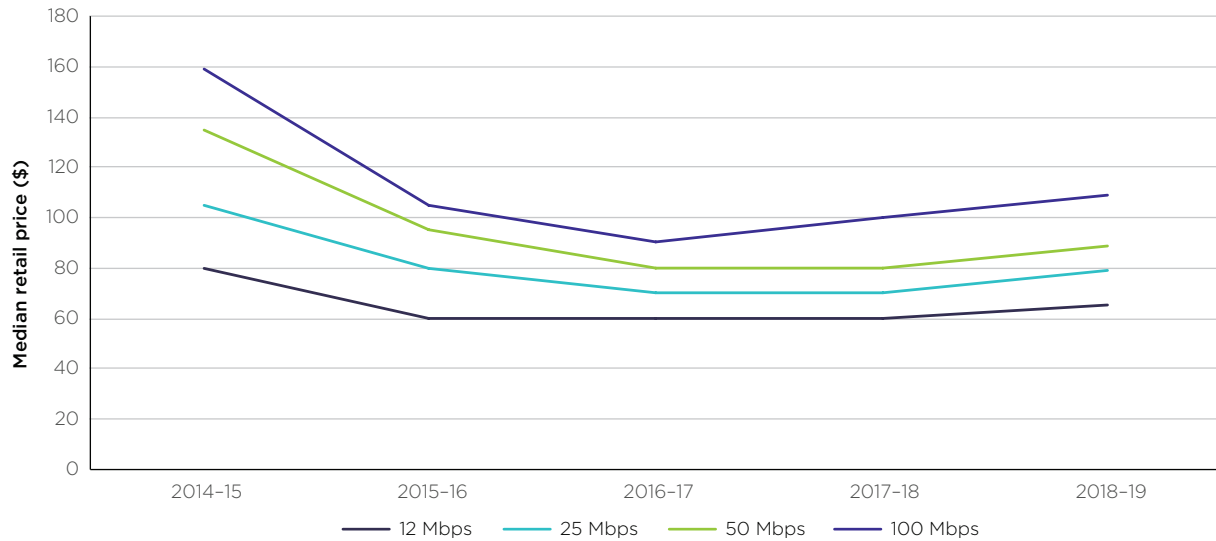


Source: ACCC estimates based on information from RSP websites.

The median retail nominal price for NBN wholesale download speed tiers

RSPs resell NBN Co wholesale services to customers in a range of download speed tiers, including 12 Mbps, 25 Mbps, 50 Mbps and 100 Mbps. Since 2014-15 the nominal median price of all four wholesale speed tiers has decreased. The 50 Mbps speed tier experienced the greatest decline in nominal median price over this period, decreasing 34 per cent from \$135 to \$89 (figure 2.18). This speed tier was also the most popular choice amongst consumers and has been since June 2018 (table 2.2). Additionally, the range in median nominal prices between the 12 Mbps speed tier and the 100 Mbps speed tier decreased to \$44 in 2018-19, down from \$79 in 2014-15, despite small increases in 100 Mbps nominal median prices over the last two years.

Figure 2.18: Median retail nominal price by NBN download speed (wholesale tiers) from 2014-15 to 2018-19



Source: ACCC estimates based on information from RSP websites.

Note: Analysis includes standalone and bundled services.

Mobile phone services

Mobile phone services include voice, SMS, and data services delivered over 3G, 4G or 5G technologies to mobile handsets. This is distinct from mobile broadband (discussed later in this chapter), which only deliver data services on the same networks.

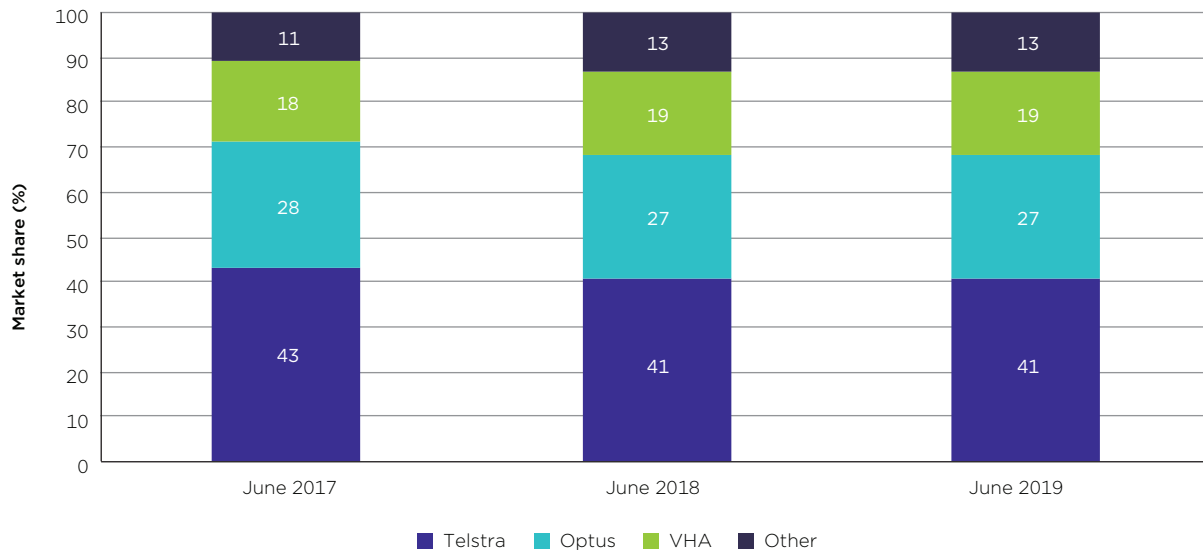
The market for mobile phone services (via handsets) continues to be the largest among telecommunications services in terms of the number of SIOs. There were approximately 28 million mobile phone services in Australia as of 30 June 2019, up from 27 million as at 30 June 2018.²⁹

Market shares for mobile phone services

The retail market continued to be dominated by the three MNOs, Telstra, Optus and VHA, each of which owns and operates its own network. The market shares of these providers have remained largely unchanged in recent years (figure 2.19). While MVNOs have grown market share in recent years, their market share appears to have stabilised in the past two years, accounting for around 13 per cent of services in both 2017-18 and 2018-19.

²⁹ Mobile handsets are hand held, mobile devices used to transmit or communicate data, images or voice over a cellular network.

Figure 2.19: Retail market share for mobile phone services from 2016-17 to 2018-19



Source: ACCC Division 12 RKR data.

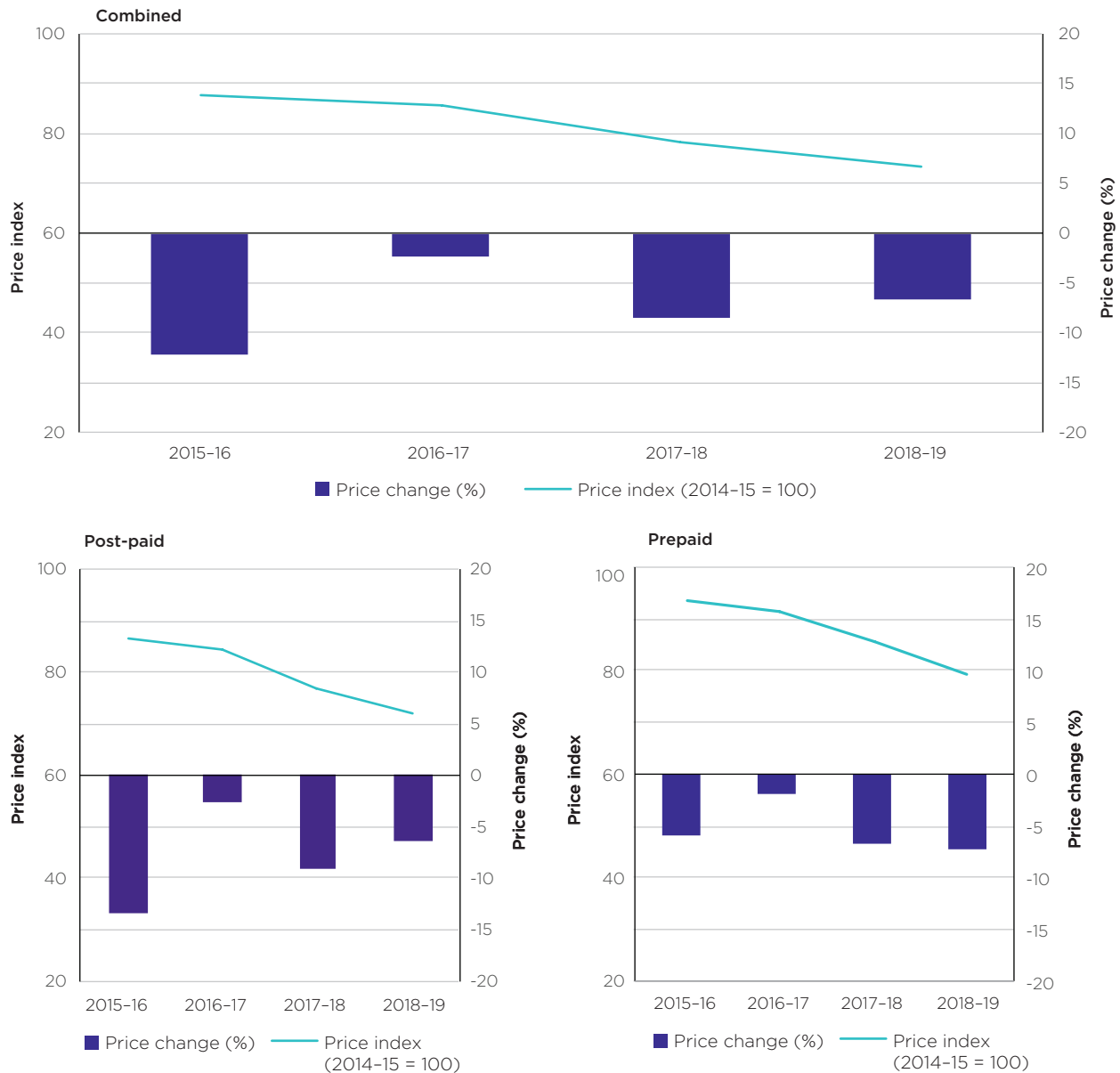
Average price changes for mobile phone services

We have estimated price changes in mobile phone services by comparing the average prices of different categories of prepaid and post-paid mobile plans.

As prepaid plans may have credit expiry ranging from one week to up to a year, the analysis of prepaid plans in this section is limited to those plans with a 28, 30 or 35 day expiry. This allows for comparable analysis to post-paid plans, which attract a monthly charge.

Prices for mobile phone services overall declined from 2017-18 to 2018-19 when comparing similar plans (figure 2.20). On average, prices fell by around 6.6 per cent over the period, in real terms. This continues an overall downward trend from 2015-16. For post-paid services, prices fell by 6.5 per cent in 2018-19, which was less than the 9 per cent price decline seen in 2017-18. Similarly, average prices also fell for prepaid services, in real terms, by 7.3 per cent in 2018-19. This is a marginally greater decline in prices than the 6.6 per cent observed in 2017-18.

Figure 2.20: Average price changes for post-paid and prepaid mobile phone services from 2015-16 to 2018-19



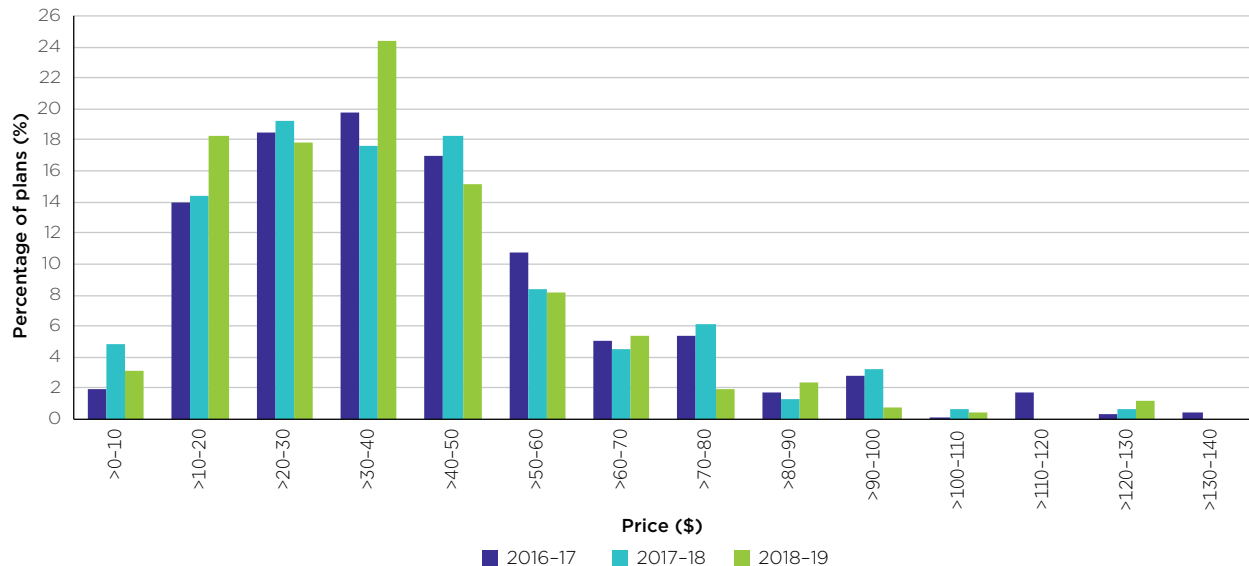
	2015-16	2016-17	2017-18	2018-19
Combined				
Price change (%)	-12.2	-2.4	-8.6	-6.6
Price index (2014-15 = 100)	87.8	85.7	78.4	73.2
Post-paid				
Price change (%)	-13.5	-2.5	-9.0	-6.5
Price index (2014-15 = 100)	86.5	84.4	76.8	71.8
Prepaid				
Price change (%)	-6.0	-2.0	-6.6	-7.3
Price index (2014-15 = 100)	94.0	92.1	86.0	79.7

Source: ACCC estimates based on Division 12 RKR data and information from RSP websites.

Range of mobile phone plans available to consumers

The price distribution of mobile phone plans has remained relatively stable in the past three years. For post-paid mobile services the highest percentage of plans are in the \$30 to \$40 range, making up 24 per cent. In general, there has been an increase in offerings in the low-mid price ranges, where the majority of plans are concentrated in the \$50 or less price points (approximately 79 per cent) (figure 2.21). The most popular price points for prepaid plans are between \$20 to \$30 and, similar to post-paid plans, are concentrated in the \$50 or less price points (87 per cent of all plans) (figure 2.22).

Figure 2.21: Percentage of post-paid mobile phone plans at various price points from 2016-17 to 2018-19



Source: ACCC estimates based on information from RSP websites.

Figure 2.22: Percentage of prepaid mobile phone plans at various price points from 2016-17 to 2018-19

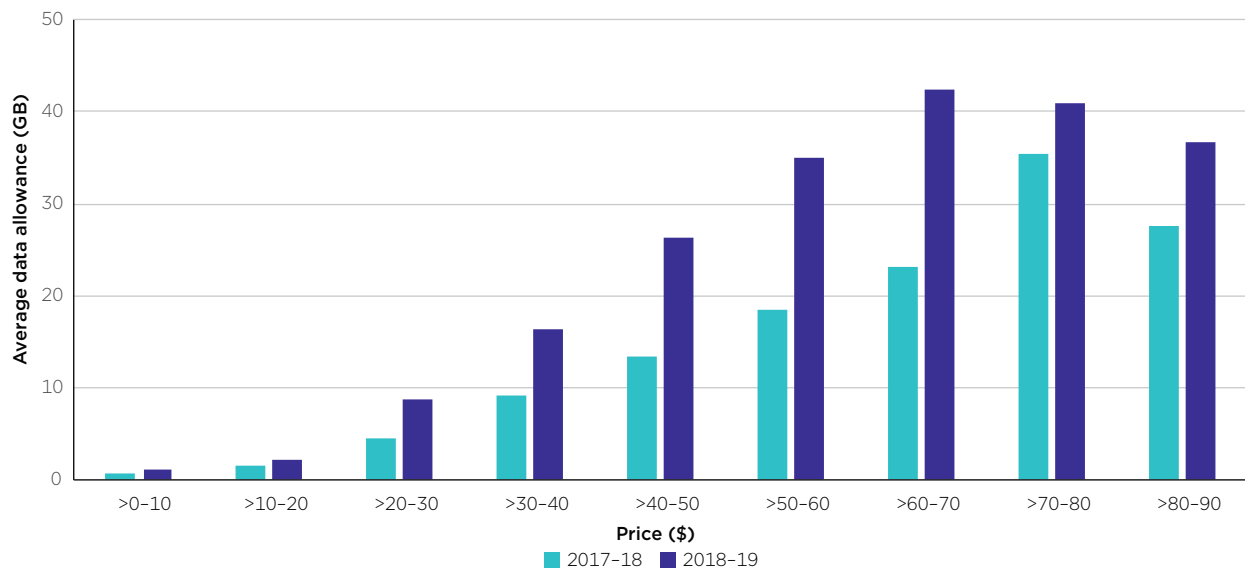


Source: ACCC estimates based on information from RSP websites.

The average data allowance for mobile phone plans

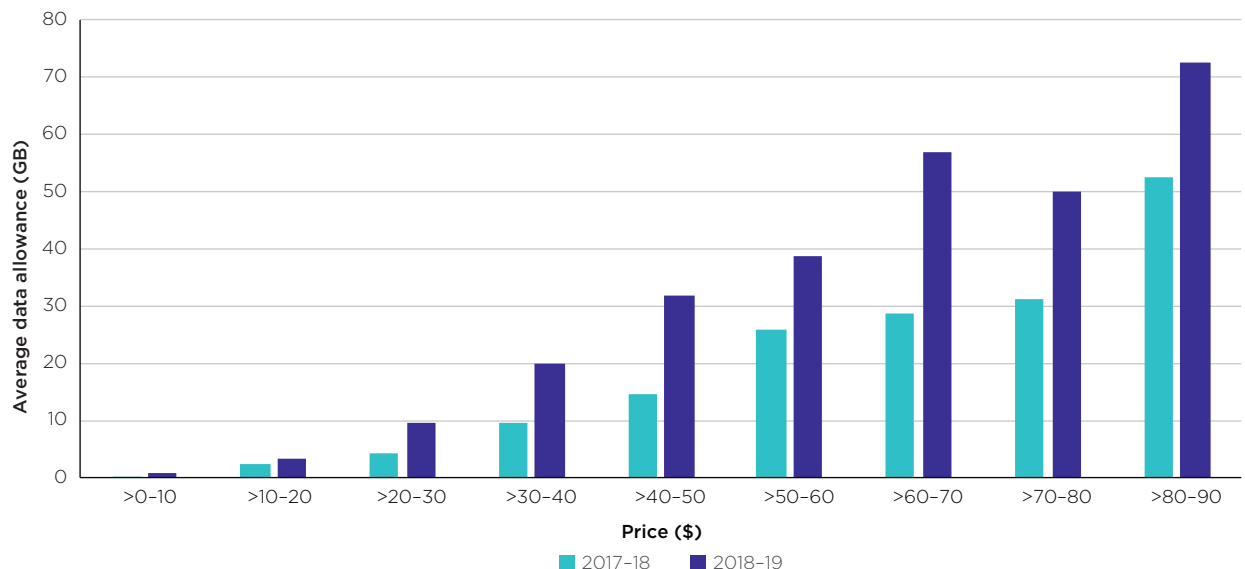
In 2018-19 average data allowances increased across all price points for both post-paid (figure 2.23) and prepaid (figure 2.24) mobile phone services in comparison to 2017-18. The largest increases in data allowance were experienced in the \$60 to \$70 price points for post-paid and prepaid. Within these price points, post-paid plans showed an increase in average data allowance from 23 GB to 43 GB over this period. While prepaid plans in the same price points experienced an increase in average data allowance from 29 GB to 57 GB.

