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The economic contribution of Australia's copyright industries – 2006-2018

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Source : Jacinta keefe

01

Key findings

Source :Westend61, Uwe UmstÄtter

Key findings

In 2018, the copyright industries in Australia contributed:

$124.1 bn

to the Australian economy, equivalent to 6.8% of Australia's gross domestic product (GDP)

1,034,000

in employment, accounting for 8.3% of total employment in Australia

$4.8 bn

in exports, which is 1.5% of total exports from Australia

All figures in this report are provided in AUD 2018, unless otherwise stated.

Overview and key findings

Australia's copyright industries continue to be a significant contributor to the Australian economy

Using a globally accepted framework, in this study we present an estimation of the scale and importance of the copyright industries within the Australian economy and a point of comparison against other industries and countries.

This study shows that Australia's copyright industries continue to play a fundamental role in contributing to the Australian economy. Many of these industries are undergoing significant changes to their traditional business models as digitisation changes the way they operate.

CAGR = Compound annual growth rate

Competition from new businesses and distribution models in a digital environment continues to disrupt the core copyright industries with growth arising in new areas. Amidst this shifting landscape, some industries have adapted to the change more effectively by adopting digitisation (e.g. *music*, where digital sales comprised approximately 40% of total revenue*), whilst others have contracted (e.g. *newspapers*, where only 28% of newspaper advertising revenue is digital (PwC 2019)).

Enabling technologies and faster, more reliable mobile internet have helped some parts of the industry flourish, such as streamed content. New components of the copyright industries are continuing to emerge using these technological advancements, such as podcasts, which are working alongside the traditional radio industry rather than cannibalising it.

Software and *advertising services* have experienced the fastest growth rate, at 2.5% and 2.8% CAGR (2014-2018) respectively and have outpaced the overall copyright industries growth of -0.1% CAGR over the same period. *Software* is the largest sub-industry in terms of value added and is expected to grow, given the increasing adoption of cloud computing and 'software as a service' (SaaS) (Gartner 2019).

* Music revenues include physical distribution, digital distribution and live music.

In 2018, Australia's copyright industries:

1. generated economic value of $124.1 billion, the equivalent of 6.8% of gross domestic product (GDP), which is greater than other industries such as manufacturing and retail trade. Growth in these copyright industries continue to be impacted by digitisation with both positive and negative growth affects; the *software* sub-industry has more than doubled the average growth rate of the copyright industries, while *radio and television and press and literature* sub-industries have declined. Copyright industries are highly concentrated, with the top four sub-industries contributing ~60% of total value added.

2. employed over 1 million people, which constituted 8.3% of the Australian workforce, remaining stable at 0.2% CAGR from 2014-2018. On average, copyright industry jobs are relatively well paid, with the real average wage for people employed in copyright industries having increased from $73k in 2014 to $77k per employee in 2018. Average copyright wages are also higher than the Australian average.

3. generated $4.8 billion in exports, which is equal to 1.5% of total exports from Australia. This has grown at 3.7% CAGR from 2014 to 2018. Trade activity is increasing (net imports were $25.4 billion in 2018 and increased by 5% CAGR from 2014 to 2018), predominantly driven by trade in the interdependent industries.

Source : Jakob Owens

02

Context

Study context

The legal environment

In Australia, the *Copyright Act 1968* gives exclusive (but limited) rights to copyright owners as to how their material may be used. These rights include the right to copy, adapt, publish, communicate to the public and publicly perform the copyright material. The provision of these rights gives those within copyright industries the legal certainty upon which they can invest, create and build their distribution models.

To balance the rights of copyright owners with the needs of the general public, the *Copyright Act* provides a number of exceptions to the general rules regarding infringement of copyright. The appropriate role and scope of these exceptions has been an ongoing matter for debate, particularly with the advent of digital copying and the necessity for copyright modernisation to ensure applicability to the digital world. There has been continued discussion about the scope of some existing copyright exceptions, however the Government has not as yet foreshadowed any specific changes.

The past year has seen some amendments to the *Copyright Act* addressing a range of issues, including:

- changes to Australia's copyright duration laws including copyright terms to materials that are not published (or have not otherwise been made public)
- new powers to fight online piracy, including the targeting of infringing websites to quickly and effectively block sites that reproduce the content
- the extension of the safe harbour scheme to the educational, cultural and disability sectors to provide greater protection and access.

Ongoing policy scrutiny

The appropriate scope of copyright law has been extensively debated and discussed as part of the Australian Competition and Consumer Commission's (ACCC, 2019) Digital Platforms Inquiry (DPI). Even in the face of industrial change caused by the growth of digital solutions, the copyright industries have adapted, showing a considerable degree of sustainability and robustness.

Specifically, the ACCC made the following copyright-related recommendation:

> *'Mandatory Australian Communications and Media Authority (ACMA) take-down code to assist copyright enforcement on digital platforms.'* (Recommendation 8).

The Australian Government responded to the DPI on the 12 December 2019 with the following statements:

> *'The Government committed to reviewing copyright enforcement reforms made in 2018 and this review will occur in late 2020. In the meantime, there are opportunities for copyright owners to continue to enhance their relationships with digital platforms and work to identify where and how improvements could be made to reduce infringing copyright material and promote access to quality Australian content.'*
>
> *'Australia's copyright system is critically important to our economy and our creative industries. An effective copyright framework underpins the work of Australian artists, musicians and creators, and balances the rights of these groups to generate a return on their investments with reasonable access to copyright works.'*

Assessment of the value of Australia's copyright industries

Consistent with an emerging interest in better understanding the size and economic contribution of those industries which rely, to varying degrees, on copyright law, this study uses the global framework (WIPO 2015) to analyse and document the economic contribution of Australia's copyright industries over time. The core approach is described on the next page and in Appendix A.

This is the sixth copyright industries economic contribution study supported by the Australian Copyright Council (see Allen Consulting Group 2001, PwC 2008, PwC 2011, PwC 2015, PwC 2017).

It is important to appreciate that while the focus of this report is on the economic activity reliant to some degree on the institutional support provided by copyright law, there are a range of cultural, social and other benefits associated with the creation of copyright protected material that are not necessarily captured in the reported figures. For example, some elements which rely on copyright material may generate benefits that are not necessarily reflected in the market value for the goods or services.

Study context (cont'd)

A globally consistent methodology developed by the World Intellectual Property Organisation (WIPO) was applied to form an understanding of copyright's economic contribution

This report has the advantage of applying a globally consistent methodology developed by the World Intellectual Property Organisation (WIPO) to define the 'copyright industries' – those industries which rely on copyright protection – and assess their economic contribution. This provides a basis for a consistent comparison of how these Australian industries have changed over time and changes in these industries across countries.

WIPO has identified four classes of copyright industries:

- **Core** – industries that exist only because of copyright and are primarily involved in the creation, manufacture, production, broadcast and distribution of copyrighted works.
- **Partial** – a portion of the industries' activities are related to copyright through manufacture, performance, exhibition, broadcast, communication or distribution and sales.
- **Interdependent** – involved in the manufacture, performance, broadcast and communication in order to support and facilitate the creation of copyrighted works and other protected subject matter.
- **Non-dedicated support** – duties are included in this group where part of the activities are related to broadcast, communication, distribution and sales in protected subject matter and they are not included in the core copyright industries.

This common typology facilitates consistent analysis of the economic contribution of the copyright industries over time and across countries. At times, however, we depart from this typology to provide a more granular view of particular sub-industries that would otherwise not be visible within the aggregated results of the WIPO methodology. See, for example, the analysis on pages 15-17 covering software and advertising spend.