Figure 2.23: Average data allowance at various price points for post-paid mobile phone services in 2017-18 and 2018-19



Source: ACCC estimates based on information from RSP websites.

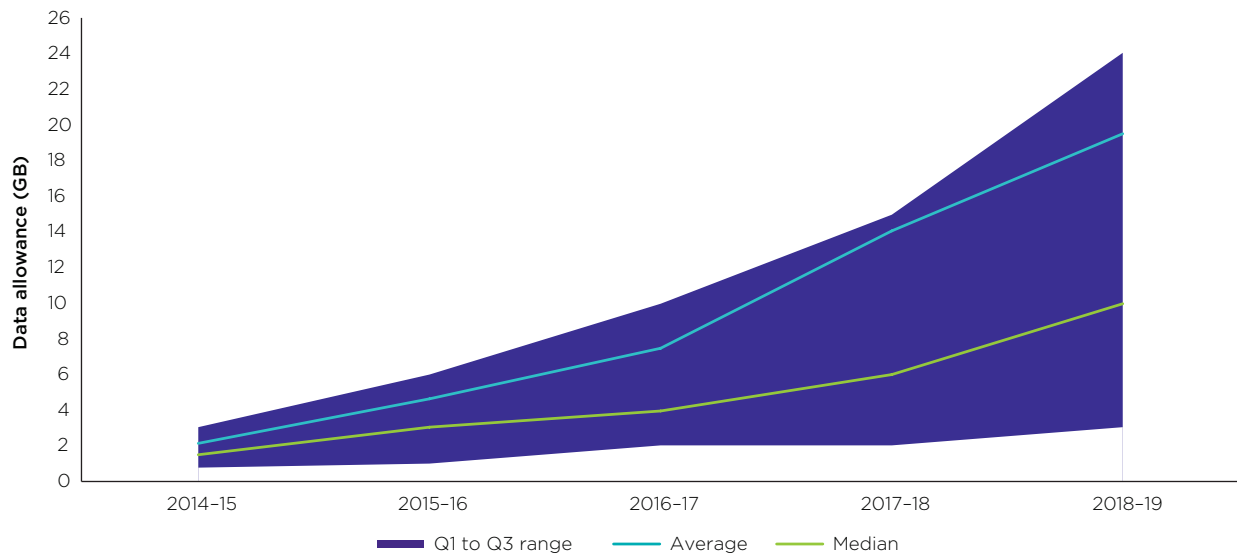
Figure 2.24: Average data allowance at various price points for prepaid mobile phone services in 2017-18 and 2018-19



Source: ACCC estimates based on information from RSP websites.

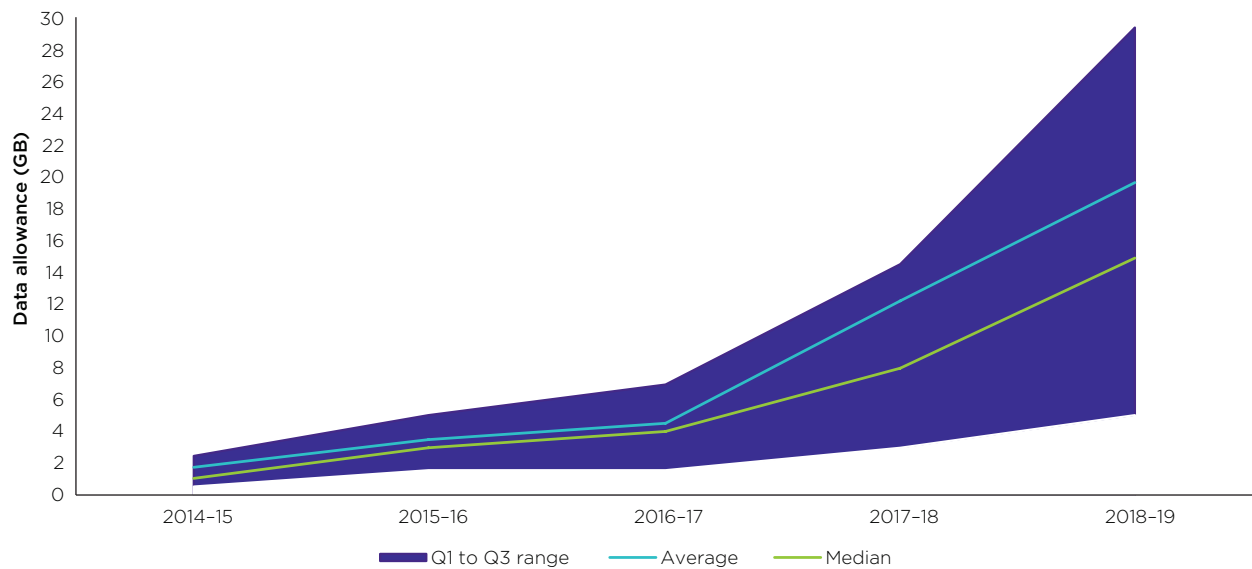
The range of data allowances available for both post-paid (figure 2.25) and prepaid plans (figure 2.26) has expanded since 2014-15. For post-paid services, the median and average data allowances were 1.5 GB and 2.1 GB respectively in 2014-15, and increased to 10 GB and 19.5 GB, respectively, in 2018-19. Prepaid services followed a similar trend, where the median and average data allowances were 1 GB and 1.7 GB in 2014-15, increasing to 15 GB and 19.7 GB, respectively, in 2018-19.

Figure 2.25: Average, median and first and third quartile range data allowance for post-paid mobile phone services from 2014-15 to 2018-19



Source: ACCC estimates based on information from RSP websites.

Figure 2.26: Average, median and first and third quartile range data allowance for prepaid mobile phone services from 2014-15 to 2018-19

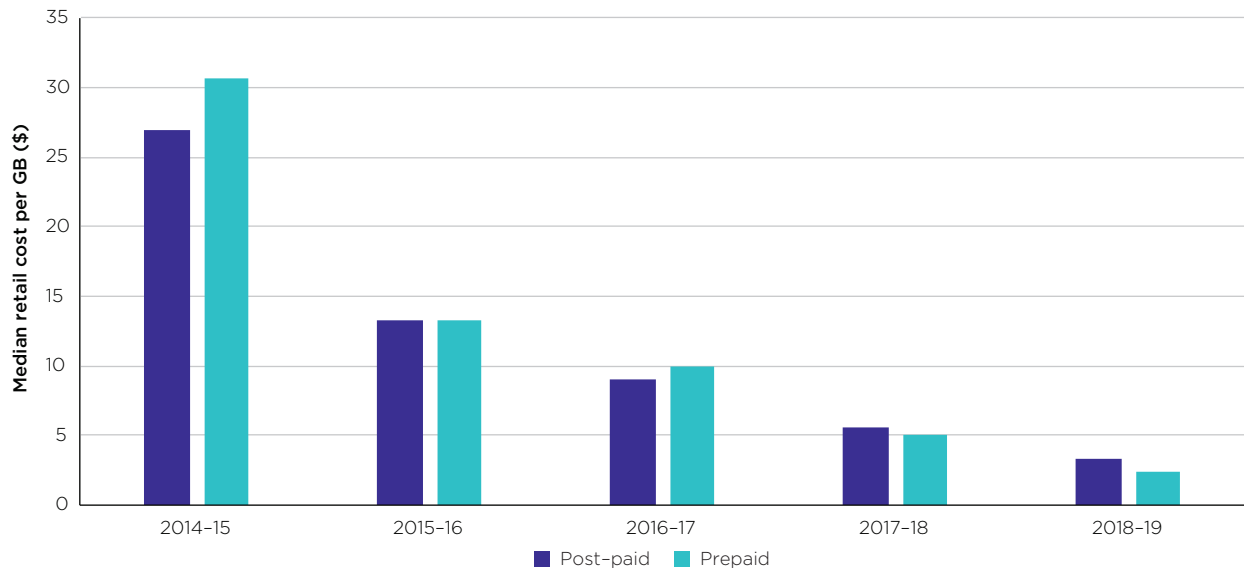


Source: ACCC estimates based on information from RSP websites.

Median retail cost per GB of data for mobile phone services

Since 2014-15 the median retail cost of data has fallen significantly for post-paid and prepaid mobile services. Based on ACCC estimates the retail cost per GB of data has decreased by 88 per cent and 92 per cent for post-paid and prepaid mobile phone services, respectively. This is reflected in median retail prices of \$3.30 and \$2.30 per GB for post-paid and prepaid mobile services, respectively, in 2018-19 (figure 2.27).

Figure 2.27: Median retail cost per GB of data for post-paid and prepaid mobile phone services from 2014-15 to 2018-19



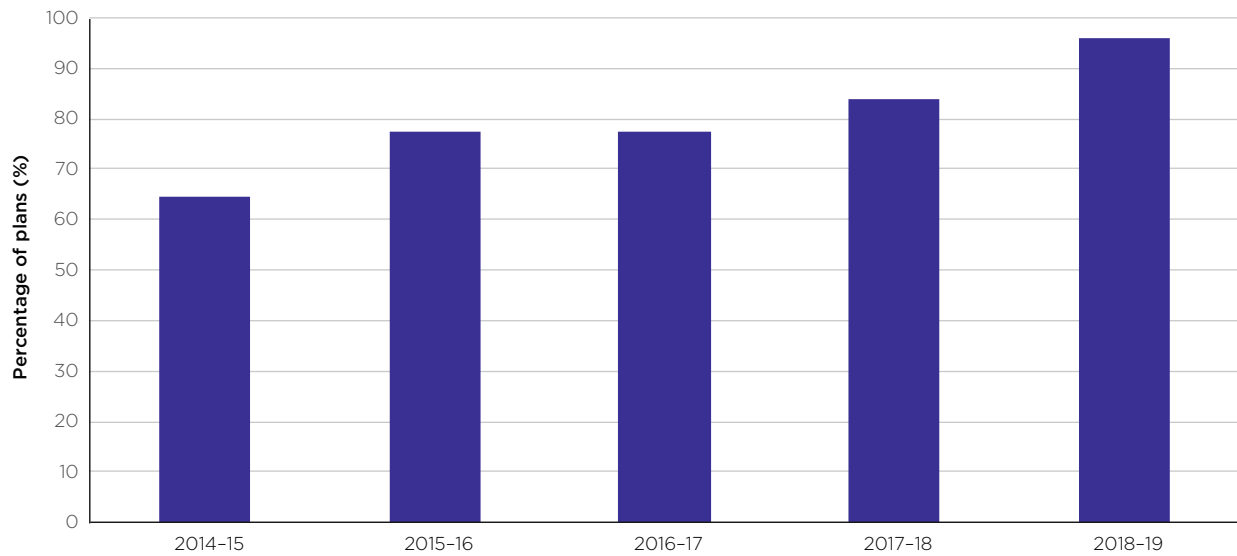
Source: ACCC estimates based on information from RSP websites.

Mobile phone plans with unlimited calls and SMS

The number of plans with unlimited calls or SMS continues to increase, with the proportion of post-paid plans with unlimited calls or SMS increasing from 65 per cent in 2014-15 to 96 per cent in 2018-19 (figure 2.28). Similarly, the proportion of prepaid plans with unlimited calls or SMS has seen an increase from 52 per cent in 2014-15 to 97 per cent in 2018-19 (figure 2.29).

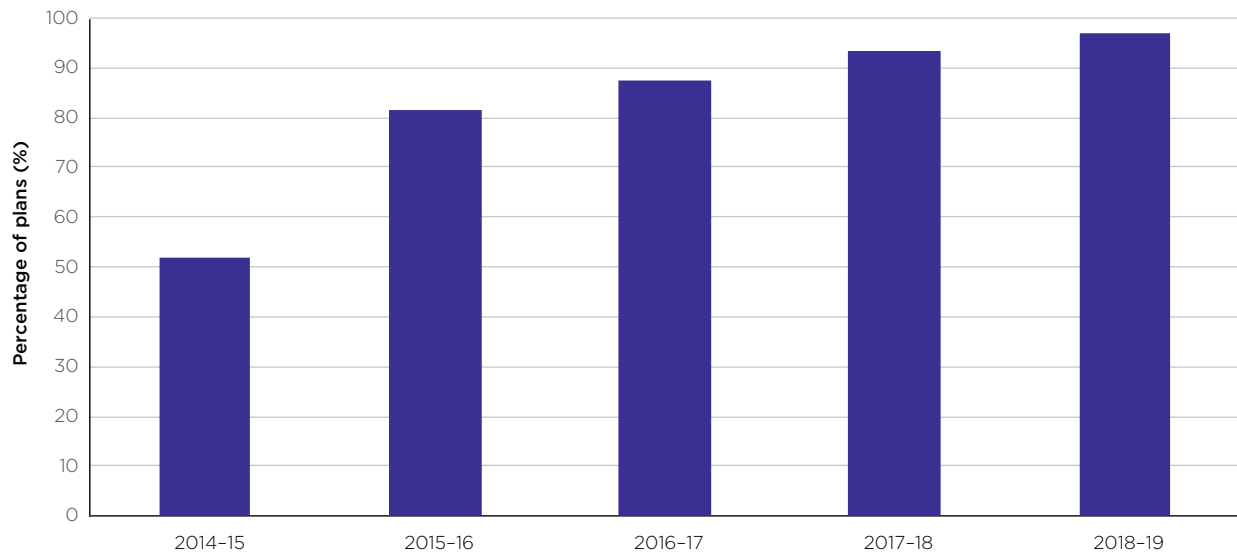
The increase in the number of plans with unlimited calls or texts is likely to reflect both a decline in the cost of providing these services as well as increasing competition from OTT services that provide similar functionalities. A shift in consumer preferences to substitutes such as OTT services has led many RSPs to offer ever increasing data allowances and other inclusions such as unmetered streaming services to capture market share.

Figure 2.28: Percentage of post-paid mobile phone services with unlimited calls or unlimited SMS from 2014-15 to 2018-19



Source: ACCC estimates based on information from RSP websites.

Figure 2.29: Percentage of prepaid mobile phone services with unlimited calls or unlimited SMS from 2014-15 to 2018-19



Source: ACCC estimates based on information from RSP websites.

Mobile broadband services

The services covered in this section are data-only mobile connections other than via mobile phone services, such as where data is accessed by means of USB modems, dongles and tablets and delivered by a mobile network.³⁰ There are approximately 8.4 million mobile broadband SIOs.³¹ Services provided by wireless modems connected to fixed line networks (fixed wireless) are not included, as they are captured in the fixed line broadband section.

³⁰ Mobile broadband services also excludes fixed wireless services (where the receiving device is stationary).

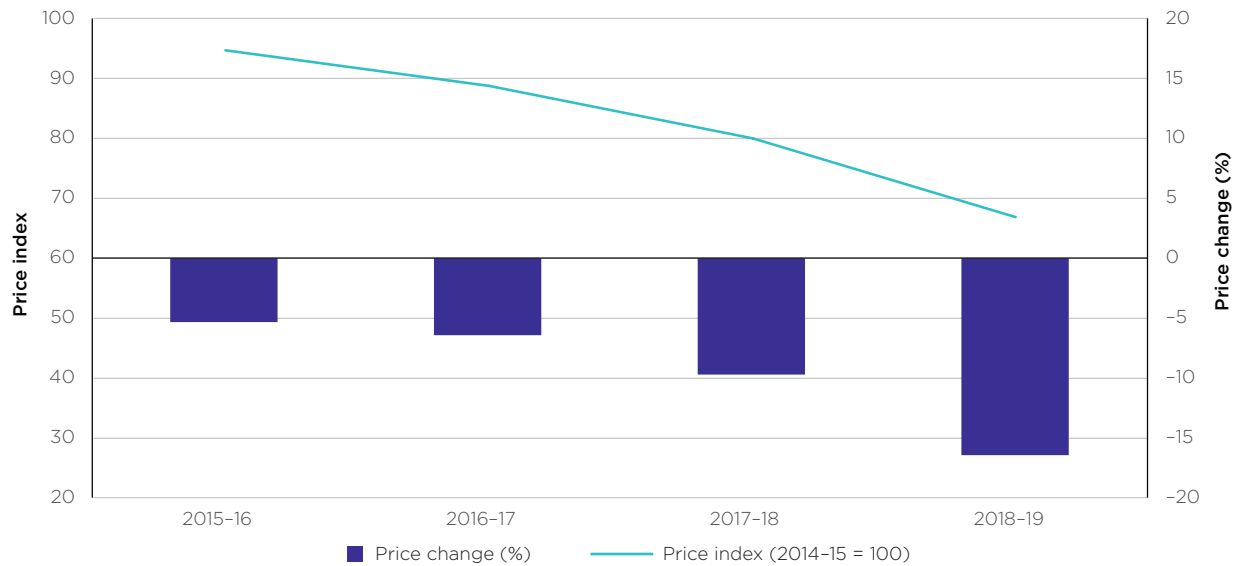
³¹ ACCC Internet Activity RKR data.

Due to limitations in data collected from carriers (subject to the Division 12 RKR) and other sources we have been unable to calculate a reliable comparison of retail market shares of mobile broadband providers for 2018-19. We intend to work with reporting carriers to address this issue for future reports.

Average price changes for mobile broadband services

When comparing similar plans, average prices for mobile broadband services fell in real terms by 16 per cent in 2018-19, following a decrease of 9.8 per cent in the previous year (figure 2.30). From 2015-16 to 2018-19, the average annual price fall was 9.5 per cent. Similar to fixed broadband, the decrease in overall real average prices can be partly attributed to the increase in data allowances over successive years.

Figure 2.30: Average price changes for mobile broadband services from 2015-16 to 2018-19



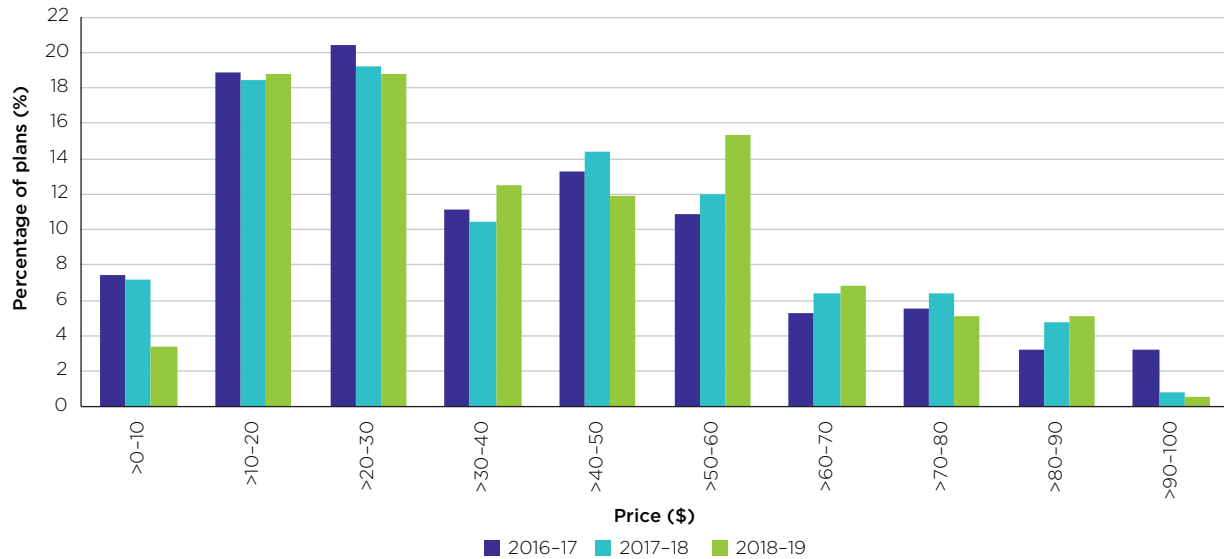
	2015-16	2016-17	2017-18	2018-19
Price change (%)	-5.3	-6.5	-9.8	-16.4
Price index (2014-15 = 100)	94.7	88.6	79.9	66.8

Source: ACCC estimates based on Division 12 RKR and information available from RSP websites

Range of mobile broadband plans available to consumers

The range of mobile broadband plans by price continues to show a fairly stable distribution over time. The majority of mobile broadband plans are concentrated in the \$10 to \$60 range, making up 77 per cent of plans on the market, slightly up from 74 per cent in 2017-18 (figure 2.31).

Figure 2.31: Percentage of mobile broadband plans at various price points from 2016-17 to 2018-19

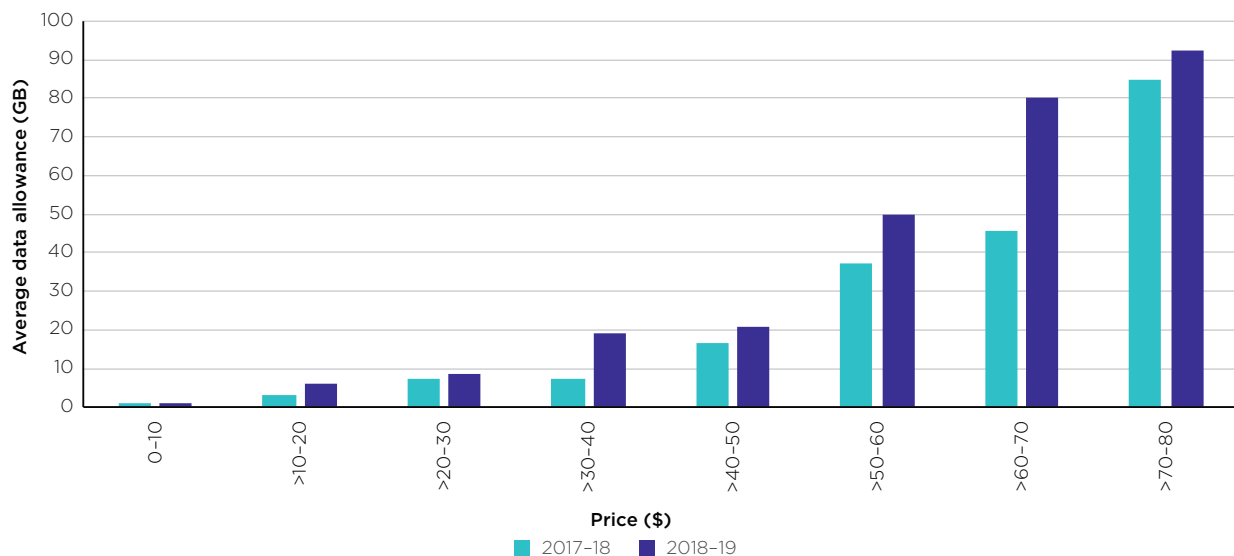


Source: ACCC estimates based on information from RSP websites.

The average data allowance for mobile broadband plans

While the distribution of prices remains roughly the same, it appears average data allowances have increased across all price points between 2017-18 and 2018-19 (figure 2.32). The greatest increase in average data allowances is seen in the \$60 to \$70 price point which increased from 46 GB to 80 GB on average.

Figure 2.32: Average data allowance at various price points for mobile broadband services in 2017-18 and 2018-19

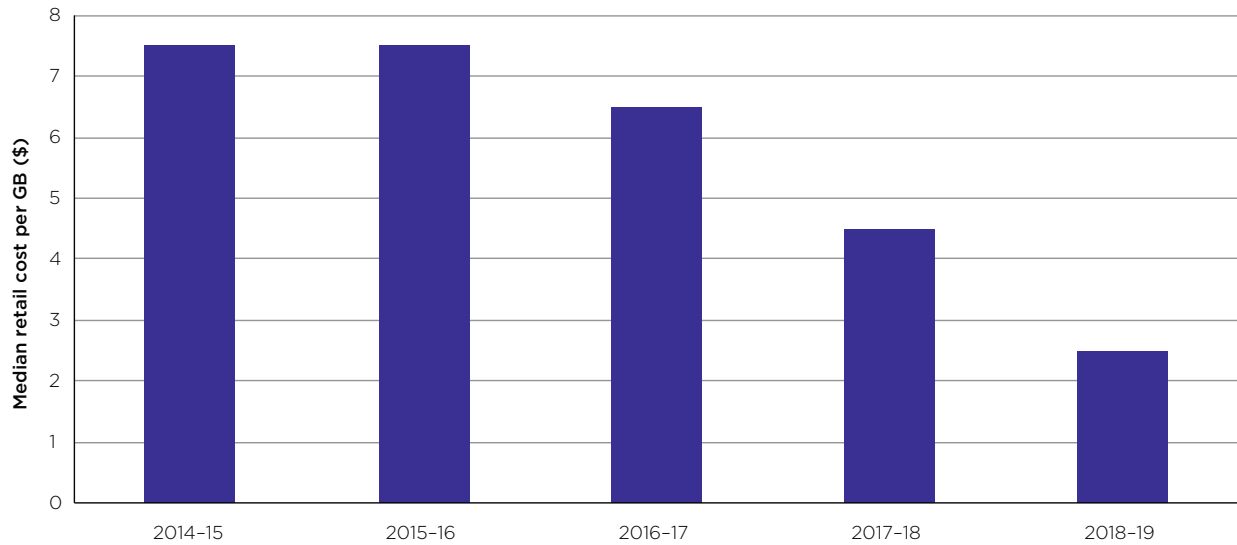


Source: ACCC estimates based on information from RSP websites.

Median retail cost per GB of data for mobile broadband services

Based on ACCC estimates, the median retail cost of data has decreased by 67 per cent since 2014-15. This is reflected in a median retail cost of \$2.50 in 2018-19 (figure 2.33). The majority of this decline was experienced over the previous two years with a decrease of 62 per cent since 2016-17.

Figure 2.33: Median retail cost per GB of data for mobile broadband services from 2014-15 to 2018-19



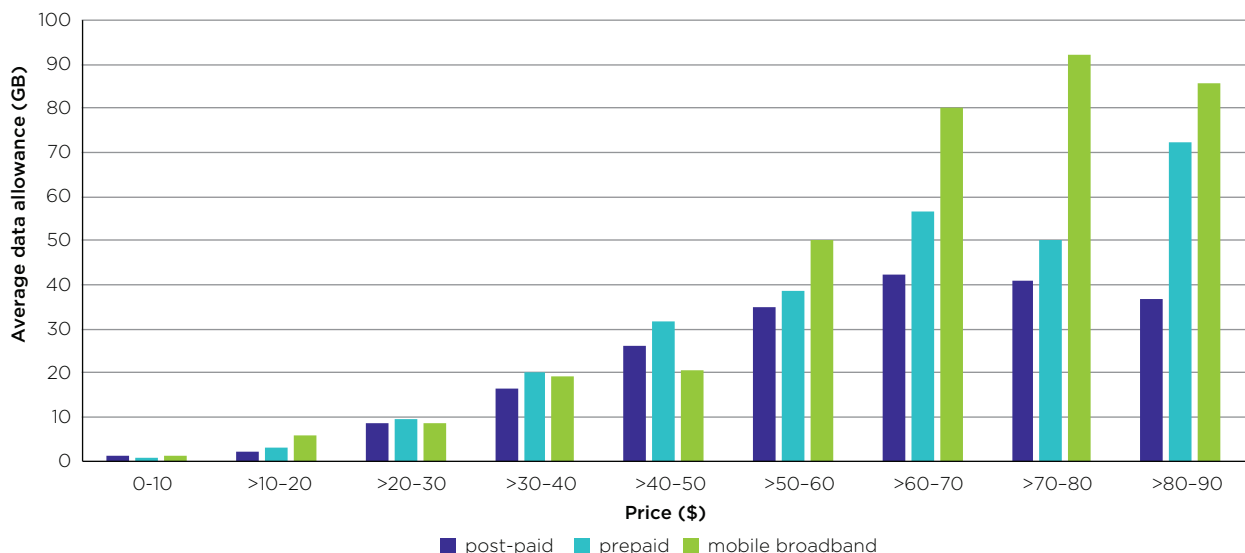
Source: ACCC estimates based on information from RSP websites.

All mobile services

The average data allowance for all mobile services

In 2018-19 the average data allowance across all mobile services (post-paid mobile phone, prepaid mobile phone and mobile broadband) remained relatively even at price points up to \$50. However, for price points greater than \$50, mobile broadband services, on average, offered a greater data allowance (figure 2.34). Additionally, the gap between the average data allowance of mobile broadband and mobile phone services (post-paid and prepaid) widened as the price points increased. This gap peaked at the price points between \$70 and \$80 before reducing at the price points between \$80 and \$90, largely attributable to increases in the average data allowance of prepaid mobile phone services (figure 2.34).

Figure 2.34: Average data allowance at various price points for all mobile services in 2018-19

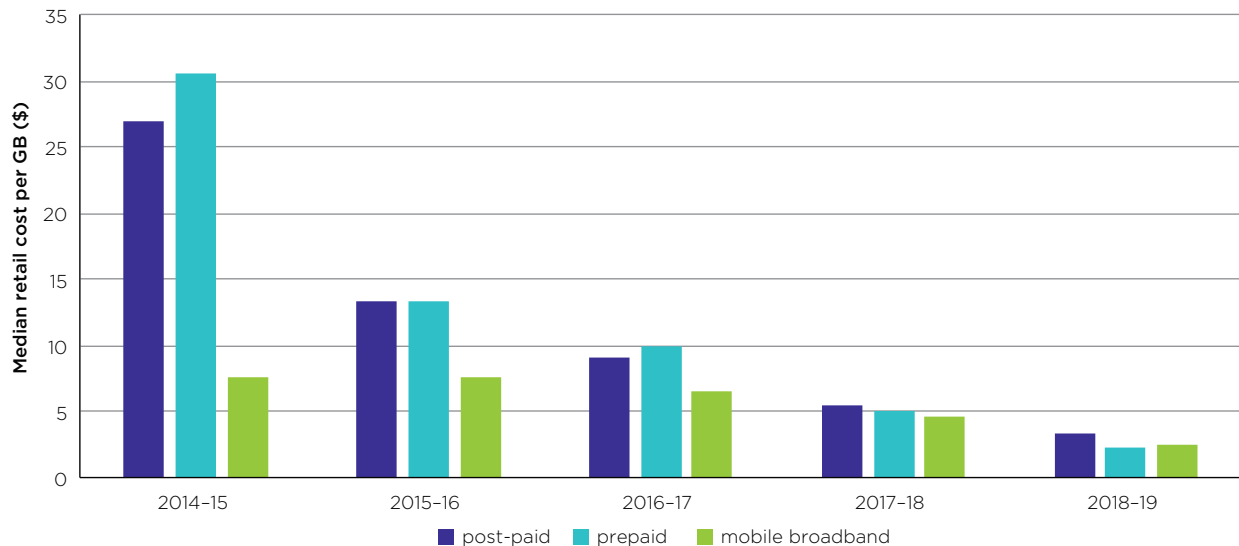


Source: ACCC estimates based on information from RSP websites.

Median retail cost per GB of data for all mobile services

Since 2014–15 there have been marked declines in the median cost per GB of data across all mobile services (prepaid mobile phone, post-paid mobile phone and mobile broadband) (figure 2.35). Prepaid mobile phone services experienced the greatest decline (92 per cent) in median retail cost per GB, followed by post-paid mobile phone (88 per cent) and mobile broadband services (67 per cent). However, despite a slightly smaller decline in the median cost for mobile broadband services, the cost per GB was relatively even across all mobile services were relatively even in 2018–19 (figure 2.35).

Figure 2.35: Median retail cost per GB of data for all mobile services from 2014–15 to 2018–19



Source: ACCC estimates based on information from RSP websites.

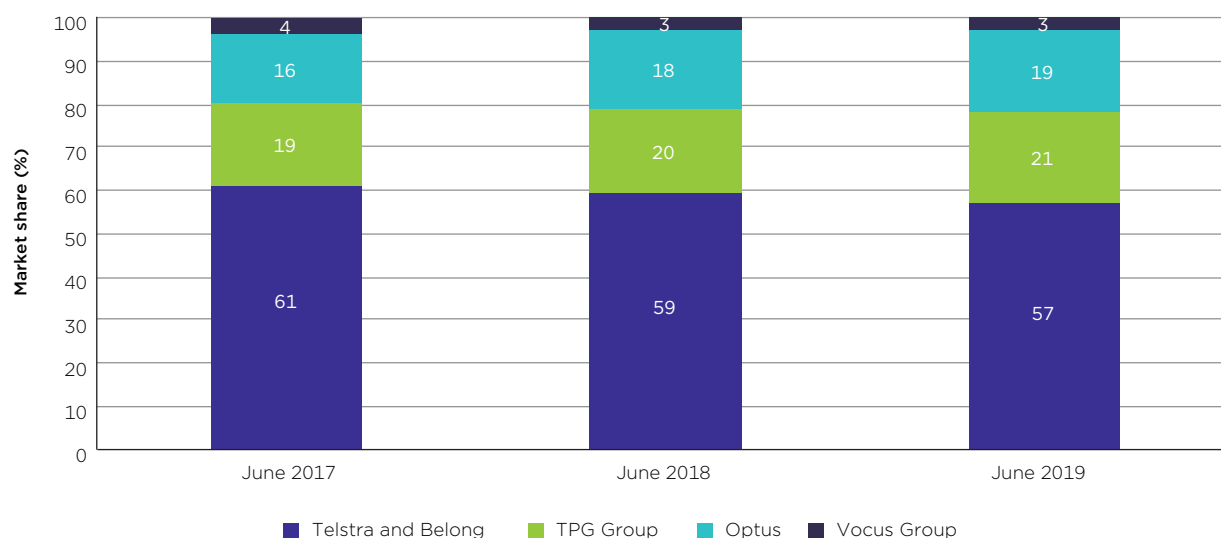
Fixed voice services

Fixed voice services are those provided over a dedicated access line on a fixed network and the provision of various calling options. These services include line rental and local, national and international calls and calls to mobiles. This category also includes voice over internet protocol (VoIP) services that are provided in a similar manner to traditional fixed voice services (i.e. by supplying a handset and geographic telephone number), including over the NBN.

Market shares

The ACCC does not collect data from all providers of fixed voice services, hence it is not possible to provide a definitive picture of the shares of providers in this market. Figure 2.36 is based on data available from the four largest market participants only (Telstra, Optus, TPG Group and Vocus Group), and hence represents a picture of the relative shares of these providers rather than the entire market.

Figure 2.36: Relative retail market share for fixed line voice services from 2016-17 to 2018-19



Source: Division 12 RKR data for all named carriers except for Vocus Group, whose figures are based on publicly available data.

Fixed voice pricing

The ACCC's market research has indicated that fixed line voice service providers are moving to primarily offer basic entry-level plans with no included calls for around \$20 to \$30 or all-inclusive plans that include unlimited local, national and mobile calls for between \$40 and \$70. Increasingly, standalone fixed voice plans include unlimited calls, and this continues to reduce the importance of individual call tariffs for consumers when deciding what plan to choose.

As the usage of traditional fixed voice services continues to decrease and existing voice services on the copper network are migrated over to VoIP on the NBN, RSPs are continuing to move towards offering bundle products where a fixed voice service is supplied in conjunction with a broadband service. Further analysis of broadband services is discussed at the beginning of this section (section 2.2).

2.3 Consumer trends and related issues

Consumer trends

Consumers continue to favour mobile over fixed voice services

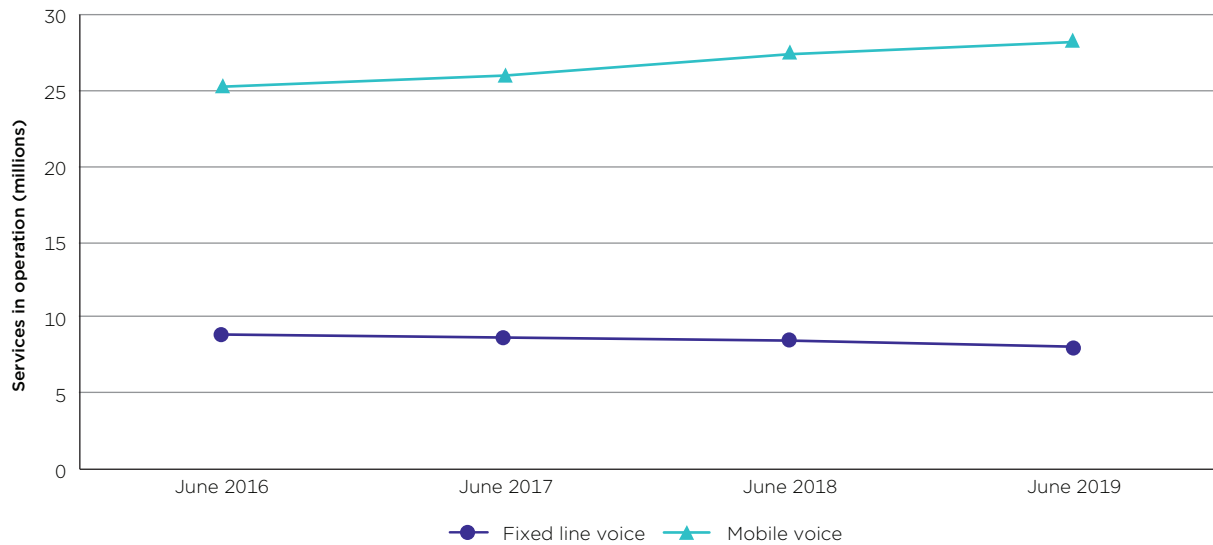
In 2018-19 the number of mobile phone voice SIOs continued to rise, from 27.3 million to just over 28 million.³² In contrast, the number of fixed line SIOs fell from 8.5 million to 8 million over the same period (figure 2.37). Despite an increase in mobile phone SIOs, for the first time, the total voice call minutes of mobile originating calls showed a material decline. The continued decline in fixed voice originating minutes meant that the total number of originating voice call minutes declined from 79 to 74 billion minutes (figure 2.38).³³ This may signify a shift towards OTT applications for voice calls and non-verbal communications.

As noted above, there are some limitations in the data we collect under ACCC RKRs particularly with regard to coverage of fixed line services. Notwithstanding these limitations, the SIO and usage figures are largely indicative of the key trends over time.

³² ACCC Division 12 RKR data.

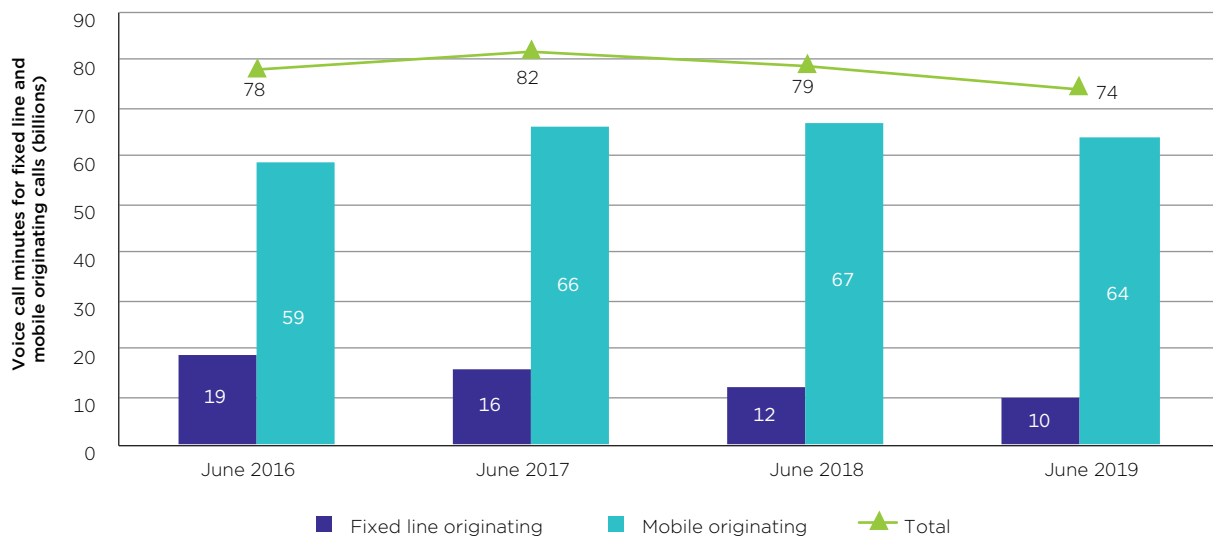
³³ Some figures may differ from those report in previous reports due to revisions by reporting carriers.