Source : Yana Amur

03

Value added by copyright industries

Source : d3sign/Getty Images

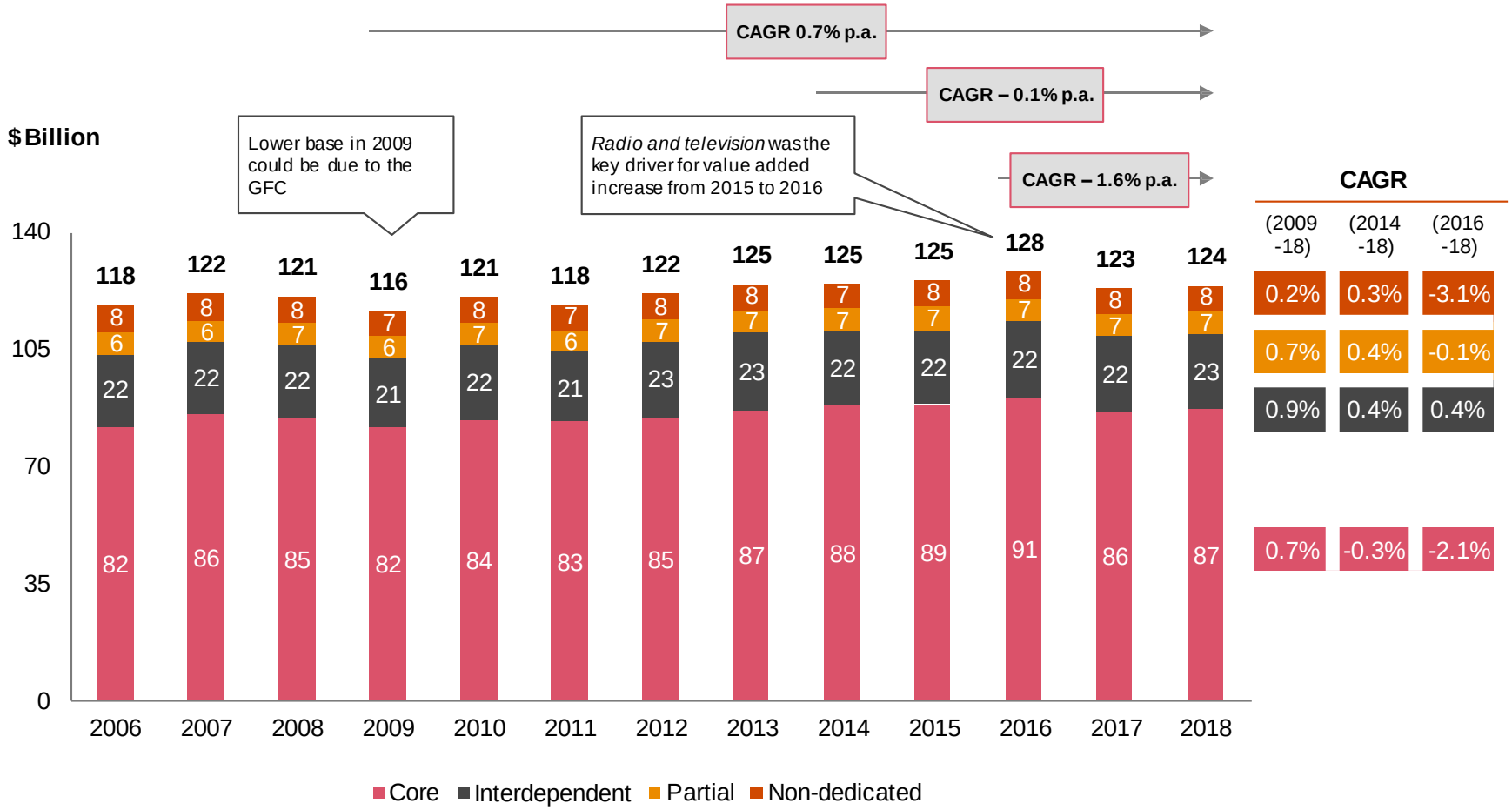
Copyright industries contributed $124 bn to the Australian economy in 2018, showing stability over the last five years

The copyright industries (the industries) contributed approximately $124.1 billion in value added to the Australian economy in 2018. This represents an increase of $7.7 billion compared to 2009, with the industry value added growing at 0.7% CAGR from 2009 to 2018, accounting for inflation. This indicates a strong and stable recovery since the global financial crisis (GFC).

Copyright industry value has remained relatively stable (between 2014 to 2018) despite the negative impacts of online copyright infringement. Growth in the *software and databases* sub-industry and other non-core industries were offset by the declines in *radio and television* and *press and literature* sub-industries. Value added decline from 2016 is predominantly driven by falls in *radio and television* sub-industry (-9% CAGR for 2016-2018).

Note: 'Value added' is the value of outputs of a particular industry less the value of inputs from other industries. Thus, the value add of Australia's copyright industries provides a measure of the relative importance of the copyright industries.

Copyright industry value added by industry type (stated in $2018), $billion, 2006 – 2018

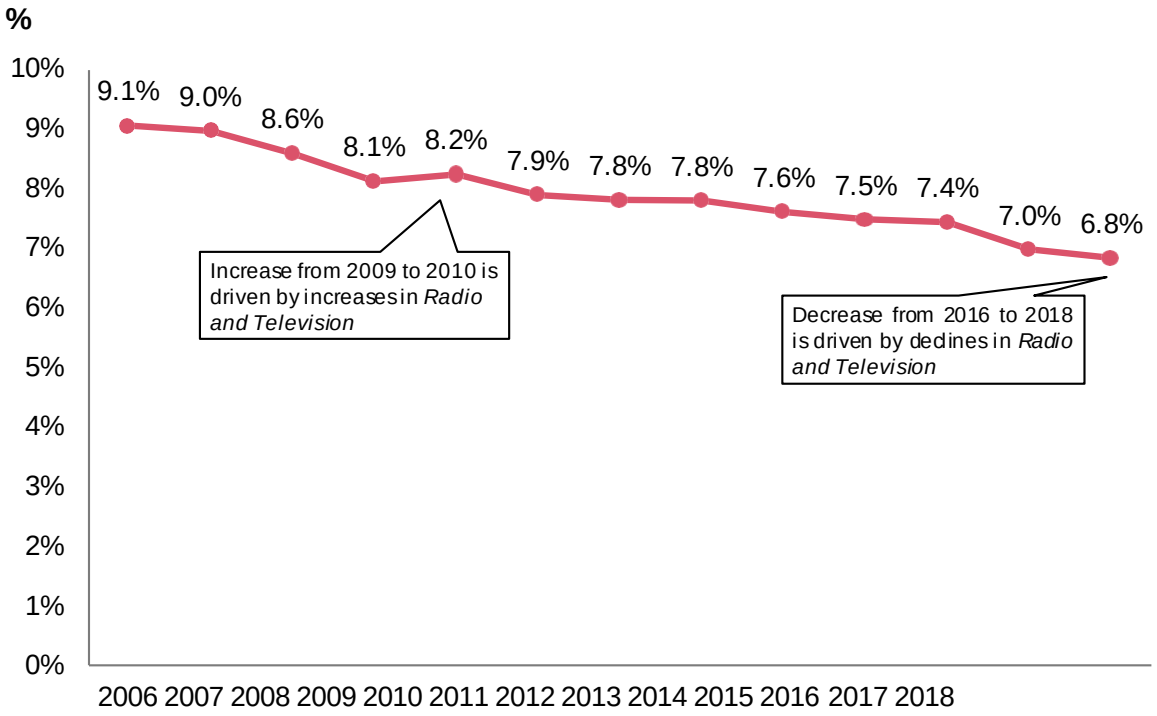


Source: PwC analysis, IBISWorld. Refer to Appendix A for detailed outputs.