Figure 2.37: Comparison of mobile and fixed line SIOs from 2015-16 to 2018-19



Source: ACCC Division 12 RKR data.

Figure 2.38: Comparison of mobile and fixed line telephone usage from 2015-16 to 2018-19

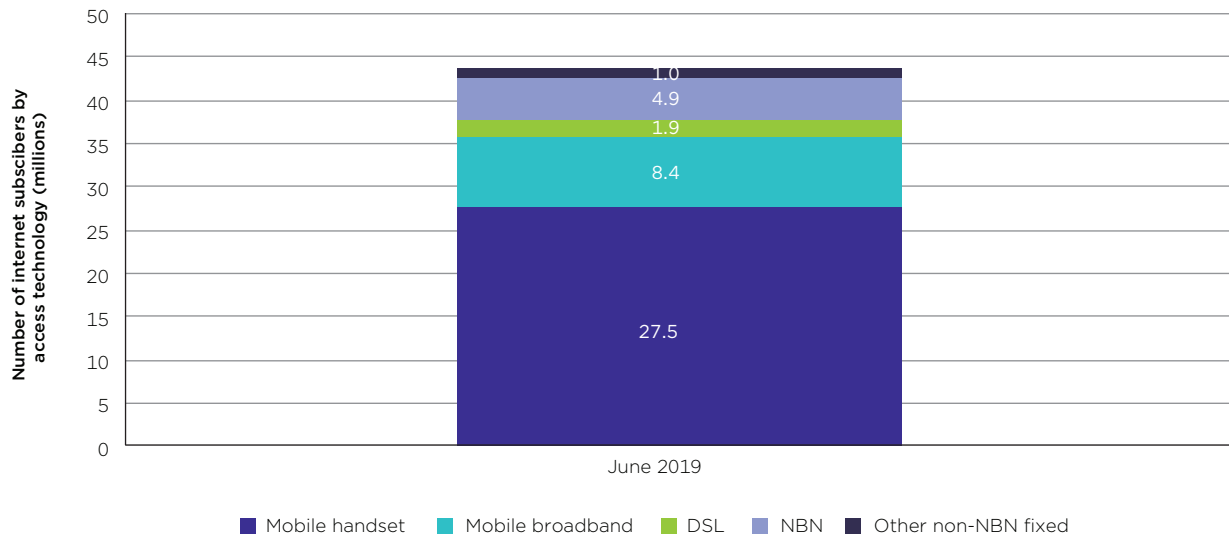


Source: ACCC Division 12 RKR data.

Mobile phones remain the most common way to access the internet

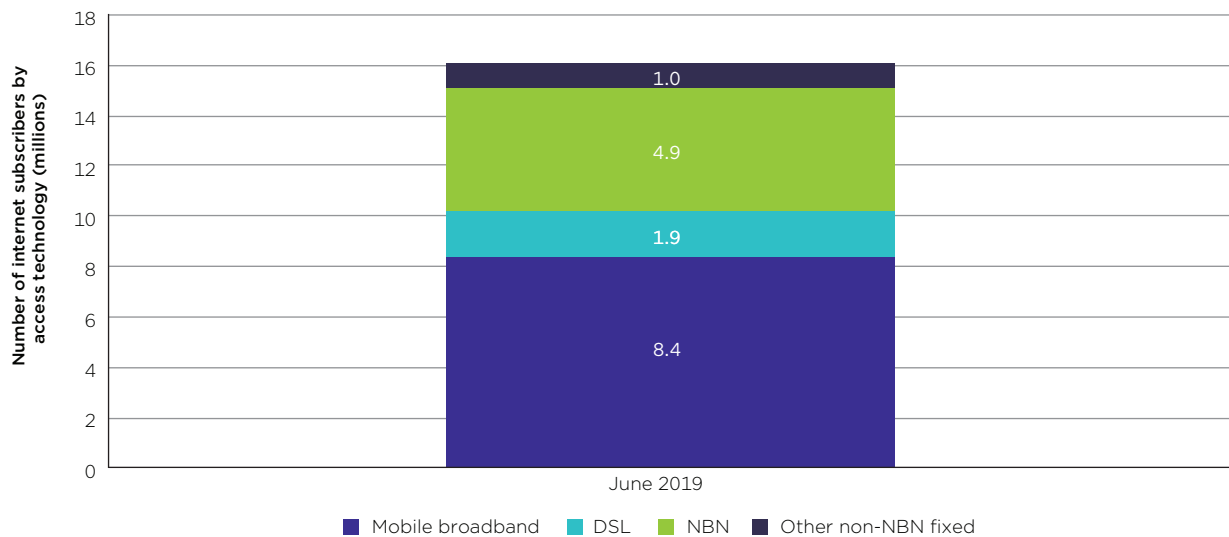
The number of internet services continued to grow during the year, reaching over 43 million services as at 30 June 2019. Of all the technologies available for access to the internet, mobile phone handsets continue to be the most prevalent by a large margin, with around 28 million services (figure 2.39). For fixed broadband, NBN services continue to grow rapidly, reaching over 4.9 million services as at 30 June 2019, far greater than the 1.9 million ADSL services that remain in operation. Other non-NBN fixed line services represent the remainder at 1 million services (figure 2.40).

Figure 2.39: Total retail SIO by access technology



Source: ACCC Internet Activity RKR data.

Figure 2.40: Total retail SIO by access technology (excluding mobile phones)

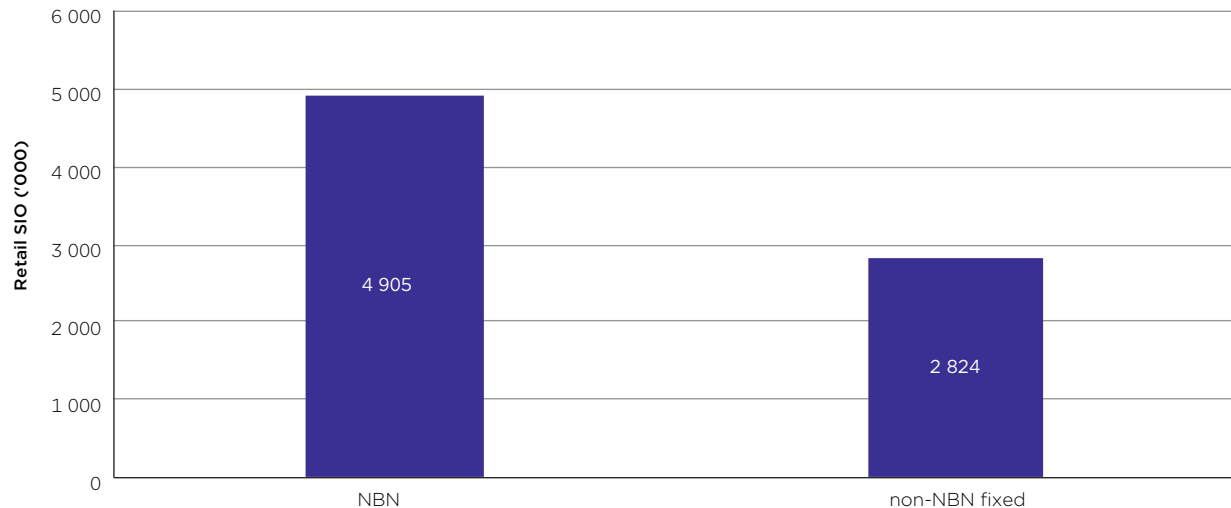


Source: ACCC Internet Activity RKR data.

Consumers with NBN services outnumber those with non-NBN fixed services

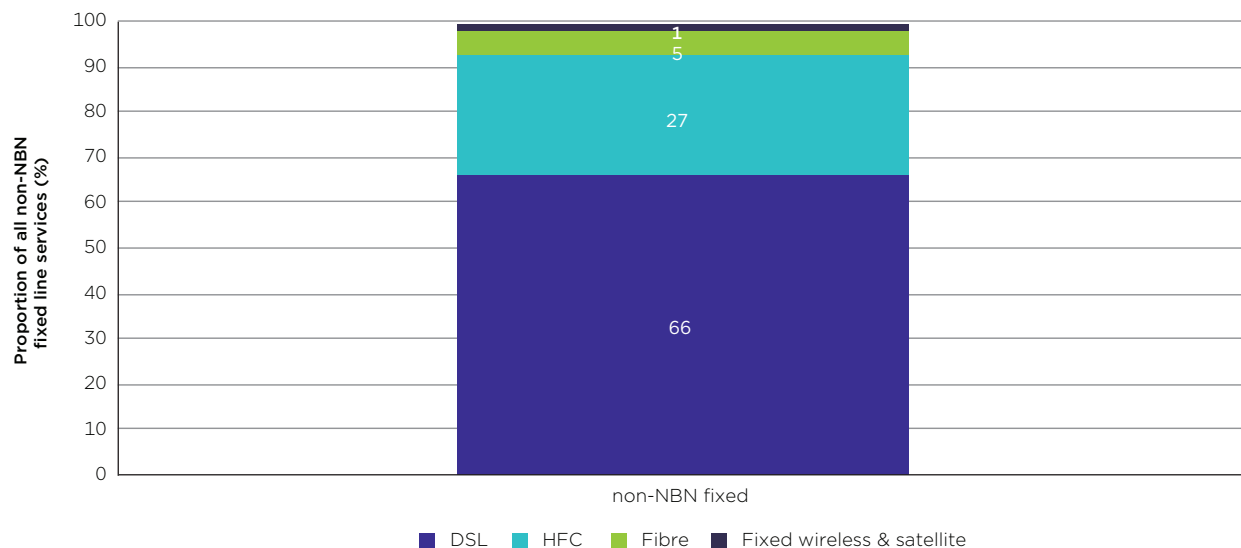
The total number of retail NBN and non-NBN fixed SIOs reached 7.7 million as at 30 June 2019. Retail NBN SIOs contributed to 63 per cent of this total with 4.9 million SIOs, while non-NBN fixed SIOs totalled 2.8 million or 37 per cent of the total (figure 2.41). This trend is expected to continue as consumers migrate off legacy networks such as Telstra's legacy copper network onto the NBN. DSL SIOs represented the majority (66 per cent or 1.9 million SIOs) of the non-NBN fixed SIOs, with significant numbers also on HFC networks (figure 2.42). A small but significant proportion of non-NBN SIOs are on alternative fibre, fixed wireless and satellite networks.

Figure 2.41: Total number of retail NBN and non-NBN fixed SIOs



Source: ACCC Internet Activity RKR data.

Figure 2.42: Proportion of retail non-NBN fixed SIOs by access technology



Source: ACCC Internet Activity RKR data.

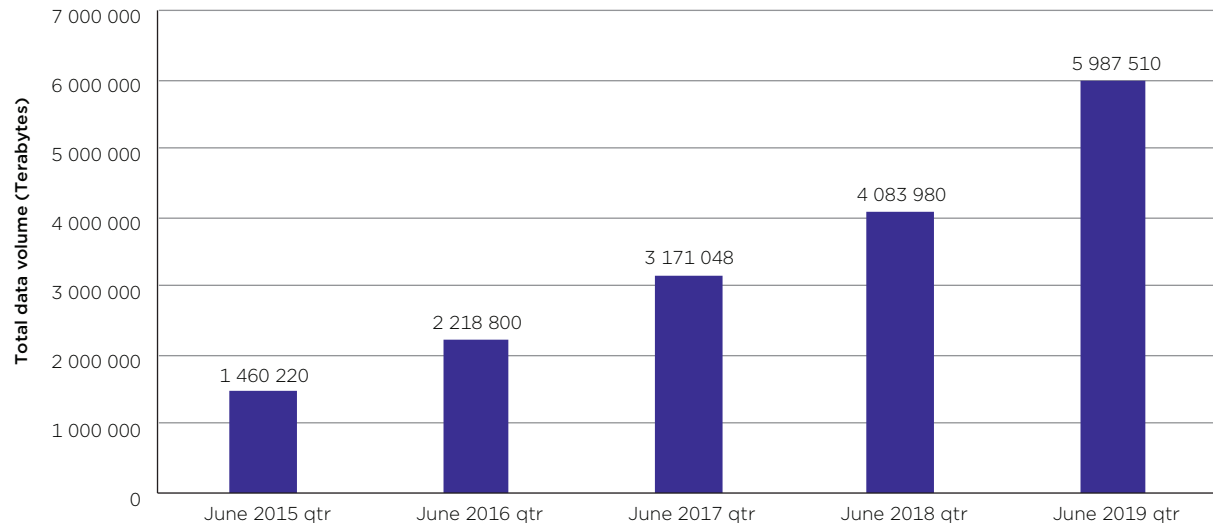
Continuing growth in data downloads

The total volume of data downloaded across all access technologies continued to grow during the year. Figure 2.43 uses both ACCC's Internet Activity RKR data and historical data from the ABS' Internet Activity Survey. The total volume of data downloaded has grown approximately 47 per cent in the three months to June 2019 compared to the corresponding quarter of 2018. This is a faster rate of growth than the 29 per cent increase recorded between 2017 and 2018 but in line with the growth rate experienced since 2015.

The continued growth in data downloads is likely driven by consumers' appetite for content streaming services, as well as content and video-rich social media, gaming and other applications.

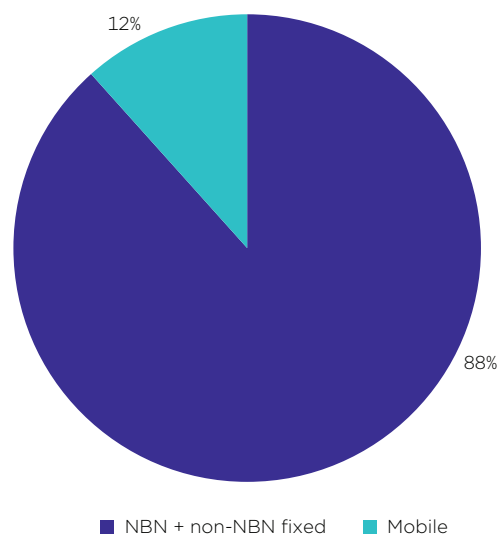
Figure 2.44 illustrates that fixed broadband services continue to account for the majority (88 per cent) of data downloaded, with mobile services (including mobile phone and mobile broadband) accounting for 12 per cent of all download volumes for the quarter ending 30 June 2019.

Figure 2.43: Total volume of data downloaded from 2014–15 to 2018–19



Source: ACCC Internet Activity RKR data and ABS Internet Activity Survey (8153.0) data.

Figure 2.44: Proportion of data download volume by fixed and mobile access technologies



Source: ACCC Internet Activity RKR data.

Telecommunications complaints

Complaints to the TIO

The Telecommunications Industry Ombudsman (TIO) provides a dispute resolution service for telecommunications disputes between service operators and residential and small business customers.

In 2018–19 the TIO received 132 387 complaints, a 21 per cent reduction from the previous year. This marks the first decline in complaint numbers following two consecutive years of increasing complaints. Residential customers accounted for 85.5 per cent of complaints with small businesses accounting for 14.5 per cent.

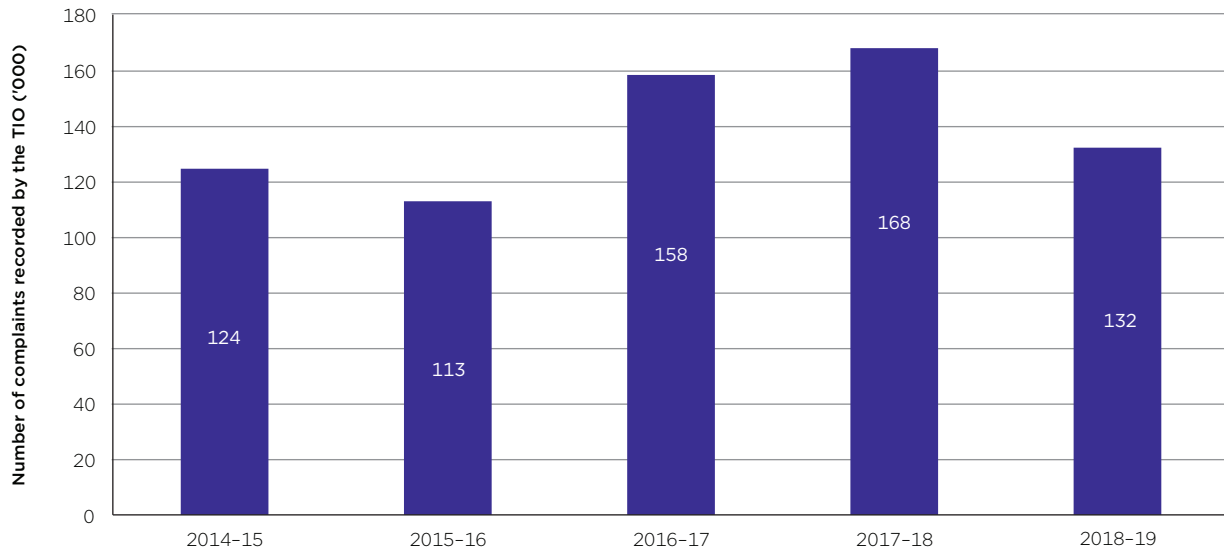
The TIO observed a number of developments that had contributed to strengthened consumer safeguards and better consumer outcomes. This included our updated broadband speeds claims

industry guidance (discussed in section 3) and the ACMA's new rules and standards for the migration of consumers to the NBN.³⁴

The TIO noted that despite the decline in complaints, complaints are increasing in complexity leading to longer wait times between escalation and resolution.

Figure 2.45 shows the number of complaints received by the TIO over the past five years.

Figure 2.45: Number of complaints received by the TIO from 2014-15 to 2018-19



Source: TIO Annual Report 2018-19.

In 2018-19 the largest category of complaints reported was about internet services (43 164) followed by mobile services (40 103) and multiple services (30 678). The TIO introduced a multiple services category to record complaints which involve more than one type of service (for example, a delay connecting both a landline voice and internet service).

The top complaints to the TIO regarding internet services included: no action or delayed action by a service provider, service and equipment fees, slow data speed, intermittent service/drop outs and delays in establishing a service. For mobile services, the top complaints included: service and equipment fees, no or delayed action by provider, resolution agreed but not met, misleading conduct when making a contract, and termination fees.

Table 2.5: Complaints to the TIO by service type in 2018-19³⁵

Type of service	Percentage of complaints
Internet	32.6
Mobile	30.3
Multiple services	23.2
Landline	13.0
Property related	0.9

³⁴ TIO, *Telecommunications Industry Ombudsman Annual Report 2018-19*, p. 11, <https://www.tio.com.au/sites/default/files/2019-09/TIO%20Annual%20Report%202018-19.pdf>.

³⁵ TIO, *Telecommunications Industry Ombudsman Annual Report 2018-19*, p. 14, <https://www.tio.com.au/sites/default/files/2019-09/TIO%20Annual%20Report%202018-19.pdf>.

As the number of telecommunications services provided over the NBN increases with NBN rollout and migration, the number of complaints received by the TIO about services delivered over the NBN will likely rise as a proportion of all internet and landline complaints. Compared to the previous year, on a per premises basis, complaints about the NBN were lower, however an upward trend in complaints was reported during the year.

Connection related complaints increased from 6.7 per thousand premises added to the network in the first half of the year to 8.6 in the second half, remaining slightly below the corresponding figures of 9.2 and 9.0 in 2017–18. Similarly, service quality complaints increased from 2.1 per thousand premises to 2.5 between the first and second halves of the year, however this is below the 4.1 and 3.2 in the corresponding periods of 2017–18.