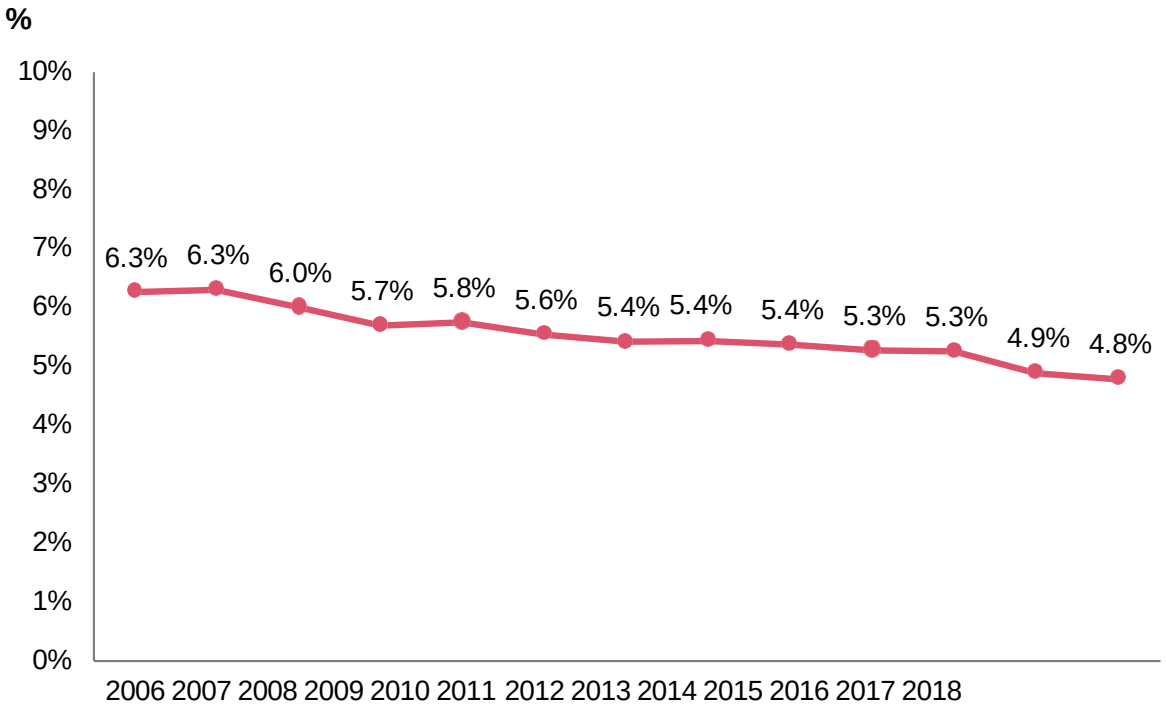
The copyright industries contributed 6.8% of Australia's GDP in 2018

Copyright industries accounted for 6.8% of Australia's GDP in 2018, which has declined from 9.1% in 2006. Core industries comprised 4.8% of Australia's GDP in 2018. This marginal decline reflects that other industries have grown faster, on average, than the copyright industries.

Copyright industries share of Australia's GDP (stated in $2018),%, 2006 – 2018



Core industries share of Australia's GDP (stated in $2018),%, 2006 – 2018

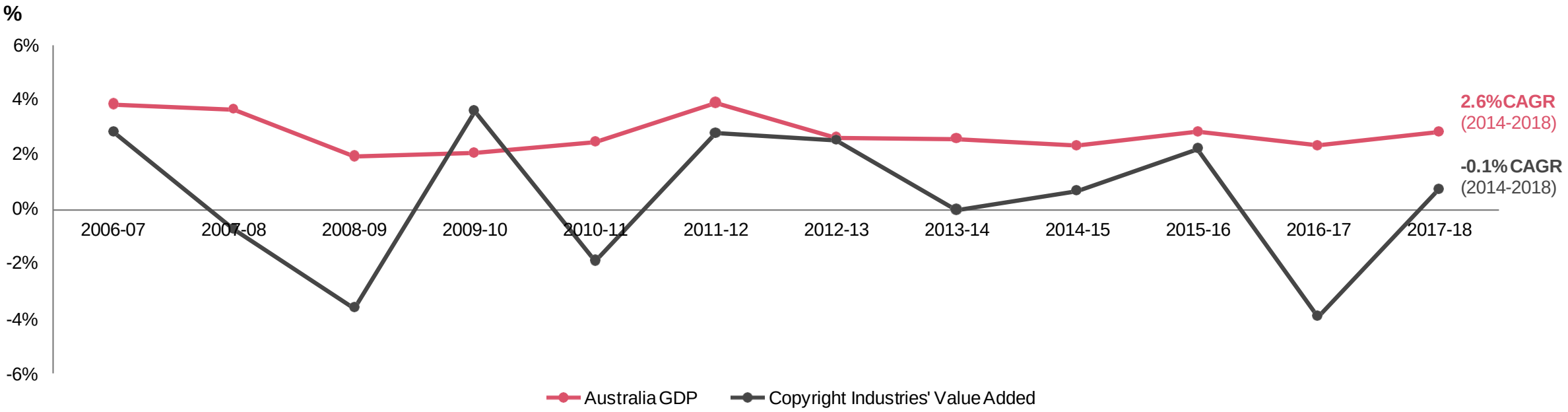


Source: PwC analysis, IBISWorld, ABS. See Appendix A for detailed outputs

The value add of Australia's copyright industries has grown by an average annual growth rate of 0.4% since 2006

Whilst the value added by Australia's copyright industries has grown since 2006, it is growing at a slower rate than Australian GDP. This has contributed to the copyright industries' share of Australia's GDP declining. Copyright industries' growth has been volatile over the last 10 years, potentially due to the GFC recession (2008-2009) and declines in traditional media (e.g. radio and television and press and literature sub-industries).

Australia GDP and copyright industries year-on-year (YoY) %change,%, 2006–2018



Source: PwC analysis, IBISWorld, ABS. See Appendix A for detailed outputs

Industry growth has been driven by the *advertising services* and *software and databases* sub-industries

Within the core copyright industries, the *advertising services* sub-industry grew the fastest over the past five years. This sub industry grew by an average of 2.8% per annum compound annual growth rate (CAGR) between 2014 and 2018, significantly outpacing the growth of the copyright industries as a whole.

	Copyright industries/sub-industries	2018 value added ($2018 million)	CAGR % (2010-2014)	CAGR % (2014-2018)
	Core	87,039	1.2%	-0.3%
Top two fastest growing sub-segments	*Software and Databases*	*32,938*	*3.9%*	*2.5%*
	Radio and Television	*17,854*	*1.0%*	*-5.5%*
	Music, Theatrical Productions, Opera	*11,315*	*0.5%*	*1.6%*
	Press and Literature	*10,631*	*-3.0%*	*-2.5%*
Top two fastest growing sub-segments	*Advertising Services*	*5,206*	*1.6%*	*2.8%*
	Motion Picture and Video	*3,318*	*-1.9%*	*0.7%*
	Photography	*1,959*	*1.4%*	*-1.5%*
	Copyright Collecting Societies	*2,145*	*-0.1%*	*2.2%*
	Visual and Graphic Arts	*1,674*	*1.7%*	*-0.6%*
	Interdependent	22,556	0.4%	0.4%
	Partial Copyright	6,919	0.5%	0.4%
	Non-Dedicated	7,561	-1.2%	0.3%
	Total	**124,075**	**0.8%**	**-0.1%**

Source: PwC analysis, IBISWorld. Refer to Appendix A for detailed outputs

The outlook is positive for the copyright sub-industries that adapt to digital production or distribution methods

Radio and podcasts

The radio industry has shown the possibility for the coexistence of both traditional and digital revenues in the radio industry, resulting in a forecasted CAGR of 7% between 2019 and 2023 (PwC 2019).

Breaking this down, the terrestrial radio industry is forecast to grow almost 2% CAGR, in addition to high growth in internet radio (including podcasts), forecasted to increase by 17% CAGR between 2019 and 2023.

The combination of new hardware such as in-home smart speakers, and advanced software that allows more targeted and personalised advertising has helped boost the radio industry.

Interactive games and e-sports

The interactive games and entertainment association (IGEA 2019) found the video game development industry generated an income of over $143 million in Australia in 2018/19, and employed 1,275 full-time employees.

Furthermore, revenues from the computer gaming industry are forecast to grow nearly 16% CAGR from 2019 to 2023, driven by online gaming and microtransactions which will benefit from the rollout of 5G internet (PwC 2019).

Microtransactions are in-game purchases, which have proved successful revenue streams for free-to-play interactive games. However, any microtransactions that meet the definition of gambling may be regulated as gambling – this will be reviewed further by the Australian Government.

Broadcast video-on-demand (BVOD)

Despite nearly ten years since the introduction of BVOD to Australia, its usage grew by almost 70% in 2018, indicating Australian's are consuming their preferred content in a way, at a time, and in a place that suits them (PwC 2019). This speed and affordability of 4G mobile internet has supported this growth, and the future rollout of 5G could further benefit the BVOD industry.

The BVOD industry is forecast to grow by over 27% CAGR between 2019 and 2023 helping to support the traditional free-to-air television industry. Interestingly, the more establish SVOD industry generates revenues ten times that of BVOD, however is growing at a slower rate of 13% CAGR (PwC 2019).

With competition between BVOD providers high, the battle to provide Australians with quality content with a high user experience is benefitting many consumers.

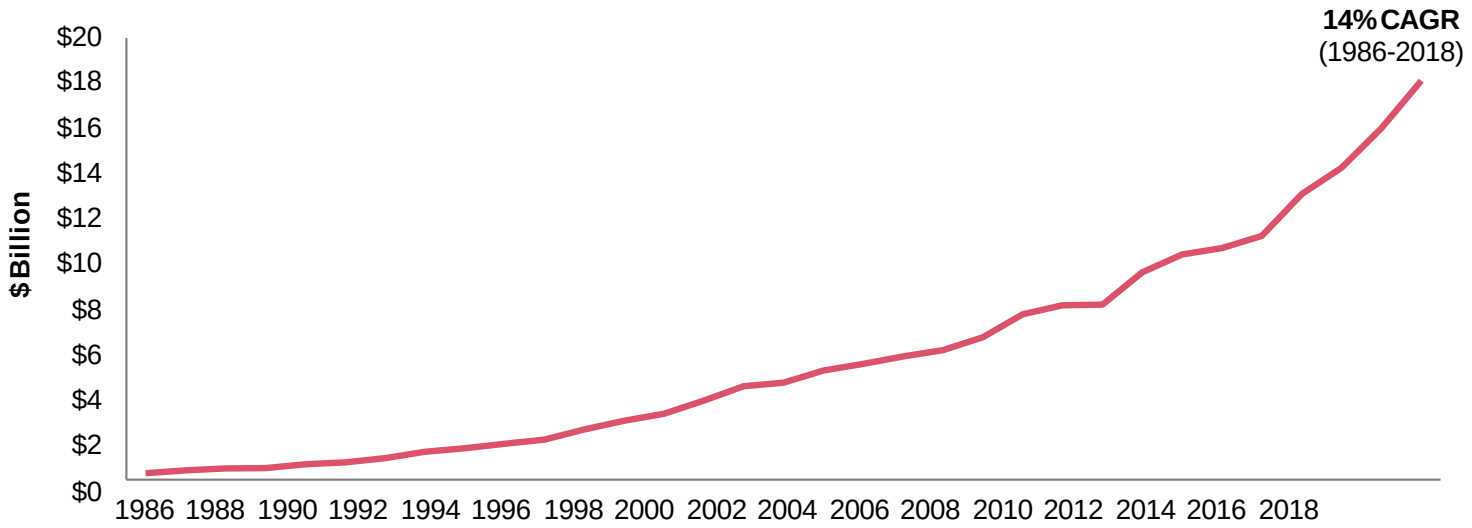
Note: The industries covered on this page depart from the traditional industry definitions under the WIPO framework and provide a more detailed view into some of the components of the sub-industries.

Computer software expenditure has grown by a CAGR of 14% over the past 30+ years

Australia's National Accounts (ABS 2019, 5206.0) provides a good example of the growth of the software industry. The chart below shows the ABS estimates for Australian expenditure on computer software. This includes computer programs, program descriptions and supporting materials for both systems and applications software. Included are purchased software and, if the expenditure is large, software developed in-house. It also includes the purchase or development of large databases that the enterprise expects to use in production over a period of more than one year.

Based on IT spend forecasts by Gartner (2019), Software spend is expected to increase by 11% CAGR (2018-2022F) from $15 million in 2018 to $23 million in 2022 and its share of total IT spend to grow from 17% in 2018 to 22% in 2022. Compared to other IT spend segments, Software is the fastest growing segment at 11% CAGR (2018-2022F), outpacing average IT spend of 4% (2018-2022F) and doubling the second fastest growing segment – IT Services. According to Gartner (2018), software's growth is driven by the shift from traditional offerings to new, cloud based alternatives.

Australian expenditure on computer software, $billion, 1986 – 2018



Source: ABS (2019)
Note: The industries covered on this page depart from the traditional industry definitions under the WIPO framework and provide a more detailed view into some of the components of the sub-industries.

IT Spend 2018-2022F CAGRs by Segments, %, 2018-2022

IT Spend Segments	CAGR (2018-2022F)
Software	11%
IT Services	5%
Communication Services	2%
Devices	-1%
Data Centre Systems	-1%
Total IT Spend	**4%**

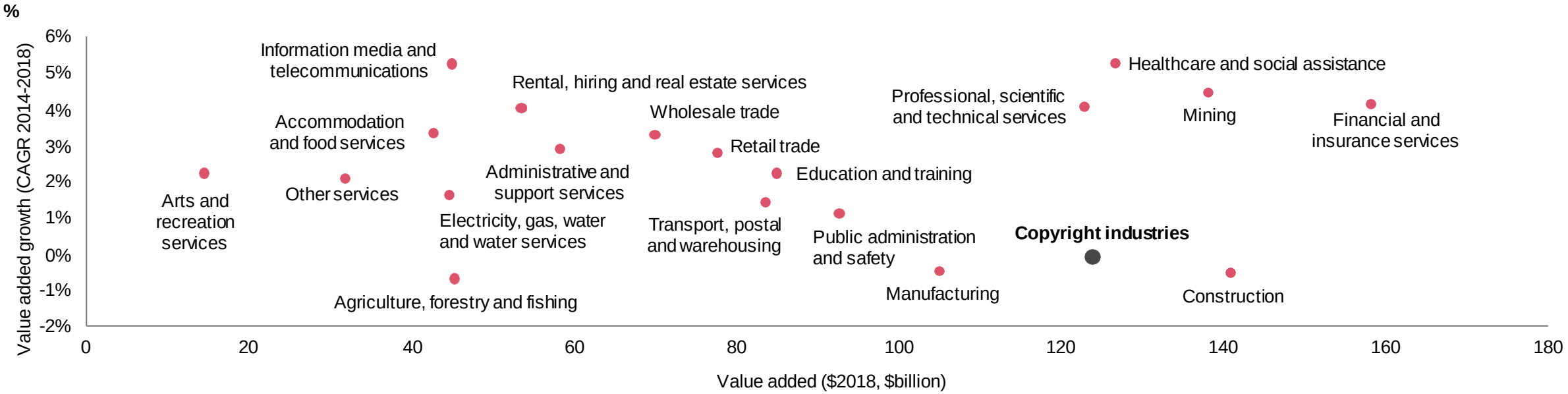
Source: Gartner (2019)

If the copyright industries were a stand-alone industry, it would be the fifth largest industry in 2018 in terms of gross value added

The following figure compares industries in terms of their CAGR growth over the past five years and their current total size (in terms of value added). A top performing industry would be positioned in the top right of the figure, reflecting both a significant size and continuing growth. The figure reveals that Australia's copyright industries:

- are the fifth largest and have generated more value added than other industries such as manufacturing. This is despite the copyright industries experiencing relatively low total growth over the last five years (2014-2018) compared to other sectors of the economy
- have moved down two positions from being the third largest industry in the analysis conducted in 2017 and the value added growth has declined from 1.3% CAGR (2012-2016) to – 0.1% CAGR (2014-2018)
- have been overtaken by mining; healthcare and social assistance; and professional, scientific and technical services in terms of value added since the 2017 report.