Of complaints received by the TIO in 2018–19, 20 619 complaints were about a new connection or changing provider, including delays in establishing a connection, unauthorised transfers and problems with telephone numbers.

Of the 48 440 complaints about service quality, 48 per cent were about services delivered over the NBN. This category of complaint includes issues such as lack of service, intermittent service or drop outs, slow data speed and poor mobile phone coverage.

Carriers' complaint data

Since 1 July 2018 medium and large service providers have been required to collect and report complaints data quarterly to the ACMA.³⁶ In contrast to TIO data, this complaint data captures a much greater number of consumer complaints including those not escalated from the TIO (as they are resolved initially by the RSP). This complaint data provides greater transparency on how each service provider compares in complaints-handling performance and what issues are contributing to complaints.

Over the 2018–19 financial year, 1.4 million complaints were received by service providers.³⁷ The ACMA found that complaints trended down over the year from a high of 124 complaints per 10 000 services in the second quarter to 97 per 10 000 services in the final quarter.³⁸ Other key observations made by the ACMA include:

- mobile services had the lowest complaint rate with just 48 complaints per 10 000 services in the June quarter
- NBN voice-only services had the highest complaint rate at 488 complaints per 10 000 services
- for NBN broadband services, complaints were largely concerning service faults, followed by connection issues and speed issues
- complaints about services over the NBN declined over the year and HFC and FTTC had the highest level of complaints of the NBN access technologies, while satellite had the lowest
- there were more complaints about fixed broadband services on non-NBN networks (at 367 per 10 000 services) than NBN networks (at 166 complaints per 10 000 services)
- the median time to resolve complaints improved during the year, from six to five days.

Complaints to the ACCC

The ACCC accepts consumer complaints under the ACL from consumers and small businesses about a wide range of issues. We do not resolve individuals' complaints, instead they are referred to agencies that are best placed to resolve them.³⁹ The ACCC however uses the information provided by complaints to assist in identifying matters for further investigation which will result in industry-wide application.

³⁶ ACMA, New complaints-handling rules, viewed 2 December 2019 at <https://www.legislation.gov.au/Details/F2018L00721>.

³⁷ ACMA, Telecommunications complaints-handling 2018–19, October 2019, viewed 2 December 2019 at <https://www.acma.gov.au/publications/2019-10/report/telecommunications-complaints-handling-2018-2019>.

³⁸ Optus data is excluded from this report due to the ACMA's concerns about data accuracy.

³⁹ ACCC, Compliance and Enforcement policy, viewed on 12 September 2019 at <https://www.accc.gov.au/publications/compliance-and-enforcement-policy>.

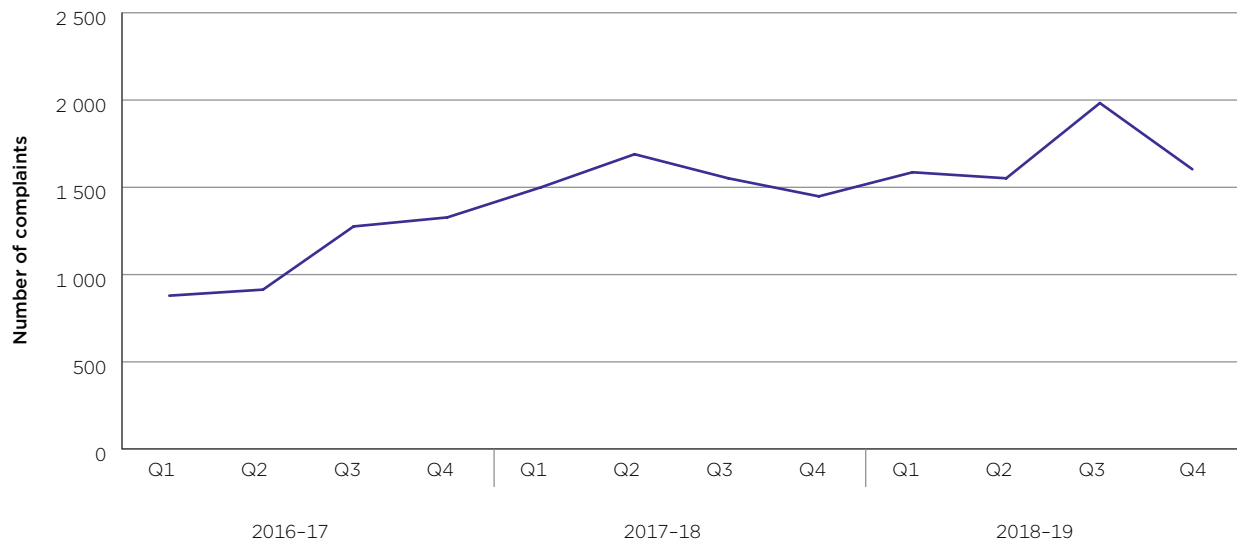
During 2018-19 we received 6 718 communications industry related consumer complaints, an 8 per cent increase from the previous year. We have referred over 63 per cent of complaints received by the ACCC to other agencies, mainly to the TIO and state based agencies who are tasked with resolving consumer complaints and investigating issues outside of the ACCC's remit. While across most categories the number of complaints increased during the year, there was a significant reduction in allegations of misleading or deceptive conduct and wrongly accepting payment (table 2.6). The ACCC's investigations regarding communications matters are discussed further in chapter 3.

Table 2.6: ACCC complaints by conduct type in 2017-18 and 2018-19

Type of conduct	Number of complaints (2017-18)	Number of complaints (2018-19)
Section 18—Misleading or deceptive conduct	3 264	2 617
Section 54—Guarantee as to acceptable quality	1 809	1 823
Section 29(1)(b)—False representations regarding services	566	583
Section 36—Wrongly accepting payment	600	414
Section 60—Guarantee as to due care and skill	234	254
Section 29(1)(a)—False representations regarding goods	93	192
Section 29(1)(m)—False representations regarding exclusion or effect of any condition, warranty, guarantee, right or remedy	155	121
Section 29(1)(i)—False representations regarding price	96	118
Section 61—Guarantees as to fitness for a particular purpose	90	102
Sections 56-57—Guarantee relating to the supply of goods by description, sample or demonstration	79	98

Source: ACCC complaints data.

Figure 2.46: Communications related ACL complaints to the ACCC from 2016-17 to 2018-19



Source: ACCC complaints data.

Complaints to the ACCC are similar to those reported to the TIO with service quality and connection issues continuing to be a significant issue for consumers. The NBN was a factor in 22 per cent of all complaints (an increase of 37 per cent on the number of complaints involving NBN in 2017-18).

Following a broad increase in complaints last year, the number of complaints to us regarding all of the key fixed and mobile providers decreased in 2018-19. Complaints made against Optus decreased by 28 per cent, complaints against Telstra decreased by 18 per cent and TPG Group and Vodafone complaints fell 19 and 4 per cent respectively compared to the previous period. In contrast, complaints made against key hardware suppliers increased significantly, including Kogan Australia Pty Ltd, Samsung Australia Pty Ltd and Apple Pty Ltd.

3. ACCC activities in communications

The ACCC performs specific roles under the CCA (Parts XIB and XIC) in relation to communications markets, as well as other activities related to the communications sector. These activities are reported in detail in our periodical publications such as the quarterly ACCCount and the ACCC Annual Report.⁴⁰

This chapter briefly describes activities undertaken by the ACCC within the communications sector during 2018–19 in relation to:

- access to telecommunications networks including the NBN
- structural separation of Telstra
- monitoring and reporting
- enforcement and compliance
- mergers, authorisation and third line forcing
- advice, advocacy and contributions to policy processes.

3.1 Access to telecommunications

Part XIC of the CCA allows the ACCC to declare certain communications services where it is in the long-term interests of end users to do so. Once a service is declared, we can set regulated terms and conditions of access, including price. This is often done via an access determination although it may also be effected through a binding rule of conduct. There are currently 11 declared communications services, further details of which are set out in appendix 5.1.

Declarations and access determinations

During 2018–19 we conducted several inquiries on access to telecommunications services.

Fixed line services

On 26 November 2018 the ACCC extended the declaration of six of Telstra's fixed line services until 30 June 2024. The six regulated, or declared, services are the ULLS, LSS, wholesale line rental (WLR), local carriage service (LCS) and fixed originating and terminating access services (FOAS & FTAS). The declaration of the other fixed line service, wholesale ADSL expires on 13 February 2022.

We considered that continued regulation would help improve certainty for end users during the transition to the NBN and encourage competition in the retail market.

We concluded our inquiry into making final access determinations (FADs) for the seven declared fixed line services on 1 November 2019 by deciding to maintain existing prices and non-price terms and conditions for access to these services until 30 June 2024, with effect from 15 November 2019.

Domestic transmission capacity service

On 1 April 2019 the ACCC released its final report on the domestic transmission capacity service (DTCS) declaration inquiry. We decided to extend the DTCS declaration for five years until 31 March 2024, deregulate a further 137 metropolitan and 27 regional ESAs and vary the service description to address changes in the transmission services market since the previous declaration inquiry.

The varied DTCS service description will come into effect from 1 January 2020 to give providers sufficient time to make any necessary adjustments to their commercial arrangements.

⁴⁰ The ACCC Annual Report and quarterly ACCCount publications can be found on the ACCC website at <https://www.accc.gov.au/publications/accc-aer-annual-report> and at <https://www.accc.gov.au/publications/acccount>.

We commenced an inquiry into making a new FAD for the DTCS on 5 June 2019. This FAD will replace the current FAD which will expire when the new FAD is finalised.

On 19 December 2018 we issued Binding Rules of Conduct (BROC) setting an interim price for the DTCS between mainland Australia and Christmas Island, provided through Vocus Group's Australia Singapore Cable. At that time, we commenced an inquiry to vary the current FAD to set a final regulated price for the Christmas Island service before the BROC expires in December 2019.

Mobile terminating access service

On 26 June 2019 the ACCC extended the domestic Mobile Terminating Access Service (MTAS) declaration for voice services for a further five years. We concluded ongoing regulation was required due to the lack of effective substitutes for voice calls for which the MTAS is an essential input.

The ACCC has also decided to remove the declaration of SMS termination after a transition period of six months. This is because OTT messaging services are now effective substitutes for SMS services, for which SMS termination is an essential input, which means that declaration is no longer necessary to prevent the MNOs from exercising market power in the provision of SMS termination services.

The MTAS is a wholesale service that allows consumers on different mobile networks to make calls or send SMS to each other. We regulate the MTAS to ensure that calls can be made between consumers on all mobile phone networks. On 6 June 2019 we commenced an inquiry into a new FAD for the MTAS.

Quarterly reporting of Access Agreements

Carriers or carriage service providers who supply declared services must lodge quarterly reports with the ACCC regarding all new, varied, cancelled and in-force access agreements for declared services.

The total number of companies that provided these reports remained constant in 2018–19 compared to 2017–18 with 18 companies reporting.

Facilities access code review

On 3 August 2018 the ACCC commenced a review of its Code of Access to Telecommunications Transmission Towers, Sites of Towers and Underground Facilities (the Facilities Access Code) which was made under the *Telecommunications Act 1997* (Telecommunications Act). The Code governs how access to certain telecommunications facilities owned by telecommunications carriers, including mobile towers and underground ducts, is provided to other carriers seeking to install their equipment on or in those facilities.

We intend to finalise our review during the first quarter of 2020.

3.2 National Broadband Network

NBN Co's Special Access Undertaking

The ACCC sought stakeholder views on NBN Co's proposed variation to its special access undertaking (SAU) on 20 May 2019 when NBN Co sought to extend the operation of certain non-price provisions, which expired on 30 June 2019.

These provisions relate to NBN Co's product development forum, dispute resolution, and customer endorsement of network design changes. These provisions have a shorter life than the SAU as a whole to allow for an assessment of whether they were operating as intended. The ACCC must assess the SAU variation against the criteria specified in section 152CBD(2) of the CCA and either accept or reject the SAU variation.

We are considering submissions to NBN Co's proposal and will make a final decision in the first quarter of 2020.

In October 2018 NBN Co withdrew its proposed variation to its SAU to incorporate the three additional technologies, FTTN, FTTB and HFC under the multi-technology mix (MTM) model. We had been concerned that accepting the proposed SAU variation could make it less likely for NBN consumers to benefit from more competitive pricing and improvements in service quality.

Inquiry into NBN wholesale service standards

The ACCC commenced a public inquiry in November 2017 to determine whether NBN wholesale service standard levels are appropriate, and to consider whether regulation is necessary to improve consumer experiences.

On 11 September 2018 we accepted a court enforceable undertaking from NBN Co under section 87B of the CCA under which NBN Co committed to improve its wholesale service level terms and provide additional public reporting on its fixed wireless network. The key amendments included were:

- NBN Co paying a \$25 rebate to its wholesale customers for every late connection and fault rectification
- NBN Co introducing a new \$25 rebate for each missed appointment
- NBN Co reporting to RSPs about its service level performance sooner, and
- NBN Co providing additional transparency to RSPs and the public on the performance of its fixed wireless network.

Following acceptance of NBN Co's undertaking, we commenced the second phase of the inquiry, seeking further input on matters that were not fully addressed by NBN Co's enforceable undertaking. On 1 October 2019 we released a draft decision for consultation proposing to make regulated terms on NBN Co's wholesale service standards. The draft decision proposed increased rebates for late connections, fault repairs, missed appointments and new provisions directed towards underperforming service speeds. The draft decision also proposed enhanced reporting and measuring requirements to improve transparency over NBN Co's operations.

NBN wholesale market reporting

During 2018–19 the ACCC continued to report quarterly on NBN wholesale market indicators providing a detailed view of the size and structure of emerging NBN wholesale access markets. The reports provide market participants with key data on how the NBN wholesale market is developing including the continued growth in NBN service subscribers, shifts in the take-up of different speed tiers and changes in contracted capacity. We have observed that more access seekers are directly accessing the NBN in more locations around Australia, offering greater choice and potentially better services for consumers and businesses.

In addition to obtaining services directly from NBN Co, RSPs have the option to resell services offered by NBN access seekers. As our reports do not separately detail these services, they do not provide a comprehensive analysis on the structure of the NBN retail market.

NBN operation and maintenance activities equivalence reporting

On 21 December 2015 NBN Co and Telstra announced a service delivery agreement for the supply of, amongst other things, network activation and assurance services (the Operation and Maintenance Master Agreement (OMMA)). Telstra is one of three service delivery partners (SDPs) that NBN Co has contracted under an OMMA to provide these services on its fixed line (FTTP, FTTN/B, HFC) networks. Unlike Telstra, the other OMMA SDPs are not also NBN retail service providers.

Work undertaken by Telstra under the OMMA includes activating homes and businesses once the NBN fixed line network becomes available in an area, along with maintenance and fault remediation activities.

In response to concerns that Telstra, in providing OMMA services, could potentially prioritise the activation or remediation of NBN services where it is the access seeker and/or downgrade work requested by its competitors, NBN Co implemented a quarterly equivalence reporting framework in December 2016. This reporting is intended to demonstrate whether Telstra retail customers are

obtaining better outcomes than the customers of other NBN access seekers where Telstra is the OMMA SDP.

We monitor the quarterly equivalence reports provided by NBN Co to identify potential systemic discrimination arising from any preferential service activation and fault handling by Telstra as an OMMA SDP to its own retail customers.

During 2018–19, we undertook a review of the performance outcomes in relation to Telstra's average time to complete fault rectifications for Telstra end-users compared to the end-users of other access seekers. We concluded that, in the case of fault rectification, there can be a range of factors that influence relative performance.

We understand that a material factor contributing to the average time to resolve end user faults is whether or not an access seeker accepts the First Available Appointment (FAA). In situations where the FAA is not selected by an access seeker, this can add a significant number of additional hours to the overall time to complete the fault rectification.

3.3 Structural separation of Telstra

Telstra's compliance with structural separation undertaking

Telstra's structural separation undertaking (SSU) implements the structural separation of Telstra through the migration of end-users to the NBN. Telstra's Migration Plan forms part of the SSU. The SSU and the Migration Plan together specify Telstra's commitments to progressively migrate its fixed line voice and broadband customers onto the NBN and promote equivalence and transparency during the transition period.

To promote competition until the NBN is completed, the SSU contains interim equivalence and transparency measures, which require Telstra to supply regulated services to its wholesale customers and own retail business units on equivalent terms. These measures also require Telstra to identify and take steps to address any instance of non-equivalence. For further information on these frameworks and the ACCC's role, see appendices 5.2 and 5.3.

Reporting under SSU

The SSU requires that the ACCC monitors and reports to the Minister each financial year on Telstra's compliance with its SSU obligations. The ACCC's report to the Minister for 2017–18 was tabled in Parliament and on 15 February 2019 was publicly released on the ACCC website.

The ACCC's 2017–18 report noted that:

- Telstra continued to demonstrate a commitment to compliance with its SSU and Migration Plan
- there had been a reduction in the number of compliance matters reported by Telstra, continuing a trend from 2012–13.

The 2018–19 report is due to be tabled in early 2020.

3.4 NBN Migration Plan activities

Telstra's variation to Migration Plan

Telstra's Migration Plan outlines the steps it will take to progressively migrate voice and broadband services from its existing copper and HFC networks onto the NBN.

On 26 October 2018 the ACCC approved Telstra's variation to its Migration Plan after determining that it complied with the migration plan principles. The proposed variation included changes to migration arrangements for Special Services together with a number of other changes for which Telstra has previously received regulatory forbearance from the ACCC.

Since the Migration Plan was approved in 2012, we have considered and approved a number of variations to the Migration Plan, including approving variations to:

- incorporate the shift to a MTM
- facilitate the use of FTTC as an access technology for the MTM NBN.

Migration Plan forbearance

On 8 May 2018 Telstra requested regulatory forbearance from its Migration Plan obligations for premises in HFC regions with disconnection dates between February and May 2018 and existing disconnection requirements for some premises that remained NBN non-serviceable.

Telstra's proposal meant that the disconnection of all ordinary copper services and HFC services at affected premises would be deferred. Standard disconnection arrangements would apply for scheduled disconnections in HFC regions after June 2018. Telstra's proposal also provided additional time to make premises serviceable prior to the commencement of managed disconnections.

On 30 May 2018 the ACCC agreed to Telstra's request to ensure that the end users were not left without a service. The ACCC also agreed to requests for further extensions from Telstra on the following two occasions:

- on 12 April 2019 the ACCC agreed to Telstra's request for an extension of regulatory forbearance by 150 business days in response to NBN Co advising Telstra that there were approximately 2 000 premises subject to the previous forbearance that were not NBN-serviceable at the time
- on 26 June 2019 the ACCC agreed to Telstra's request for a further extension of regulatory forbearance by 150 business days in response to NBN Co advising Telstra that there were approximately 300 premises subject to the previous forbearance that were not NBN-serviceable at the time.

In 2018-19 the ACCC also approved Telstra's requests for regulatory forbearance on:

- 9 January 2019 in relation to Telstra's disconnection obligations for Commonwealth Government High Security (CHS) sites to ensure that where there were difficulties in making CHS sites serviceable, those sites could remain connected to their existing services for a limited additional period⁴¹
- 16 May 2019 in relation to Telstra's atomic clock which was offered on Telstra's legacy network but was not available on the NBN. Telstra and NBN Co had decided to defer the mandatory disconnection of critical infrastructure Special Services that were dependent on the legacy atomic clock.⁴²

Continuity of service to the NBN

On 15 October 2018 Telstra noted that there is an apparent conflict with its obligations under the new ACMA Service Continuity Standard and its obligations under the Migration Plan. Telstra advised the ACCC that it will be complying with the Standard.

This accords with the 'Force Majeure' exception contained in the Telstra Migration Plan, and will provide additional assurance of service continuity for consumers who encounter difficulties with their NBN connections during the switchover period.⁴³ Services will still be subject to the Migration Plan managed disconnection process at the end of the NBN switchover period.

41 Further information on this is available on <https://www.accc.gov.au/regulated-infrastructure/communications/industry-reform/telstras-migration-plan/commonwealth-government-high-security-sites-disconnection-arrangements>.

42 Further information on this is available at <https://www.accc.gov.au/regulated-infrastructure/communications/industry-reform/telstras-migration-plan/regulatory-forbearance-for-disconnection-of-special-services-dependent-on-telstras-atomic-clock>.

43 For more information see <https://www.acma.gov.au/nbn-service-rules-telcos>.

3.5 Monitoring and reporting

Section 151BU of the CCA empowers the ACCC to make record keeping rules to require that carriers and carriage service providers provide certain information to the ACCC. The ACCC uses this information to monitor competition and market developments, and to inform regulatory decisions.

Record Keeping Rules

Internet Activity RKR

On 11 December 2018 the ACCC published the Internet Activity RKR, following consultation with stakeholders. The RKR collects information on internet activity, namely the SIO and data download volume for fixed line and mobile services in Australia on a bi-annual basis. The RKR will be a valuable source of information for the ACCC for its annual reporting on communications markets, such as this report, and regulatory decisions in general. Additionally, the outputs, which are made available on the ACCC website, will seek to inform the general public, industry, government agencies and other users about internet activity in Australia.

The ACCC's issuance of the RKR followed a decision by the Australian Bureau of Statistics to discontinue its Internet Activity Survey with the final release of data for the June 2018 reporting period in October 2018.

The ACCC implemented a two-tier approach to this RKR. The first collection or Tier 1 of collection was undertaken for the December 2018 reporting period only. On 14 May 2019 the ACCC released its first report on internet activity in Australia for the period ending 31 December 2018. The collected data included fixed broadband, mobile broadband and mobile handset services information regarding retail SIOs, estimated download speed and volume of data downloaded by access technology.

The second tier applied from the June 2019 reporting period onwards and provides a greater level of disaggregation of SIO information for NBN, non-NBN fixed and mobile services as well as data volumes by download speed tiers and access technology. On 31 October 2019 the ACCC published its Internet Activity Report for June 2019.

Dark Fibre and NBN Wholesale Aggregation RKR

On 18 February 2019 the ACCC commenced a public consultation on a proposal to undertake the collection of competitive supply and pricing data for dark fibre⁴⁴ and NBN wholesale aggregation services⁴⁵ by issuing new RKRs. The information collected under the proposed RKRs would have been used to inform the regulatory processes that fall under Part XIB and Part XIC of the CCA. On 16 May 2019 we decided not to implement the proposed RKRs, and instead continue to monitor competition in these markets as the NBN rollout continues.⁴⁶ We considered that competition in the market for NBN aggregation services was developing as the NBN rollout continued, and that this had largely addressed concerns previously raised by customers.

Digital radio access undertakings

On 18 March 2019 the ACCC released its final decision to accept three new access undertakings in relation to the commencement of Digital Radio services in Canberra, Darwin and Hobart, which it received on 30 October 2018.

The digital radio access regime allows commercial and community broadcasters (access seekers) to receive access to digital radio multiplex transmission services at reasonable terms and conditions.

⁴⁴ Dark fibre refers to unlit fibre optic cable available for use in the supply of transmission services. It is used by some service providers as an input to the supply of retail voice and broadband services.

⁴⁵ NBN wholesale aggregation services involve the supply by a service provider of NBN wholesale access services in conjunction with a service provider's wholesale transmission services. NBN aggregation services are used by smaller RSPs without the scale to make a direct NBN connection to supply retail NBN services to end-users.

⁴⁶ The ACCC's consultation paper and related submissions are available at <https://www.accc.gov.au/regulated-infrastructure/communications/monitoring-reporting/dark-fibre-and-nbn-wholesale-aggregation-record-keeping-rules/consultation-paper>.

The regime ensures licensees (who are also usually commercial broadcasters) do not discriminate anti-competitively between the access seekers. In turn this is likely to promote competition in downstream markets and provide for greater choice and quality for listeners, as well as providing greater choice for advertisers.

The ACCC's decision has resulted in digital radio service availability in Canberra, Darwin and Hobart giving the listeners in those areas greater choices.

Tariff filing

Tariff filing refers to the provision by service providers to the ACCC of certain information about changes in prices. The ACCC has general telecommunications tariff filing powers and Telstra-specific tariff filing powers under Part XIB of the CCA.

During 2018–19 Telstra appears to have fulfilled its tariff filing information requirements by providing the required information to the ACCC. This information is now also published on Telstra's retail website.

3.6 Enforcement and compliance activities

During 2018–19 the ACCC prioritised consumer issues in the provision of broadband services, and issues arising from opaque and complex pricing in the telecommunications sector. As part of this, we have revisited the broadband speed claims guidance to improve clarity, maintain currency, and apply the guidance to services supplied over fixed wireless networks.

Measuring Broadband Australia (MBA) program

In 2018–19 the ACCC continued to report quarterly under the MBA program. The reports were released on 31 July 2018, 5 November 2018, 6 February 2019 and 7 May 2019.

The program collects data on the performance of NBN fixed line services and during the year reported on the performance of major RSPs (Aussie Broadband, iiNet, My Republic, Optus, Telstra, TPG Group, Dodo, iPrimus and Exetel). The reports also provide a breakdown of speed results by all fixed line NBN technologies. Each report has sought to examine new issues and comparisons. Issues explored in reports during the year have included service outages, state by state and urban/regional comparisons as well as benchmarking results against service providers' advertised speeds.

The goal of the MBA program is to encourage greater performance-based competition. We have observed that the increased transparency provided by the MBA program has helped lift broadband performance. A key issue highlighted by the program is the existence of a significant number of services that never get close to reaching the maximum plan speed, known as underperforming services. These are largely FTTN connections with physical limitations such as long copper lengths and in-home wiring issues. We have been advocating for RSPs and NBN Co to work together to address these services to ensure that all consumers can enjoy the benefits of the higher speeds available on the NBN.

Broadband speed claims industry guidance

On 23 May 2019 the ACCC published its updated broadband speed claims - industry guidance for retailers about how to advertise broadband speed claims. The key change was extending the guidance to apply to services supplied over fixed wireless infrastructure.

By encouraging retailers to provide more accurate information to consumers, including by providing appropriate disclosures (such as any fixed wireless limitations), consumers will be able to make a more informed choice as to the particular broadband plan and service that is most appropriate for them, thereby promoting more competitive markets.

Consumer education activities

On 23 May 2019 the ACCC published a consumer guide for NBN fixed wireless customers who experience broadband performance issues. The consumer guide seeks to empower NBN fixed wireless consumers to exercise their consumer rights and seek redress from their service provider if their speeds are lower than represented. It also contains a troubleshooting guide to help consumers who are experiencing reduced speeds on their fixed wireless service.

The ACCC website also contains advice for consumers on various aspects of mobile, internet and landline communications services including choosing a service, tips on how to manage data usage and in-app purchases and what to do in the case of unauthorised transfers.⁴⁷ This section of the ACCC website also contains consumer-friendly broadband performance data from the quarterly MBA reports.⁴⁸

Anti-competitive conduct

The ACCC investigates anti-competitive conduct under both the telecommunications specific provisions (Part XIB) and general anti-competitive conduct provisions (Part IV) of the CCA. The ACCC also has a role under the Telecommunications Act in relation to a number of provisions including those concerning the NBN access to facilities and the numbering plan as set out in the Appendix 5.3.

In 2018–19 we investigated four allegations of potential contraventions of the CCA and of the Telecommunications Act specific to telecommunications markets. These included complaints of misuse of market power under the telecommunications-specific anti-competitive conduct provisions in Part XIB of the CCA.

Investigations under Australian Consumer Law

In 2018–19 the ACCC commenced fourteen in-depth investigations in the communications sector under the ACL. An additional four investigations were underway at the start of the reporting period and six ACL investigations were still ongoing as at 30 June 2019.

Litigation

Optus ordered to pay \$6.4 million for misleading NBN disconnection claims

On 29 November 2019 the Federal Court ordered Optus to pay a \$6.4 million penalty for misleading consumers in relation to the need to switch to the NBN or risk disconnection.

On 24 June 2019 the ACCC instituted proceedings against Optus, alleging it made false or misleading representations to 138 988 Optus mobile customers when it sent an email to those customers on 24 May 2018, saying that their broadband connections would be ‘disconnected very soon’ and that they needed to switch to the NBN ‘before it’s too late’.

Optus admitted that it had no basis for claiming that the recipients of the email were at risk of disconnection, since Optus understood that the recipients were already acquiring NBN services from another provider. The Court declared that Optus contravened sections 18 and 29(1)(l) of the ACL.

Optus paid \$10 million penalty in relation to third-party billing

In February 2019 the Federal Court ordered Optus to pay a \$10 million penalty for its treatment of customers who unknowingly purchased games, ringtones and other digital content through its third-party billing service.

In October 2018 the ACCC instituted proceedings against Optus, alleging it made false or misleading representations to consumers in relation to its third-party billing service known as ‘Direct Carrier Billing’. Optus admitted that the company misled consumers and breached the ASIC Act when it billed

⁴⁷ For further information see <https://www.accc.gov.au/consumers>.

⁴⁸ For further information see <https://www.accc.gov.au/consumers/internet-landline-services/broadband-performance-data>.

customers for third party-produced content which they mistakenly bought or subscribed to through its 'direct carrier billing' service.

Activ8me paid penalties for misleading conduct

In March 2019 the Federal Court ordered Australian Private Networks Pty Ltd (Activ8me) to pay penalties of \$250 000 for making false or misleading representations and not displaying a single price when advertising its internet services.

In December 2018 the ACCC instituted proceedings against Activ8me for allegedly making false or misleading representations when advertising its internet services. The ACCC alleged that between June and October 2018, Activ8me contravened the ACL when it made the false or misleading claims in three direct mail advertisements and five online banner advertisements marketing its Opticomm fibre to the premises packages. Activ8me sent thousands of advertisements with allegedly false or misleading claims about the speed, data limits and costs of its internet services.

Activ8me admitted the contravention of the ACL. The Court ordered Activ8me to offer to refund setup fees and allow affected customers to exit or switch plans without charge.

ACCC took TPG to Court regarding mobile prepayment

In December 2018 the ACCC instituted proceedings against TPG Internet Pty Ltd (TPG) for engaging in misleading conduct about a '\$20 prepayment' made by consumers, and including unfair prepayment contract terms in some of their plans.

Customers signing up to a TPG plan had to pay \$20 for what TPG describe as a 'prepayment' to cover costs that might be incurred but are not included in their plan, such as overseas phone calls. From March 2013 TPG represented on its website that the prepayment of \$20 could be used for excluded telecommunications services before the consumer cancelled their plan. However, the prepayment operates as a non-refundable fee and TPG retains at least \$10 of the prepayment when a customer cancels their plan. The ACCC also alleged TPG's standard contract term requiring forfeiture of the prepayment is unfair under the ACL.

In October 2019 the Federal Court dismissed the case, finding that representations made by TPG about prepayments customers had to make for its internet, home telephone and mobile plans were not false or misleading, and that a term in its contracts which allowed TPG to keep prepaid funds when customers exited their plans was not unfair.

The ACCC has since appealed the decision as it remains concerned that TPG misled its prepaid customers about their ability to use up their full prepayment and to obtain a refund of any unused funds when they ended their contract.

Infringement notices

MyRepublic paid penalties for NBN speed claims

On 18 July 2018 MyRepublic Pty Ltd (MyRepublic) paid penalties totalling \$25 200 following the ACCC issuing two infringement notices for alleged false or misleading representations about its NBN service performance. Between December 2017 and April 2018, MyRepublic marketed its NBN services using statements such as "up to nbn™100 Speed Tier" and "nbn™50 Speed Tier" on its website.

The ACCC was concerned that the use of the NBN speed tiers could mislead consumers to believe they would get broadband speeds of, or close to, 100 Mbps and 50 Mbps during all or almost all of the time, when that is not the case.

Administrative resolutions

Aussie Broadband removes “Congestion-free” claims from NBN advertising

In September 2018 NBN provider Aussie Broadband removed statements across its advertising which described its broadband services as “congestion-free” in response to concerns raised by the ACCC. The ACCC was concerned that Aussie Broadband’s statements might lead consumers to believe that Aussie Broadband’s services would not ever experience congestion, when that was not the case.

Congestion occurs in broadband networks when demand from users exceeds available capacity. This results in slower speeds for customers. Customers are most likely to experience congestion in peak times, between 7 pm and 11 pm, when many households are trying to use services at the same time.

Court enforceable undertakings

The following telecommunications related undertaking was finalised under section 87B in 2018–19.

Dodo Services gave an undertaking regarding its ‘perfect for streaming’ claims

On 9 July 2019 the ACCC accepted a court enforceable undertaking from Dodo Services Pty Ltd (Dodo) in relation to claims that certain retail broadband plans supplied over the NBN were ‘perfect for streaming’ when that was not the case. Dodo admitted the ‘perfect for streaming’ statements were likely to contravene sections 18, 29 and 34 of the ACL and agreed to refund up to \$360 000 to 16 000 affected customers.

3.7 Merger, authorisation and third line forcing reviews

The ACCC’s activities in relation to communications-related merger reviews, exclusive dealing notifications and authorisations under the CCA.

Mergers

The ACCC reviews mergers and acquisitions to assess whether they would be likely to substantially lessen competition. More information about mergers that the ACCC has reviewed is available on the ACCC’s mergers registers.⁴⁹

During 2018–19 the ACCC assessed two communications-related mergers under the public informal merger review process.

TPG Telecom Limited proposed merger with Vodafone Hutchison Australia Pty Ltd

On 8 May 2019 the ACCC announced that it decided to oppose the proposed merger between TPG and VHA.

The ACCC considered the proposed merger would reduce competition and contestability in this sector. In particular, the ACCC considered the proposed merger would be likely to substantially lessen competition in the supply of mobile services because the proposed merger would preclude TPG entering as the fourth mobile network operator in Australia.

The ACCC considered that TPG has the capability and commercial incentive to resolve the technical and commercial challenges it is facing with rolling out its mobile network. TPG already has mobile spectrum, an extensive fibre transmission network which is essential for a mobile network, a large customer base and well-established telecommunications brands.

The ACCC has the view that, wherever possible, market structures should be settled by the competitive process, not by a merger which results in a market structure that would be subject to little challenge in the future. Consumers need vigorous competition in order to obtain the aggressive pricing and innovation that is in their interest.

⁴⁹ The ACCC’s Mergers registers are available at <http://registers.accc.gov.au/content/index.phtml/itemId/750991>.

On 24 May 2019 VHA instituted proceedings in the Federal Court seeking a declaration that the proposed merger would not be likely to have the effect of substantially lessening competition. The matter was heard in the Federal Court in September 2019 with the decision expected in early 2020.

Mobile JV Pty Limited

On 21 September 2018 the ACCC accepted an undertaking from Mobile JV Pty Limited in connection with the proposed merger of TPG Telecom Limited (TPG) and Vodafone Hutchison Australia Pty Limited (VHA) and the joint venture between TPG and VHA.

The joint venture intended to acquire, hold and allocate the 3.6 gigahertz spectrum. In addition, TPG and VHA proposed to negotiate expanding the business of the joint venture in the future, including to acquire future spectrum licences and/or facilitate various forms of efficient spectrum and network sharing including a shared 5G Radio Access Network.

The ACCC was concerned to ensure the core existing operations of TPG and VHA were managed and maintained independently of each other while the ACCC conducted a review of the proposed merger. The undertaking is not an approval or authorisation of the joint venture in any way.

Nine Entertainment Co Holdings Limited merger with Fairfax Media Limited

On 8 November 2018 the ACCC announced it would not oppose the proposed merger between Nine Entertainment and Fairfax Media.

The ACCC examined a number of markets affected by this proposed merger including online news, current affairs reporting and investigative journalism and in particular whether the merger would substantially lessen competition in the creation and provision of Australian news content.

The ACCC considered that while the merger raised a number of complex issues, and will likely reduce competition, the proposed merger was not likely to substantially lessen competition in any market in breach of the CCA.

Authorisations

Under the ACCC's authorisation and notification review function, we also review and make decisions about applications for authorisation and/or notification for arrangements or conduct (including proposed mergers) that may otherwise breach competition law. We do this primarily by evaluating whether the arrangements or conduct are likely to result in a net public benefit. With the revisions to the CCA which came into effect on 6 November 2017, we may now also grant authorisation for certain forms of conduct if we are satisfied that no substantial lessening of competition is likely.

In 2018-19 the ACCC did not receive any communications-related authorisation applications.

Exclusive dealing notifications

Notification is an alternative to authorisation for certain arrangements such as exclusive dealing. Like authorisation, the notification process provides protection from legal action under the CCA if the conduct is in the public interest.

With the revisions to the CCA which came into effect on 6 November 2017, third line forcing (a particular form of exclusive dealing) is no longer a per se breach of the CCA. This means that parties need only notify the ACCC of third line forcing conduct if it is at risk of substantially lessening competition. This has meant that the number of notifications received by the ACCC has decreased significantly since the revisions came into effect.

In 2018-19 the ACCC did not receive any notifications of exclusive dealing involving participants in the communications industry.

3.8 Advice, advocacy and contributions to policy processes

ACCC submissions to policy processes

During 2018–19 the ACCC made a number of submissions to policy processes and participated in a number of working committees relevant to the telecommunications industry. These included:

- Utility Regulators Forum
- Infrastructure Consultative Committee
- Quarterly Regulators Roundtable
- Consumer Roundtable
- Australasian Consumer Fraud Taskforce
- Engagement with the ACMA's Consumer Consultative Forum.

Submissions and input were made to the following processes:

- Telecommunications Consumer Protection Code review
- Regional Telecommunications Review
- Consumer Safeguards Review
- New Radiocommunications Act (Radcomms Reform Project)
- ACMA rules for NBN migration.

ACCC submission to draft five year spectrum outlook 2019–23

The ACCC made a submission to the ACMA on the draft five year spectrum outlook (FYSO) 2019–23 on 27 May 2019.

The ACCC in principle supported the FYSO as it could be an effective planning tool for spectrum management. The ACCC considers that spectrum management and allocation should create an environment where the competitive process can develop, and rely on that process to deliver better outcomes for consumers, such as better quality networks, improved coverage and lower prices.

Spectrum planning decisions have a significant influence on competition in downstream markets as the use of spectrum in an efficient and competitive way is fundamental to future growth and development of a range of services and applications across different markets.

Access to spectrum is critical to the ability of operators to provide wireless services and compete effectively in downstream markets, and as such is both an enabler and a barrier to entry in wireless markets.

Digital platforms inquiry

The final report of the digital platforms inquiry was provided to the Treasurer on 30 June 2019 and released on 26 July 2019. The report identified a number of adverse effects associated with digital platforms including:

- the market power of particular digital platforms and their ability to adversely impact media and advertising markets and a range of other markets
- the opacity of digital advertising markets which have highly uncertain money flows, particularly for automated and programmatic advertising
- consumers are not adequately informed about how their data is collected and used and have little control over the huge range of data collected
- news content creators are often reliant on the dominant digital platforms, yet face difficulties in monetising their content
- Australian society, like others around the world, has been impacted by disinformation and a rising mistrust of news.

The final report contains 23 recommendations spanning competition law, consumer protection, media regulation and privacy law, reflecting the intersection of issues arising from the growth of digital platforms. In particular, the ACCC made a series of recommendations to address the digital platforms' impact on Australian media businesses and how Australians access news.

4. Communications sector market study follow-ups

In April 2018 the ACCC concluded its 18 month-long study into the Australian communications sector with the release of its final report.⁵⁰ The final report contained 28 recommendations and actions on competition and consumer issues in the sector.

The ACCC has progressed a number of the actions proposed in the final report, both as discrete initiatives as well as part of broader regulatory processes. This section highlights some of the outcomes of further work the ACCC has undertaken on discrete issues identified during the market study.