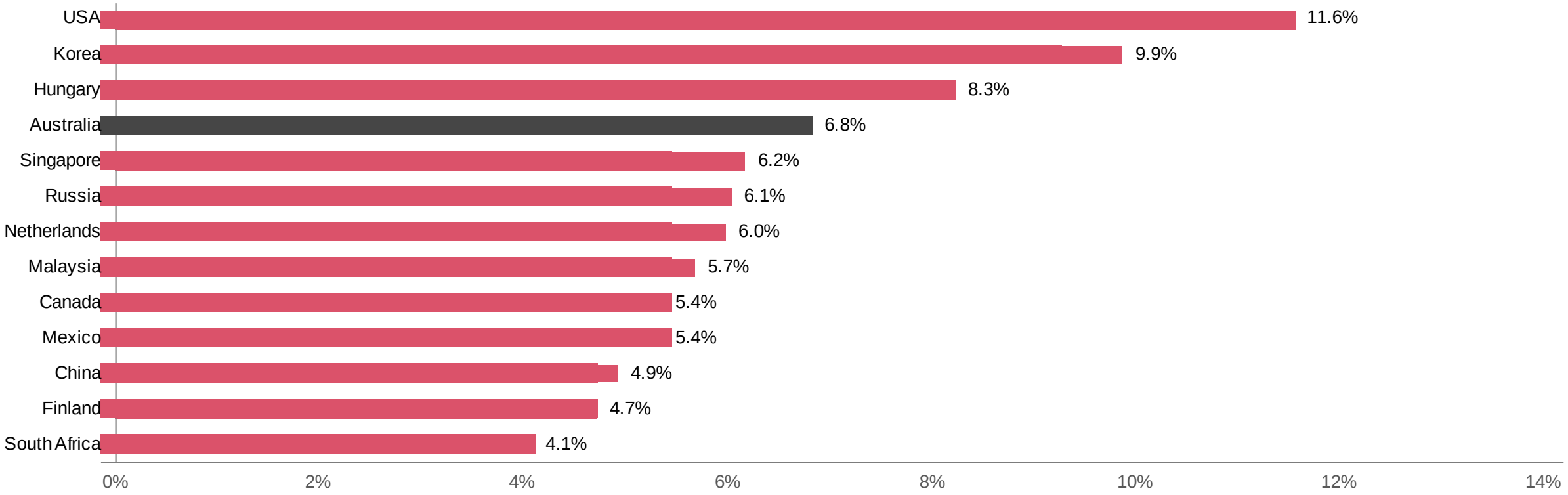
GDP value added and value added growth by industry, $billion and %, 2018, CAGR 2014-2018



Australia continues to have an economy with economic output supported by relatively large copyright industries

Australia's economy is relatively more dependent on the copyright industries as a generator of value added. Australia's copyright industries generate 6.8% of GDP, shown below in comparison to other nations that have also calculated the value of their copyright industries, consistent with the WIPO framework.

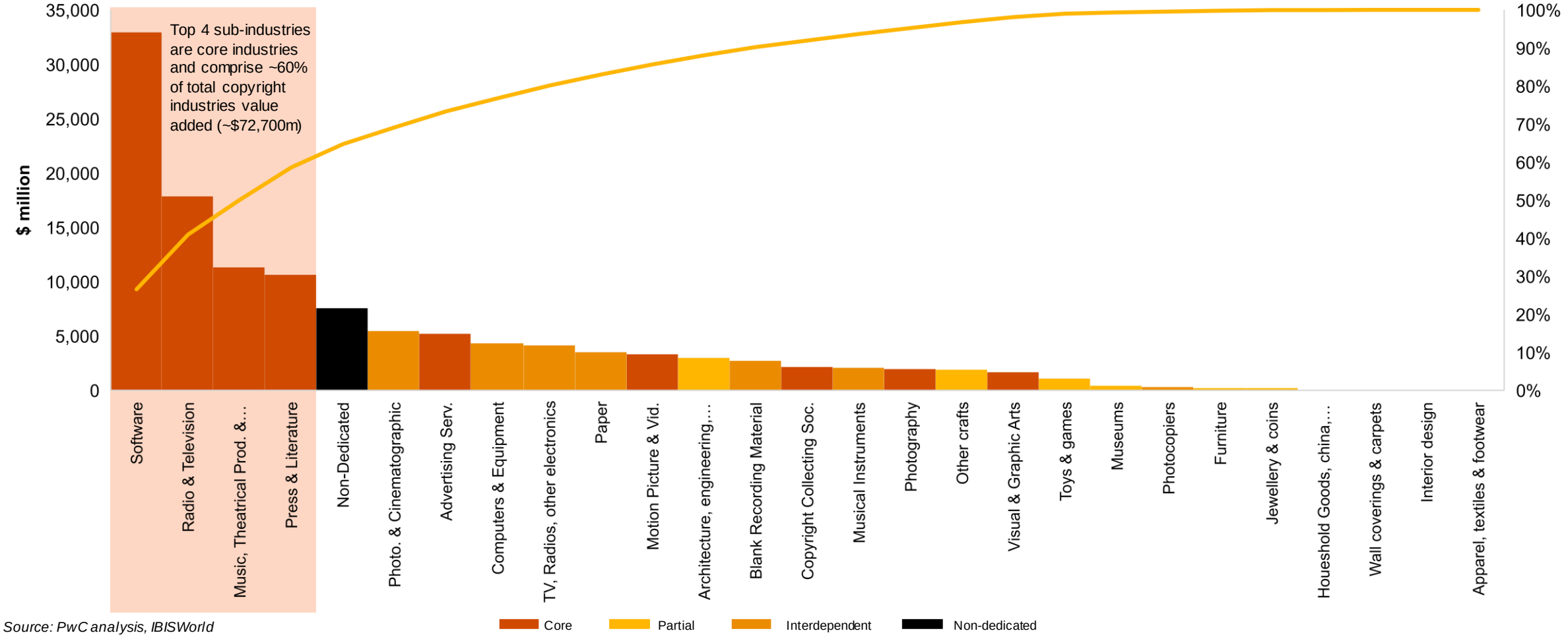
GDP value by country, %, latest available years



Source: PwC analysis, IBISWorld, ABS, WIPO

Copyright industries are highly concentrated, with the top four sub-industries comprising approximately 60% of total value added

Industry value added by sub-industry, $million and cumulative %, 2018



Source: PwC analysis, IBISWorld

Source : Isaac Ibbott

04

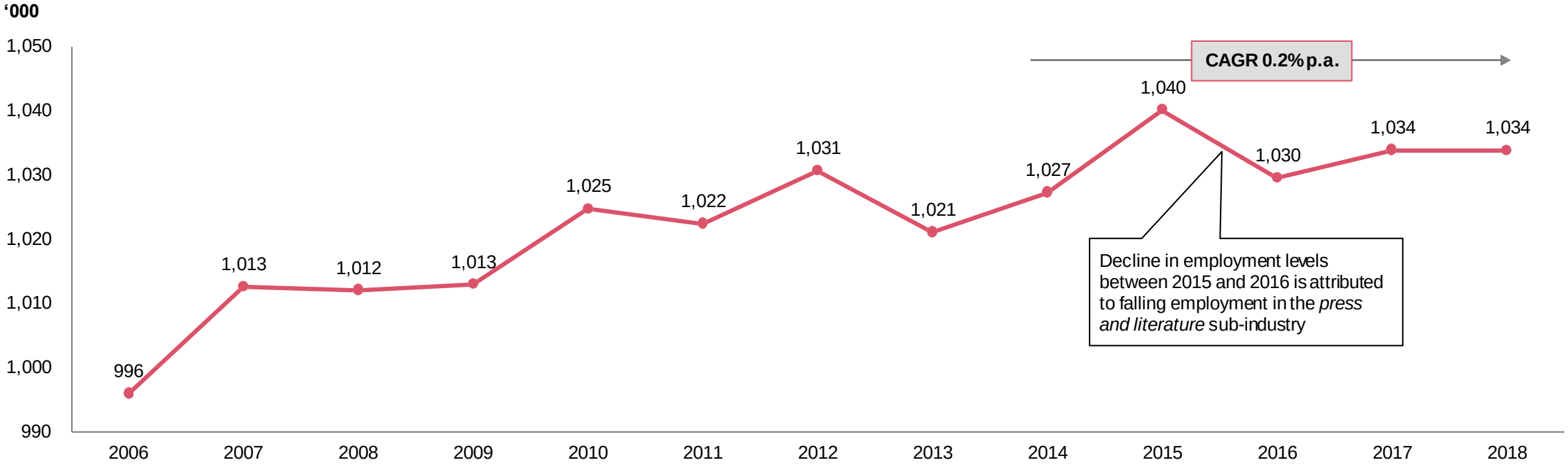
Employment in copyright industries

Copyright industries continued to employ over one million Australians in 2018

The copyright industries' employment has remained stable at over one million since 2014 despite employment levels declining slightly from 2015. The number of employed persons in the industries has increased by 0.2% CAGR between 2014-2018. Employment in the industries is shifting towards higher value sectors such as the software and databases sub-industry which has grown at the fastest rate of all industries since 2014. For example, app developer jobs have grown by approximately 20% between 2017 to 2019, an increase from 113,000 to 136,000. Similar to what has been seen in other developed nations, the move to digital distribution in some sectors has brought with it a decline in retail employment.