4.1 Internet interconnection

Internet services depend on the exchange of traffic between internet service providers (ISPs) (that is, interconnection between ISPs) to ensure any-to-any connectivity⁵¹ and that Australians have access to content and services connected to different ISPs. Peering is an arrangement between ISPs to directly connect to another network in order to exchange internet traffic, often without payment being exchanged. Optus, Telstra, and TPG Group have long-established peering relationships with each other (and Verizon). Smaller ISPs do not have access to these peering arrangements but rather acquire a wholesale service to exchange traffic with them, known as ‘transit’, in order to provide their customers with access to these networks.

Gaining peering with other networks enables carriers to provide more competitive wholesale ‘transit’ services to other ISPs, which should have positive impacts in downstream markets.

In the communications sector market study issues paper, the ACCC noted long standing concerns about internet interconnection arrangements in Australia and the potential for smaller service providers to be disadvantaged due to their exclusion from the larger ISPs’ peering arrangements.⁵²

In the final report of the market study⁵³ the ACCC identified concerns that the static peering arrangements in Australia appeared to be resulting in weak competitive incentives in relation to the supply of transit to smaller ISPs. As a result, the ACCC committed to further assessing interconnection arrangements and their impact on downstream markets. The ACCC also recommended that the large ISPs publish the criteria to which they have regard when assessing peering requests from other ISPs (‘peering criteria’).

In October 2018 the ACCC published an update on its assessment of internet interconnection arrangements in Australia.⁵⁴ The ACCC noted that Optus, Telstra, and TPG Group had recently published their peering criteria.

The ACCC also welcomed the agreement between Telstra and Vocus Group to enter into a peering arrangement, noting that it should improve the ability of Vocus Group to provide competitive wholesale transit services to other ISPs.

The ACCC concluded that these developments should boost competition in the supply of internet connectivity (transit) and that further regulatory action was not warranted at that time.

50 ACCC, *Communications sector market study final report*, 5 April 2018, available at <https://www.accc.gov.au/publications/communications-sector-market-study-final-report>.

51 That is, that users on one network can communicate with users on any other network.

52 ACCC, *Competition in evolving communications markets—Issues Paper*, September 2016, p.50, available at <https://www.accc.gov.au/system/files/Comms%2520Market%2520Study%2520-%2520Issues%2520Paper%2520-%2520September%25202016.pdf>.

53 ACCC, *Communications sector market study final report*, 5 April 2018, pp. 71-76, available at <https://www.accc.gov.au/publications/communications-sector-market-study-final-report>.

54 ACCC, *Internet interconnection update*, 23 October 2018, available at <https://www.accc.gov.au/regulated-infrastructure/communications/internet-interconnection/accc-assessment-of-internet-interconnection-arrangements/internet-interconnection-update>.

4.2 e-SIMs

An e-SIM is an alternative to existing physical SIM card technology. Unlike physical SIM cards, e-SIMs are embedded in the device, and can hold multiple mobile service provider profiles, which enable consumers to switch between operators without physically changing the SIM.

e-SIM technology has the potential to greatly increase competition and consumer choice in the mobile telecommunications market. e-SIMs can reduce barriers for consumers to switch between mobile service providers and have the potential to improve the competitive position of MVNOs and alternative service providers. e-SIMs may also enable new use cases, such as switching dynamically between two mobile service providers to take advantage of the best rates/coverage, and making it easier for consumers to procure a local SIM when travelling overseas.

During the communications sector market study, the ACCC observed that e-SIM support was only available in Australia through MNOs, and no Australian MVNOs offered e-SIM support (which is still the case). In this regard, the ACCC identified a concern that competition between mobile service providers in the offering and use of e-SIM devices could potentially be impeded by the need to enter commercial agreements with device manufacturers. In the final report of the market study⁵⁵ the ACCC undertook to explore concerns associated with e-SIMs that may restrict competition between service providers.

In December 2019 the ACCC published an update on its assessment of potential competition issues regarding e-SIMs in Australia.⁵⁶ Our assessment did not find evidence of device manufacturer restrictions operating as a significant barrier to enabling MVNO access to e-SIMs. Rather, information obtained by the ACCC through market enquires suggests that delay in MVNO support for e-SIMs is primarily due to the need for investment in IT platforms for MVNO use, which MNOs and MVNOs need to work together to develop.

The ACCC considers that the lack of MVNO access to e-SIMs creates two competition concerns:

- MVNOs are unable to sell cellular connectivity on e-SIM only devices (and in practice sell the devices themselves). This concern is largely theoretical at this stage because there are no e-SIM only devices currently on sale other than wearables and, for those devices, cellular connectivity is not available on a standalone basis.
- MVNOs are unable to sell any mobile phone services (including the handsets themselves) to consumers who wish to use an e-SIM wearable device in conjunction with their mobile handset. This inhibits an MVNO's ability to compete against MNOs in the provision of mobile services to those customers who wish to use an e-SIM enabled wearable device, thereby limiting consumer choice.

The ACCC also identified concerns in the potential for MNOs to implement e-SIMs in a way that impacts consumers' ability to switch between service providers. In this regard, the ACCC notes that the GSMA (a trade body that represents the interests of MNOs worldwide) has developed e-SIM specifications that include policies that allow an MNO to elect to limit switching or lock devices.⁵⁷ As SIM locking is largely no longer practiced by MNOs in Australia for physical SIMs, the ACCC would not expect Australian MNOs to activate such functionality in e-SIMs.

In terms of activating e-SIM profiles, Australian MNOs currently use the QR code⁵⁸ method, which, in practice, limits the ease by which a consumer can switch mobile service providers. For example, both Telstra and Optus require a consumer to physically procure the QR code, either from a store or via the post, which is a similar process to switching with physical SIMs. The ACCC anticipates Australian mobile service providers will move towards app-based solutions as e-SIMs become more widespread.

⁵⁵ Action 20—ACCC, *Communications sector market study final report*, 5 April 2018, available at <https://www.accc.gov.au/publications/communications-sector-market-study-final-report>.

⁵⁶ ACCC, *ACCC assessment of competition concerns relating to e-SIMs*, 2 December 2019, available at <https://www.accc.gov.au/system/files/ACCC%20assessment%20of%20competition%20concerns%20relating%20to%20e-SIMs.pdf>.

⁵⁷ GSMA, e-SIM specification, available at <https://www.gsma.com/esim/esim-specification/>.

⁵⁸ A QR code is a machine-readable barcode.

The ACCC will continue to keep a close watch on the support for, and implementation of, e-SIM technology to ensure the competitive benefits are realised and that competition is not hindered.

4.3 Communications comparison tools

In our final report we committed to reviewing the scope, transparency and ease of use of comparator websites for communications services and consider the need for further intervention in addition to our existing guidance for comparator sites.⁵⁹ While recognising the many benefits to consumers from using these tools, the final report identified a number of potential issues including comparator websites failing to disclose commercial relationships with suppliers and the extent of their market coverage.

During 2019 we took forward this action and conducted market inquiries with major communications comparators, industry bodies and service providers. We also reviewed the websites of each comparator and reviewed information we held from complainants and related enforcement work. We focused on understanding the business models used by comparators, the level of disclosure of commercial relationships, market coverage and the adequacy of information provided. We also considered whether comparators were following the ACCC's comparator website guidance⁶⁰ and were acting consistently with the ACL.

Our assessment following this review was that communications comparators are functioning fairly well and most comparators operate as useful tools for consumers to compare a range of market offers and operate consistently with the ACCC's comparator website guidance. We also found that stakeholders were relatively satisfied with how comparators operated and the role they played in the market.

However, we are following up a small number of comparators concerning their presentation of sponsored products in organic search results.

While we did not find any conduct that required broader intervention across all communications comparators, we are encouraging them to follow the ACCC's broadband speed claims guidance when presenting key information for different NBN plans. In particular, listing typical evening speeds prominently to allow consumers to make more informed comparisons without having to refer to additional information from RSPs.

We intend to continue monitoring the role and operation of comparator websites and engage as necessary.

⁵⁹ Action 10—ACCC, *Communications sector market study final report*, 5 April 2018, p. 10, available at <https://www.accc.gov.au/publications/communications-sector-market-study-final-report>.

⁶⁰ For further information see <https://www.accc.gov.au/publications/comparator-websites-a-guide-for-comparator-website-operators-and-suppliers>.

5. Appendices

5.1 Access to telecommunications services

Declarations

Under Part XIC of the *Competition and Consumer Act 2010* (the CCA), a carriage service, or service that facilitates the supply of a carriage service, can be declared. Once a service is declared, an access seeker can then obtain access to that service. There is no general right of access without declaration. A telecommunications service can be declared if:

- the ACCC declares a service after holding a public inquiry
- the ACCC accepts a special access undertaking (SAU) for the service, or
- in the case of a service supplied by NBN Co—NBN Co publishes a standard form of access agreement (SFAA) relating to access to the service on its website.

Providers of declared services must comply with certain access obligations, including a requirement to supply the service on request and to provide interconnection or access to facilities.

There are currently 11 declared services under Part XIC (excluding NBN services). The table below describes each of these services.

Declared telecommunications services as at 30 June 2019

Service	Description	Duration
Wholesale asymmetric digital subscriber line (ADSL)	A point-to-point service that allows access seekers to provide a broadband ADSL internet service to a customer using Telstra's equipment.	13 February 2017 to 13 February 2022
Local carriage service (LCS)	A service that carries local telephone calls from one end user to another. Access seekers use the service to resell local calls.	1 August 2014 to 31 July 2019 ⁶¹
Fixed originating access service (FOAS)	Allows a customer of a retail service provider that does not have its own fixed line network to make a telephone call on another service provider's network (pre-selection and override). The FOAS does not include pre-selection and override services for telephone calls provided over the NBN.	1 August 2014 to 31 July 2019
Fixed terminating access service (FTAS)	Allows a customer who is provided a fixed line phone from one retail service provider to receive a call from a person using another service provider's network.	1 August 2014 to 31 July 2019
Wholesale line rental (WLR)	Allows an access seeker to rent an active copper line from an access provider and on-sell the rented line to customers. When bundled with other services (such as the LCS and FOAS pre-selection and override), WLR allows access seekers to provide customers with a fixed voice service package to make local, national, long-distance, international and fixed to mobile telephone calls.	1 August 2014 to 31 July 2019

⁶¹ On 26 November 2018 the ACCC concluded a review of six fixed line service declarations (LCS, FOAS, FTAS, WLR, LSS and ULLS) by extending them for a further five years. The new declarations have an expiry date of 30 June 2024. The ACCC decision is available at <https://www.accc.gov.au/regulated-infrastructure/communications/fixed-line-services-declaration-inquiry-2018/final-decision>.

Line sharing service (LSS)	A service for access to the non-voice frequency spectrum of unconditioned wire between a customer and a telephone exchange. It allows access seekers to provide broadband services to customers using their own equipment, if the customer has an active voice service.	1 August 2014 to 31 July 2019
Unconditioned local loop service (ULLS)	A service for access to the unconditioned wire between a customer and a telephone exchange. It allows an access seeker to provide voice and broadband services to customers using their own equipment.	1 August 2014 to 31 July 2019
Mobile terminating access service (MTAS)	A service provided by a mobile network operator to fixed line operators and other mobile network operators to connect and terminate a voice call on its mobile network.	1 July 2014 to 30 June 2019 ⁶²
Domestic transmission capacity service (DTCS)	A wholesale only point-to-point high capacity service used for the transmission of communications traffic (such as voice, data or video).	1 April 2019 to 31 March 2024
Local bitstream access service (LBAS)	A point-to-point superfast carriage service used to carry communications in digital form between a point of interconnection and an end customer. It is a non-NBN fixed network service capable of offering download speeds of 25 Mbps or more that was built or extended more than 1 km since 1 January 2011 (unless exempted).	The declaration took effect on 13 April 2012. It does not expire.
Superfast broadband access service (SBAS)	A point-to-point superfast carriage service used to carry communications in digital form between a point of interconnection and an end customer. It is a non-NBN fixed network service capable of offering download speeds of 25 Mbps or more, or a Fibre Access Broadband service with maximum download speeds of 30 Mbps or 100 Mbps, that is not captured or exempted from the LBAS declaration (unless otherwise exempted from the SBAS declaration).	29 July 2016 to 28 July 2021

Access determinations

Under Part XIC of the CCA, parties are free to negotiate the terms and conditions of access to declared services. Where parties are unable to agree on the terms and conditions of access, an access seeker can rely on the regulated terms set by the ACCC in an access determination. An access determination contains a base set of price and non-price terms and conditions of access to a declared service. Where there are inconsistencies between a commercial agreement (access agreement) and an access determination, the terms and conditions in the access agreement will prevail over the regulated terms and conditions set by the ACCC.

The ACCC must undertake a public consultation process (public inquiry) before making a final access determination (FAD).

Binding rules of conduct

The binding rules of conduct (BROC) are rules that specify the terms and conditions relating to compliance with the standard access obligations. Under section 152BD of the CCA, the ACCC can, where it considers there is an urgent need to do so, make a BROC. BROCs can also specify the manner in which a carrier or carriage service provider must comply with any or all the standard access obligations. The maximum duration of a BROC is 12 months.

5.2 NBN and non-NBN superfast services regulatory frameworks

The ACCC has a number of responsibilities in the regulation of the NBN as well as the non-NBN superfast declared services such as SBAS and LBAS under Part XIC of the CCA. We have a role in determining the terms and conditions of access to services provided over the NBN, including through

⁶² On 28 June 2019 the ACCC concluded its review into the MTAS declaration and decided to extend the declaration of voice MTAS for a further five years and remove the declaration of SMS MTAS after a transition period of six months. The new declaration has an expiry date of 30 June 2024. The ACCC decision is available at <https://www.accc.gov.au/regulated-infrastructure/communications/mobile-terminating-access-service-declaration-inquiry-2018/final-report>.

special access undertakings and access determinations. We also publish and maintain explanatory material about the non-discrimination obligations that apply to NBN Co.

Points of interconnection

An NBN point of interconnection (POI) is the physical location that allows retail service providers and wholesale service providers to connect to the NBN. In 2012 the ACCC published a list of POIs under section 151DB of the CCA. This list is available on our website.⁶³

By end of June 2019, there were at least eight access seeker groups acquiring wholesale services directly from NBN Co at all of the 121 NBN POIs nationwide, with at least nine groups at 120 POIs and at least 10 at 115.

Non-discrimination provisions

NBN Co and providers of layer 2 bitstream services over designated superfast telecommunications networks are subject to certain non-discrimination obligations. In general, these providers must not discriminate:

- between access seekers in complying with their standard access obligations
- between access seekers in the carrying on of activities related to the supply of declared services, and
- in favour of themselves in the supply of declared services.⁶⁴

The ACCC has a role in enforcing the non-discrimination provisions under both the CCA and the *Telecommunications Act 1997* (Telecommunications Act). The ACCC can seek orders from the Federal Court under section 152BB(1AA) of Part XIC of the CCA.

Level playing field provisions

Non-NBN networks capable of supplying a superfast carriage service, wholly or principally to residential or small business customers, must not be used unless:

- a layer 2 bitstream service is available for supply, and
- services supplied on the network are supplied on a wholesale-only basis.

These provisions only apply to services supplied over superfast networks built, extended, altered or upgraded since 1 January 2011. The provisions do not apply to services provided over wireless, satellite or NBN networks. There are also a number of statutory and Ministerial exemptions from the level playing field provisions. The intent of these 'level playing field' provisions is to ensure that non-NBN networks capable of supplying a superfast carriage service operate on a similar basis to NBN networks.⁶⁵

5.3 Telstra's structural separation and other Telecommunications Act provisions

Telstra's Structural Separation Undertaking

Telstra's structural separation undertaking (SSU) implements structural separation of Telstra through the migration of end-users to the NBN. The SSU outlines how Telstra will progressively stop supplying telephone and broadband services over its copper and HFC networks and commence supplying these services over the NBN.

⁶³ ACCC, NBN Points of Interconnect POIs, 13 December 2013, <https://www.accc.gov.au/publications/nbn-points-of-interconnection>.

⁶⁴ Sections 152ARA and 152AXC of the CCA.

⁶⁵ The level playing field provisions are set out in Parts 7 and 8 of the Telecommunications Act.

The SSU contains interim equivalence and transparency measures, which require Telstra to supply regulated services to its wholesale customers and own retail business units on equivalent terms. This is to promote competition until the NBN is completed. The measures also require Telstra to identify and take steps to address any instance of non-equivalence.

On 27 February 2012 the ACCC accepted Telstra's SSU. The SSU commenced on 6 March 2012.⁶⁶ The SSU contains four key elements:

- a commitment by Telstra to cease the supply of fixed line carriage services using telecommunications networks over which Telstra is in a position to exercise control from the Designated Day—which is expected to be the day on which the construction of the NBN will be concluded
- interim equivalence and transparency obligations regarding access to Telstra's regulated services in the period leading up to the Designated Day
- compliance monitoring processes, to provide the ACCC with transparency over Telstra's compliance with the SSU, and
- the Migration Plan⁶⁷, which forms part of the SSU. The Migration Plan sets out how Telstra will progressively transfer its fixed line customers onto the NBN.

Reporting obligations under the SSU

Telstra has reporting obligations under the SSU that require it to provide the ACCC with reports from its financial reporting management systems. These reports facilitate the ACCC's ongoing monitoring of Telstra's compliance with its SSU and comprise:

- A confidential monthly compliance report on any "equivalence issues" that have been identified by Telstra or reported to Telstra by the ACCC or wholesale customers.⁶⁸
- A confidential annual compliance report, which includes details of equivalence issues identified by Telstra or reported to Telstra by the ACCC or wholesale customers. This report also states the matters that Telstra has identified as breaches of its SSU obligations.
- Quarterly public operational equivalence reports, which outline Telstra's performance against 33 equivalence and transparency metrics. A confidential version of these reports provides a reasonably detailed explanation of any variances in the metrics above two percentage points.
- Six-monthly public and quarterly confidential Telstra Economic Model reports outlining the list of internal wholesale prices and external wholesale prices.

In addition to Telstra's reporting obligations, the ACCC may detect non-compliance in other ways such as directly receiving complaints from wholesale customers or through the ACCC's own independent monitoring.

Pursuant to section 105C of the Telecommunications Act, the ACCC monitors and reports to the Minister for Communications, Cyber Safety and the Arts on Telstra's compliance with its SSU obligations each year.⁶⁹ The ACCC has streamlined this report in recent years due in part to Telstra's improved compliance with its SSU obligations.

Migration Plan

The Migration Plan outlines how Telstra will progressively migrate voice and broadband services from its copper and HFC networks to the NBN as the new network is rolled out. On 27 February 2012 the ACCC

⁶⁶ Further information on Telstra's structural separation undertaking is available from the ACCC website at <https://www.accc.gov.au/regulated-infrastructure/communications/industry-reform/telstras-structural-separation-undertaking>.

⁶⁷ The information on migration plan and subsequent variations to the migration plan is available at <https://www.accc.gov.au/regulated-infrastructure/communications/industry-reform/telstras-migration-plan/telstras-migration-plan>.

⁶⁸ An "equivalence issue" means a possible breach of clause 9.1 of the SSU. These provisions ensure that there is equivalence in relation to the supply of Regulated Service to Telstra's Wholesale Customers and Telstra's Retail Business Units.

⁶⁹ ACCC issues an Annual Compliance Report under Telstra's SSU. The reports are available on the ACCC website at <https://www.accc.gov.au/publications/telstras-structuralseparation-undertaking>.

approved Telstra's draft Migration Plan which commenced on 7 March 2012. Since then there has been a number of variations to the original migration plan chiefly to accommodate unanticipated issues that have arisen as migration has progressed.

Replacement required measures

Telstra's Migration Plan requires Telstra to develop, and provide to the ACCC, six 'required measures' that relate to the operating processes it will follow when disconnecting customers from its copper and HFC networks.

Other activities under the Telecommunications Act

Access to facilities

Under the Telecommunications Act access providers must give other communications providers access to certain telecommunications facilities for them to install their own equipment.

Access disputes

While the ACCC no longer has an arbitration role under the CCA, the ACCC continues to have a role arbitrating disputes under the Telecommunications Act where the parties fail to agree on the appointment of an arbitrator. The ACCC can arbitrate disputes about access to certain facilities and the provision of pre-selection and number portability. The ACCC has also made a code relating to access to certain telecommunications facilities under the Telecommunications Act.⁷⁰ This is currently under review.

Numbering Plan

The ACCC is a member of the Australian Communications and Media Authority's (ACMA) Numbering Advisory Committee and actively engages with the ACMA about numbering issues. The ACMA is responsible for developing and administering a numbering plan, which may include rules about number portability. The numbering plan sets out the framework for the numbering of carriage services in Australia and the use of numbers in connection with the supply of these services.⁷¹

Number portability

Number portability allows consumers to change their service provider and retain the same telephone number. The ACMA can only include rules about number portability in the numbering plan if directed to do so by the ACCC. Any rules the ACMA includes about number portability must be consistent with ACCC directions. The ACCC has previously directed the ACMA to include rules in the numbering plan regarding local number portability, free phone and local rate number portability, and mobile number portability. The ACMA's Numbering Plan 2015 includes rules consistent with the ACCC's number portability directions.

Report on international rules of conduct

Division 3 of Part 20 of the Telecommunications Act sets out a mechanism for the government to deal with unacceptable conduct by international operators. An international telecommunications operator is considered to be engaging in unacceptable conduct if it:

- uses its market power in a manner that is, or is likely to be, contrary to the national interest
- uses any legal rights or legal status that it has as a result of foreign laws in a manner that is, or is likely to be, contrary to the national interest, and
- engages in any other conduct in a manner that is, or is likely to be, contrary to the national interest.

The Minister for Communications, Cyber Safety and the Arts is empowered by the Telecommunications Act to make rules of conduct to prevent, mitigate or remedy any unacceptable conduct by an international telecommunications operator. The Minister introduced such rules in 1997, which:

⁷⁰ ACCC, Facilities access code, final decision, 2013.

⁷¹ Part 22, Division 2 of the Telecommunications Act.

- authorise the ACCC to make determinations of a legislative nature, imposing requirements, prohibitions or restrictions on carriers or carriage service providers
- authorise the ACCC to give directions to carriers or carriage service providers of an administrative nature that impose requirements, prohibitions or restrictions
- require carriers and carriage service providers to comply with ACCC determinations and administrative directions, and
- authorise the ACCC to make information available to the public, a specified class of persons or a specified person.

The ACCC did not conduct any investigations into unacceptable conduct by an international carrier during 2018–19.

5.4 Record keeping rules

The table below sets out all communications related record keeping rules (RKR) in operation as at 30 June 2019.⁷²

RKRs in operation as at 30 June 2019

RKR	Information collected	Rationale	Reporting period and disclosure
Broadband Performance Monitoring and Reporting	NBN Co to report certain information about the Superfast Carriage Services provided to residential customers who have volunteered to be active participants in the ACCC's Measuring Broadband Australia (MBA) program.	To assist the ACCC in validating and reporting of anonymised service information.	Quarterly. The ACCC publishes quarterly reports under the MBA program
Audit of Telecommunications Infrastructure Assets	Specified carriers must report on the location of their core network and Customer Access Network (CAN) infrastructure.	To provide the ACCC with a consistent and coherent infrastructure database to inform regulatory decisions.	Annually. The ACCC publishes aggregated data on a periodic basis.
Building Block Model	Telstra must provide data on actual usage and historical asset values. It must also provide forecast data on service demand, operating expenditure and capital expenditure.	The ACCC uses this data in the Fixed Line Services Model which is used to determine prices for the regulated fixed line services.	Annually. Other required data—at the ACCC's request and at the start of a price review prior to each regulatory period. The ACCC makes the information available in accordance with a disclosure notice. ⁷³

⁷² Further details of these record keeping rules can be found on the ACCC website at <https://www.accc.gov.au/regulated-infrastructure/communications/monitoring-reporting/telecommunications-reports-record-keeping-rules#record-keeping-rules>.

⁷³ The ACCC gave Telstra a disclosure notice regarding the RKR information provided as part of the inquiry into making final access determinations for the fixed line services. The disclosure notice provides that the ACCC will publish a public version of the RKR information and establishes confidentiality arrangements for full disclosure of the RKR information to access seekers.

Division 12	Specified carriers must report on the retail prices charged for certain services including fixed line voice, mobile and internet services. Carriers must also provide data on revenue and usage, which enable the ACCC to calculate price movements.	To provide information that enables the ACCC to report annually, as required, to the Minister for Communications, Cyber Safety, and the Arts on the changes in the prices paid for telecommunications services in Australia (the Division 12 Report).	Annually. No direct public disclosure. However, the ACCC's annual Communications Market Report contains estimated price indices for telecommunications services based on this RKR data.
NBN Services in Operation ⁷⁴	NBN Co must provide information on the take-up of NBN access services, the amount of capacity being acquired and the average utilisation of that capacity over the NBN.	To allow the ACCC to monitor the rate and level of take-up of different NBN services, assess competition as it develops on the NBN and to inform regulatory decisions.	Quarterly. NBN Co must provide a quarterly NBN wholesale market indicators report containing certain data collected under the RKR for publication.
Telstra CAN	Telstra must provide information on the number of retail and wholesale services in operation on its network. This data is disaggregated by exchange service areas and access seekers.	To allow the ACCC to analyse competition and industry trends in telecommunications markets.	Quarterly. No public disclosure of the data but Telstra provides a summary of the quarterly results for publication.
Internet Activity	Specified carriers must provide information on the volume of data downloaded by access technology and estimated download speeds for NBN, non-NBN fixed and mobile services as well as data volumes by download speed tiers and access technology.	To inform the regulatory processes that fall under Part XIB and Part XIC of the CCA and to report to the Minister for Communications, Cyber Safety and the Arts on competitive safeguards within the Australian telecommunications industry under the CCA.	Bi-annually. No public disclosure, however the ACCC releases aggregate level internet activity metrics periodically on its website.

5.5 Price monitoring methodology: calculating real changes in weighted average prices through a 'plan matching' approach

The 2018–19 report uses a 'plan matching' approach to calculate real changes in average prices. This is the same approach used in the 2017–18 report. However, due to minor error corrections in the input dataset and slight changes to the product features that determine like-for-like plans, some results differ from those previously published.

Other refinements include changes to bill sample and revenue calculations. Bill samples and revenue results are drawn from the Division 12 RKR and are used to weight results to better reflect consumer behaviour and market structure.

Each plan as a bundle of characteristics

When measuring price changes for telecommunications services, ideally, like-for-like comparisons would be made between similar products. However, this is complicated by the heterogeneous, complex nature of telecommunications services. That is, these services are sold as plans which dictate that, for a given price, consumers will receive certain:

- quantities of services (e.g. data allowances, call inclusions)

⁷⁴ The ACCC extended the NBN SIO RKR for a further three years until September 2020 and amended the RKR to include more detailed information in 2017–18.

- qualities of services (e.g. speed)
- conditional or per unit charges (e.g. call rates)
- contract conditions (e.g. length, minimum term).

The markets for fixed and mobile telecommunications services are each comprised of a range of plans from retail service providers that differ across both price and non-price characteristics. These differentiated plans have varying degrees of substitutability, as consumers make trade-offs between the characteristics in order to maximise value according to their own preferences. Changes in non-price characteristics over time can make it difficult to compare products from different time periods. Given that there are several characteristics that define each plan (and hence, its value to a consumer), the ACCC has conceptualised telecommunications service plans as a collection, or bundles, of characteristics that are valued by consumers.

Comparing categories of service plans

The ACCC chose to focus its analysis on retail service plans on offer (as opposed to aggregated revenue or end user consumer data), in order to better account for the changes in non-price characteristics. This allowed for a method that is well suited to the nature of the products and markets, the available data, and the objective of estimating year-on-year price changes.⁷⁵ The method used in the 2018–19 report involves classifying service plans into product categories; calculating the average price for a given product category in a given year; and comparing those average prices between years. Categories were set according to the following characteristics:

- for broadband plans, by RSP, data allowance (split into classes), NBN or non-NBN, download speed, the bundling of voice and entertainment packages, specific call inclusions (unlimited local, unlimited national and/or unlimited mobile) and specific access circumstances (HFC, off-net, ADSL, Velocity, fixed wireless)
- for post-paid mobile plans, by RSP, contract length, data allowance (split into classes), unlimited calls, and unlimited SMS inclusions
- for prepaid mobile plans, by RSP, data allowance (split into classes), unlimited calls, and unlimited SMS inclusions, and
- for mobile broadband plans, by RSP, contract length, prepaid and data allowance (split into classes).

The price comparisons for each product category are then aggregated in order to calculate the average price change for NBN fixed broadband, non-NBN fixed broadband, post-paid mobile, prepaid mobile, and mobile broadband services.

An example of a matching plan (with a limited selection of matching variables shown).

	2017–18: Plan Y	2018–19: Plan Y
Price	\$70	\$59
RSP	RSP Y	RSP Y
Data allowance	500 GB	500 GB
NBN/non-NBN	NBN	NBN
Download speed tier	25 Mbps	25 Mbps
Percent change in price		-18.6%

An example of a non-matching plan (with a limited selection of non-matching variables shown).

	2017–18: Plan X	2018–19: Plan X
Price	\$89	\$80
RSP	RSP X	RSP X

⁷⁵ For examples of hedonic approaches, see Triplett, J (2004), *Handbook on Hedonic Indexes and Quality Adjustments in Price Indexes: Special Application to Information Technology Products*, OECD Science, Technology and Industry Working Papers, 2004/09.

Data allowance	100 GB	500 GB (the smallest available plan)
NBN/non-NBN	NBN	NBN
Download speed tier	50 Mbps	50 Mbps
Percent change in price		n/a

Relevance of price changes to consumers

While the ACCC has focused its analysis on service plans in order to better account for non-price characteristics, it also sought to produce estimates of price changes that would reflect the perspective of consumers. As such, price changes were adjusted to reflect consumer spending behaviour and inflation. The range of plans available in each of the telecommunications service markets suggests a wide range of consumer preferences and/or willingness to spend.

The ACCC assumes that consumer preferences are segmented by levels of monthly expenditure. This assumption implies that price changes that occur in one market segment may not be relevant to consumers in other segments. For example, if price changes were observed in only one segment of the market (say, the higher priced, higher download plans), then consumers who were not interested in those plans would not experience any price change. As such, the average price changes for each product category were weighted according to the likely proportion of consumers who would be affected by the change.⁷⁶ Furthermore, the observed changes in average price were then adjusted for inflation, using the Consumer Price Index. This allowed the reported price changes to reflect the context of changing prices in other consumer goods and services.

Limitations

The method outlined above is intended to provide an indication of how, on average, prices have changed for consumers in each of the relevant service markets. However, inferences should be made with care, in recognising the limitations of the analysis.

Changes in price or value?

Service plans were grouped according to their characteristics, and the average prices of those categories were compared over time. This means that the observed price changes may reflect changes in sticker prices, or changes in the value of service inclusions at a given price, or both. As such, the price changes could be interpreted as either the changes in prices for a given type and quantity of service, or the change in value consumers obtain for a given price.

Changes in price and value are also linked to the consumer experience. For many characteristics (such as data allowances), all else being equal, consumers would prefer to maximise their consumption at a given price point. As plan offerings change, consumers may find that they could move to a plan with the same price but with more data, or a plan with the same data at a lower price. Regardless of which plan they choose, the consumer is facing an improved set of choices in both price and value.

The focus on average prices

Price changes are estimated by comparing average prices of each product group. This means that price changes can be influenced by the introduction or removal of plans, as opposed to changes in the prices of existing plans. This approach was taken in recognition that within each product category, plans would still vary in terms of some non-price characteristics. For instance, data allowances were classified by ranges as opposed to the exact number of gigabytes. The alternative approach of narrowing each product category would risk reducing the number of products that were deemed comparable from year to year.

⁷⁶ As part of the Division 12 RKR, the ACCC collects anonymised samples of consumer bills for fixed broadband and mobile every 3 years. These samples are used as a guide to consumer behaviour (in terms of monthly expenditure). New bill samples were collected in the 2018–19 financial year for fixed and mobile broadband services. Bill samples for mobile phone services used in this report were last collected in 2016–17 and have therefore been used in the last 3 reports.

Product categories being introduced or dropped

If a new product category is introduced for the first time, a price change would not be estimated for that product category until the subsequent year. This is due to the lack of a comparable average price for that product category. If a product category that existed in a previous year is no longer offered, a price change would not be estimated for that product category. This limitation has led the ACCC to investigate a new 'hedonic' approach, details of which can be found in appendix 5.6.

Plans being introduced or dropped

For a given year, the average price for each product category is calculated based on all plans within that category available that year. If a new plan is introduced that fits an existing product category, it would be included in the analysis. Plans would only be included in the price analysis of a given year if they were available during that year.

Customer experience

The grouping of 'like-for-like' plans based on a set of plan features, such as data inclusion and download speed relies on certain assumptions that may not reflect the true customer experience. For example, although the doubling of a plan's download allowance represents an improvement in the quality of the plan it may have no impact on the end user's experience of the product if the current download allowance is sufficient for their current usage. As a result, it may appear that plan quality has improved and average prices have fallen but there may be zero difference to the end user experience.

Average movements in data allowance

Changes in average data allowance follows the same methodology as price changes with the following differences:

- When comparing categories of service plans, categories are set according to a group of categories. For data allowance changes, price was held constant and plans were split into price classes. This is in contrast to the aforementioned method for calculating price changes, where data allowances were held constant.
- Data allowance changes have only been calculated for mobile technologies (mobile services and mobile broadband). Data allowance changes were not calculated for fixed broadband using the 'plan matching' approach due to the prevalence of unlimited data allowance plans as a proportion of the total market. Given the high, and increasing, proportion of fixed broadband plans falling within the unlimited data category, a plan-matched data allowance change would be:
 - irrelevant, as the prevalent plan type in the market were unlimited data allowance plans
 - inaccurate, as the end percentage change figure would be based on the subjective selection of a proxy gigabyte value assigned to unlimited data allowance plans.

Analysis was instead focussed on changes to the proportion of unlimited data allowance plans within the fixed broadband market. For other descriptive analyses of data allowance movements within the sector, unlimited data allowance plans were assigned a proxy value of 1500GB, which is consistent with figures used by the Department of Communications and the Arts⁷⁷ and the Centre of International Economics.⁷⁸

For this year's report, unlimited mobile plans were assigned data allowance values that corresponded to the 'unshaped' data that consumers can use. For example, if a plan had a 40 GB data allowance at an 'unshaped' download speed but an unlimited gigabyte allowance at a shaped download speed, the ACCC used a data allowance of 40 GB for analysis on these plans. However, given the increasing prevalence of plans of this nature within the mobile sector, the ACCC will continue to investigate how to best include such plans into analysis in future reports.

⁷⁷ The Department of Communications and the Arts, *Trends and drivers in the affordability of communication services for Australian households*, 2017, <https://www.communications.gov.au/documents/trends-and-drivers-affordability-communications-services-australian-households-0>.

⁷⁸ Centre of International Economics, *Final report—Telstra's Price Premium—The premium paid by consumers for fixed and mobile services*, 2016, http://www.thecie.com.au/wp-content/uploads/2017/03/CIE-Report_VHA_Price-Premium-Update-VHA-01122016.pdf.

5.6 Price monitoring methodology: calculating real changes in weighted average prices through a 'hedonic' approach

For the 2017-18 and 2018-19 Communications Market Report, the ACCC investigated a new approach for calculating the real change in average prices known as the 'hedonic' approach. This was developed in collaboration with Economic Insights, an economic consulting firm. This approach aims to provide a better indication of overall price changes in a continually changing telecommunications market. The hedonic approach achieves this by estimating how prices change with time, while controlling for the differences in the characteristics of plans. The percentage price changes provide information about price movements by comparing prices in one year to the prices in another year. However, they do not provide any information about price levels (i.e. the sticker price).

The 'hedonic' approach employs the following method:

- (a) Products are defined to be bundles of characteristics. A fixed broadband product, for example, is a bundle of characteristics, including (among other characteristics) data allowance and download speed.
- (b) The estimation of the index involves a regression equation. The regression equation describes how the price of a plan depends upon the characteristics of the plan and the relevant time period.

One of the key differences between the hedonic approach and the existing 'plan matching' approach (as described in appendix 5.5) is that the hedonic approach is able to account for new and discontinued plans. When a new type of plan is introduced, the existing plan matching approach would exclude this plan from analysis altogether, as it cannot find a similar plan in the previous year to 'match' with. This is also the case when a plan is discontinued, where the plan matching approach would not be able to match the discontinued plan with the later year. The effect of these omissions is the price change calculated as part of the 'plan matching' approach would not account for any price increases or decreases occurring in the market as a result of the introduction and/or discontinuation of plans.

Hedonic pricing methodologies

For the purposes of this report two approaches were investigated, the pooled data approach and the moving windows method.

The pooled data approach involves combining or 'pooling' data across all reference years. This is implemented by estimating one regression equation for all the reference years.

The moving windows approach, in contrast, involves the estimating a regression equation for each pair of consecutive reference years. For example, if there are four years of data there would be three regression equations, one for Years 1 and 2, another for Years 2 and 3 and a final equation for Years 3 and 4.

For this report the pooled data approach was chosen so as to increase the number of available observations. For the pooled data method five years of data were used but as noted above the moving windows approach only uses two consecutive years of data for each regression equation.

Variables used

For the regression analysis the following variables were used:

- (a) For fixed broadband and mobile broadband plans, the variables were monthly price, data allowance, download speed, voice inclusions (including local, national and mobile calls), TV bundling, access technology, access network and RSP, as well as variables for each financial year.
- (b) For post-paid and prepaid mobile plans, the variables were monthly price, unlimited calls, unlimited SMS, handset inclusion, data inclusions and RSP, as well as variables for each financial year.

Assumptions

The regression model was specified as follows:

(i) Observations were not weighted

In some hedonic pricing models, the observations are weighted to reflect the relative importance of the observations. As the ACCC's estimates of weights are not based on actual frequencies of plans, but rather are approximations, Economic Insights suggested that weighted models are not necessarily preferred. Thus, the ACCC used an unweighted model because of its greater simplicity.

(ii) Log-log regression

Economic Insights found that a log-log regression provided a substantially better fit than other specifications of the functional form (linear and log-linear) of the regression equation.

(iii) Random effects model

Economic Insights found that, first, a regression with retailer-specific effects was a better fit than an equation that does not include retailer-specific effects. Second, the hypothesis that random effects are zero was rejected, and the hypothesis that the random effects estimator is efficient and consistent was not rejected.

(iv) Right Hand Side (RHS) continuous variables are cubic

For the continuous variables on the RHS, the equation included (i) the log of the variable, (ii) the square of the log and (iii) the cube of the log. The square and cube of the log of the variable were included because this gives rise to a more general functional form, and, in many of the regression equations estimated, the square and cube of the log of the variable were found to be statistically significant.

Limitations

Change in price or value?

Accounting for new plans into a price index is not a simple process. New plans can differ considerably from older plans in their characteristics. For example, newer plans can offer faster download speeds and greater data allowances than older plans. As a result of these changes we are no longer comparing prices of like-for-like products and price changes for a product may occur due to changes in quality and/or sticker price. Price statisticians refer to this issue as the need to price to constant quality. A price index should measure 'pure' price changes and as a result adjustments must be made for changes in characteristics (or changes in quality) of individual products. These adjustments are referred to as quality adjustments. As such, a decrease in prices does not necessarily indicate a drop in sticker price but may instead indicate an increase in quality.