For comparison purposes, approximately 1.7 million people are employed in healthcare, 1 million in education and training, and 250,000 in mining (ABS 2019).

Employed persons in copyright industries, '000, 2006 – 2018



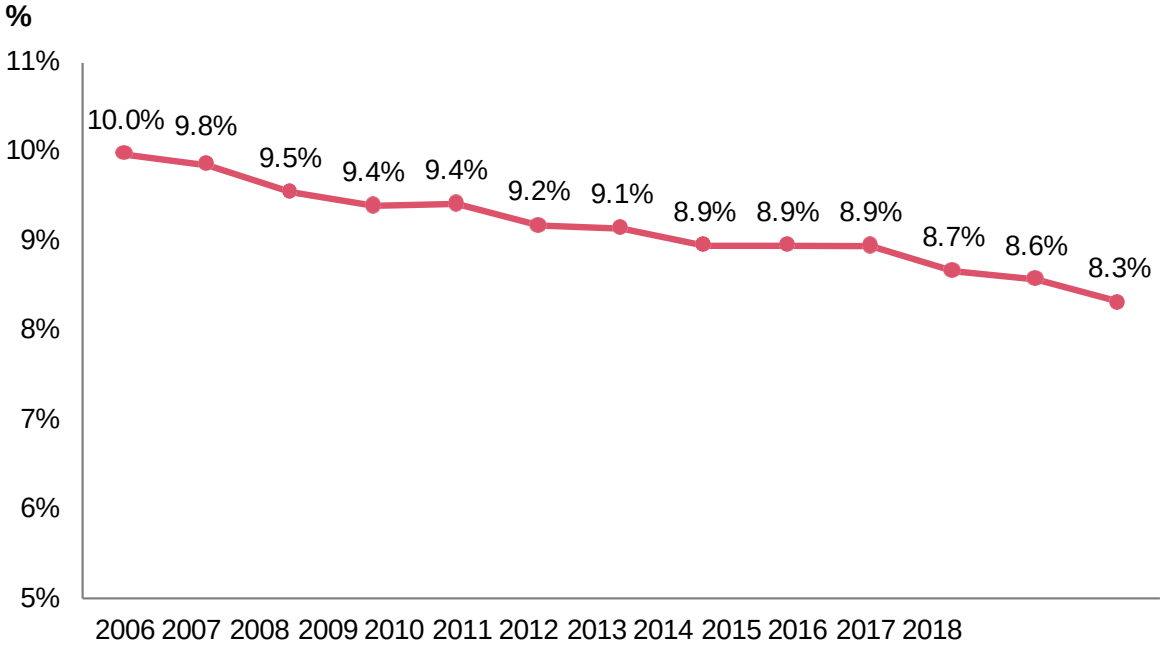
Source: PwC analysis, IBISWorld, Progressive Policy Institute. Refer to Appendix A for detailed outputs

Despite stable employment, the copyright industries' share of total employment has been declining due to a growing working population

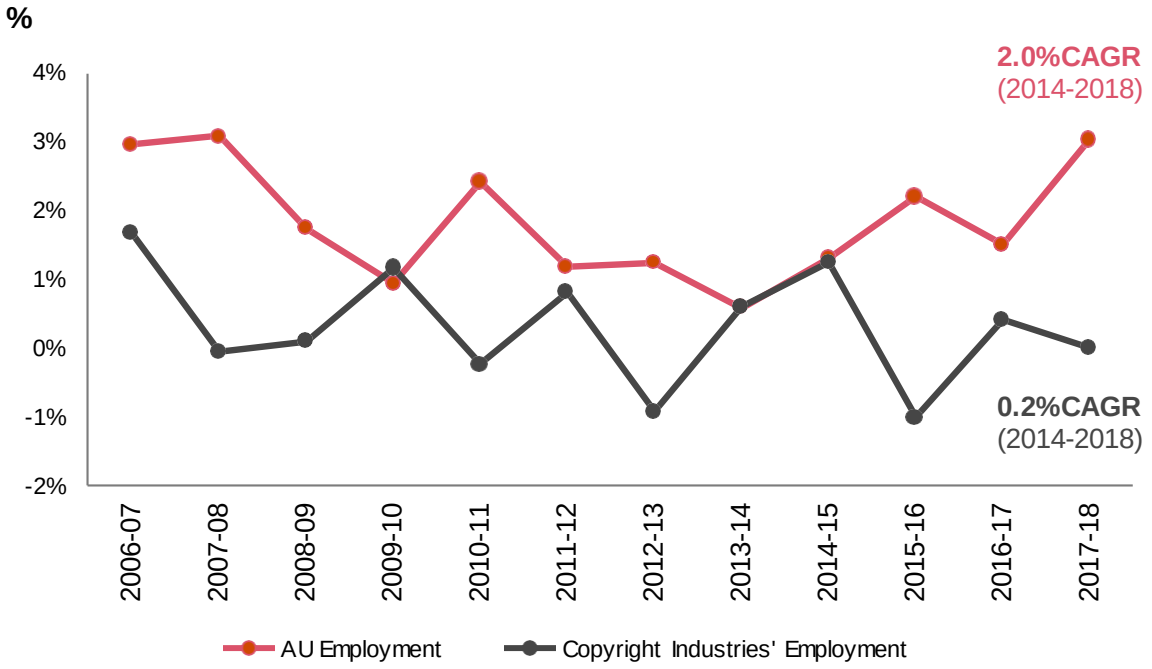
The estimates of employment represent principal employment. We know from work from Throsby and Petetskaya (2017) that many people are actively working in the copyright industries as a secondary job. Hence, the estimates presented in this report likely under-represent the true number of people working in Australia's copyright industries.

Copyright industries' share of total employment in Australia in 2018 was 8.3%. This has been steadily declining over the past five years in line with the decline in the industries' GDP share. Copyright industries' employment has been growing at a slower rate in comparison to the Australian economy at 2.0% CAGR (2014 to 2018). This continues to reflect a combination of efficiencies in the copyright industries (largely due to digitisation) and a growing working population in Australia partly caused by a falling unemployment rate.

Copyright industries share of total employment, %, 2006 – 2018



Australia total employment and copyright industries employment YoY % change, %, 2006– 2018



Source: PwC analysis, IBISWorld, ABS. Refer to Appendix A for detailed outputs

Digitisation is a key driver of employment trends – digital media such as *software and databases* has grown the most over the last five years

Employment growth has been strongest in the *software and databases* sub industry where employment grew by 2.3% CAGR between 2014 and 2018. Employment declines were also greatest in the *press and literature* and *photography* sub-industries, which have been impacted by the shift towards digital media and the emergence of new competitors. This is consistent with the ACCC's concerns raised in the Digital Platform Inquiry (2019), where they highlighted the falling number of Australian journalists caused by a shift away from traditional print advertising towards digital means. They note the number of people employed in traditional print journalism fell by 26% between 2006 to 2016.

While this table demonstrates that employment in a number of the copyright industries has been negatively affected by changing business models and the rise of digital content, employees in Australia's copyright industries appear to be less exposed to the coming disruption from automation. PwC's list of the top 24 occupations most at risk from computerisation and technology only has one occupation closely associated with copyright (i.e. printing trades workers) that features on the 'most exposed' list (PwC 2015a, p.10).

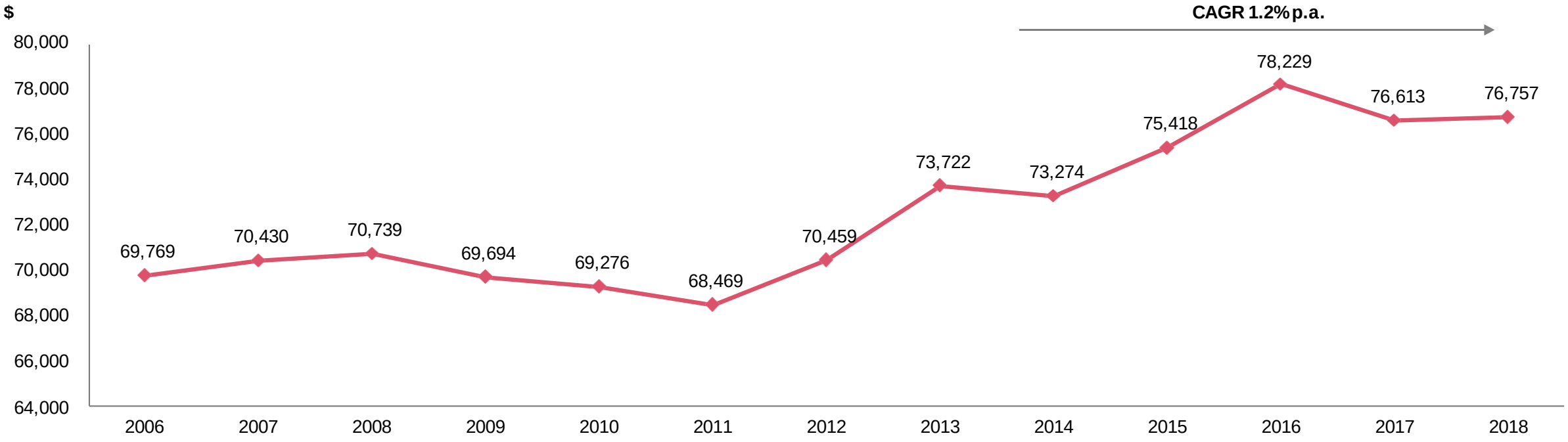
Copyright industries/sub-industries	Employed persons (2018)	CAGR % (2010-2014)	CAGR % (2014-2018)
Core	679,354	-1%	0.7%
Software and Databases	238,068	0.4%	2.3%
Press and Literature	101,954	-6.3%	-2.6%
Music, Theatrical Productions, Opera	96,598	0.1%	1.3%
Radio and Television	83,541	-0.9%	-0.7%
Advertising Services	57,132	2.4%	2.3%
Motion Picture and Video	41,551	1.4%	1.4%
Copyright Collecting Societies	22,745	1.0%	-0.1%
Photography	19,809	-3.7%	-1.6%
Visual and Graphic Arts	17,956	-3.0%	-0.5%
Interdependent	178,787	0%	-1.0%
Partial Copyright	83,265	-1%	0.5%
Non-Dedicated Support	92,497	-3%	-1.4%
Total	**1,033,901**	**-1%**	**0.2%**

Average real wages in the copyright industries have increased to $77k in 2018

Average wages per employee in the copyright industries have grown, in real terms, from $73,300 in 2014 to $76,760 in 2018 representing an increase of 1.2% CAGR. This overall steady increase follows a period of real wage stagnation following the GFC.

Average wages within the core copyright industries varied considerably depending on the industry. For example, it is estimated that average wages in the software and databases related industry were approximately $103,000 compared to $46,000 for motion picture and video employees.

Average copyright industries wages, $2018, $, 2006 – 2018

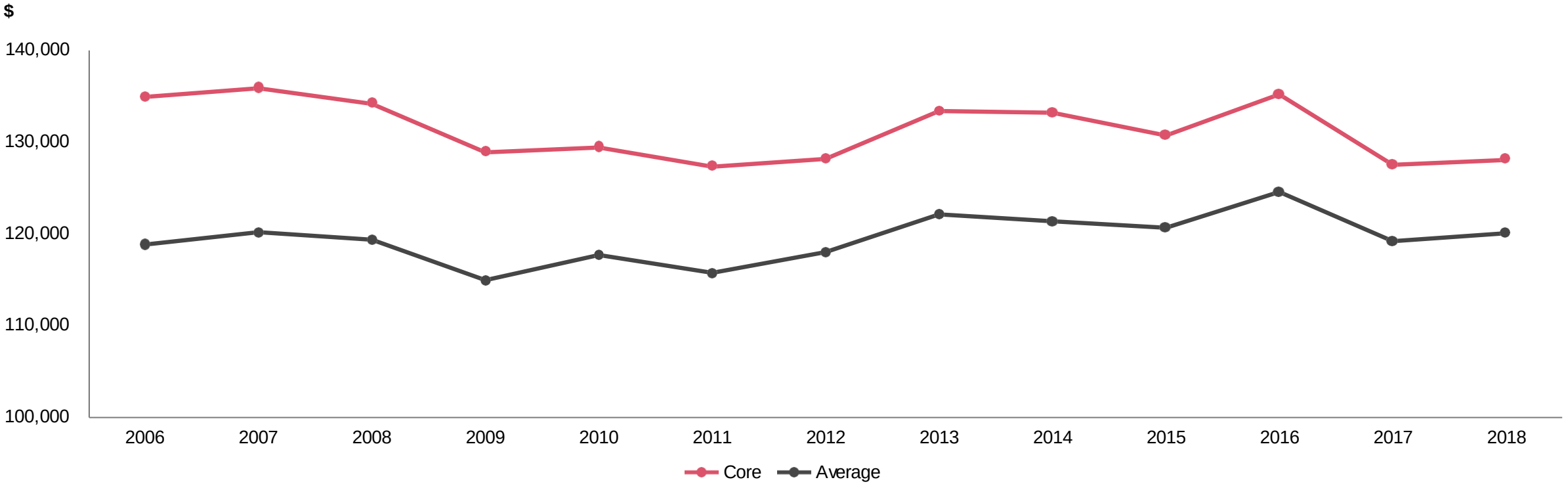


Source: PwC analysis, IBISWorld

Growth in real wages reflects improvement in labour productivity in the copyright industries

The real increase in copyright wages reflects the labour productivity growth that has been evident in the industries over the period from 2014 to 2018. Productivity growth had been relatively stagnant in the decade leading up to 2014, which corresponded to stagnant growth in wages over the same period. Labour productivity has been consistently higher in the core copyright industries compared to non-core industries.

Value added per employee (copyright industries), $2018, $, 2006 – 2018

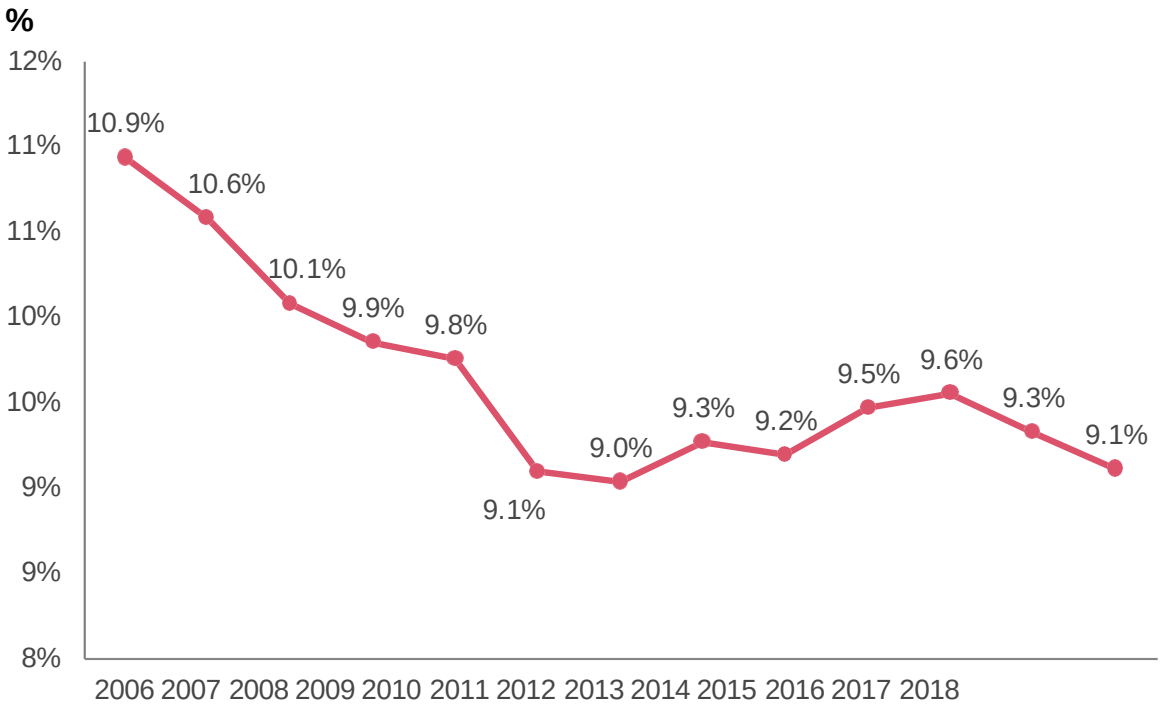


Source: PwC analysis, IBISWorld

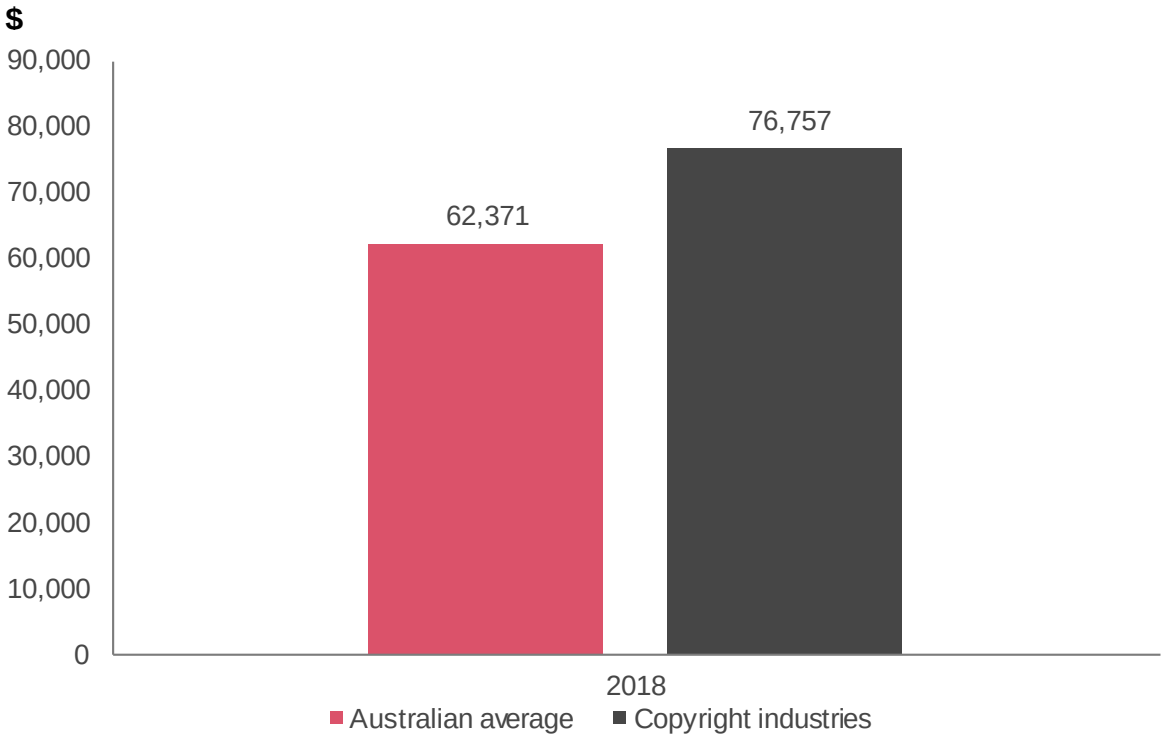
Copyright industries' share of total wages has remained stable since 2011, with average copyright wages higher than the Australian average

The copyright industries' share of total wages was 9.1% in 2018. The industries' share of total wages within the Australia economy had been declining since the early 2000s but appears to have stabilised since 2011. While copyright wages have fallen as a percentage of total wages, copyright jobs remain, on average, better remunerated than the economy as a whole.

Copyright industries share of total wages, %, 2006 – 2018



Average wage comparison – Australian average and copyright industries, $2018, $, 2006 – 2018

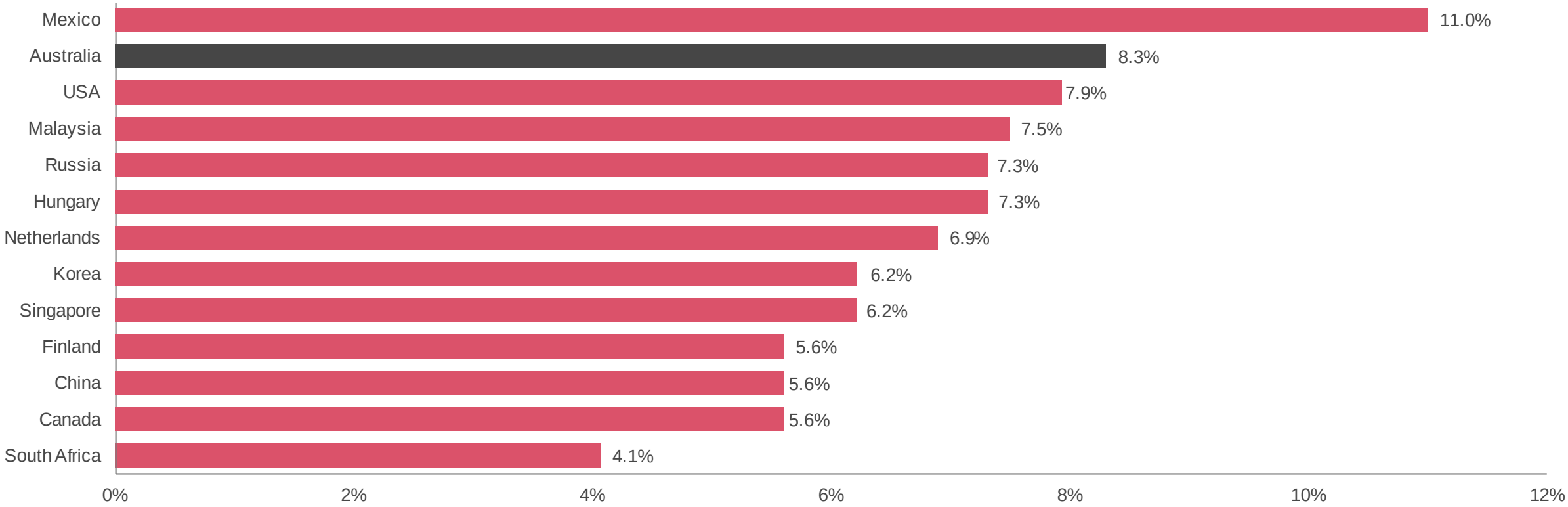


Source: PwC analysis, IBISWorld, ABS

Australia's copyright industries employment intensity is high compared to other countries

Australia's copyright industries comprise 8.3% of Australia's workforce in 2018. This is shown below in comparison to other nations that have also calculated the value of their copyright industries, consistent with the WIPO framework.

Employment share by country, %, latest years



Source: PwC analysis, IBISWorld, WIPO

05

Trade in copyright products

Source : Bank Phrom

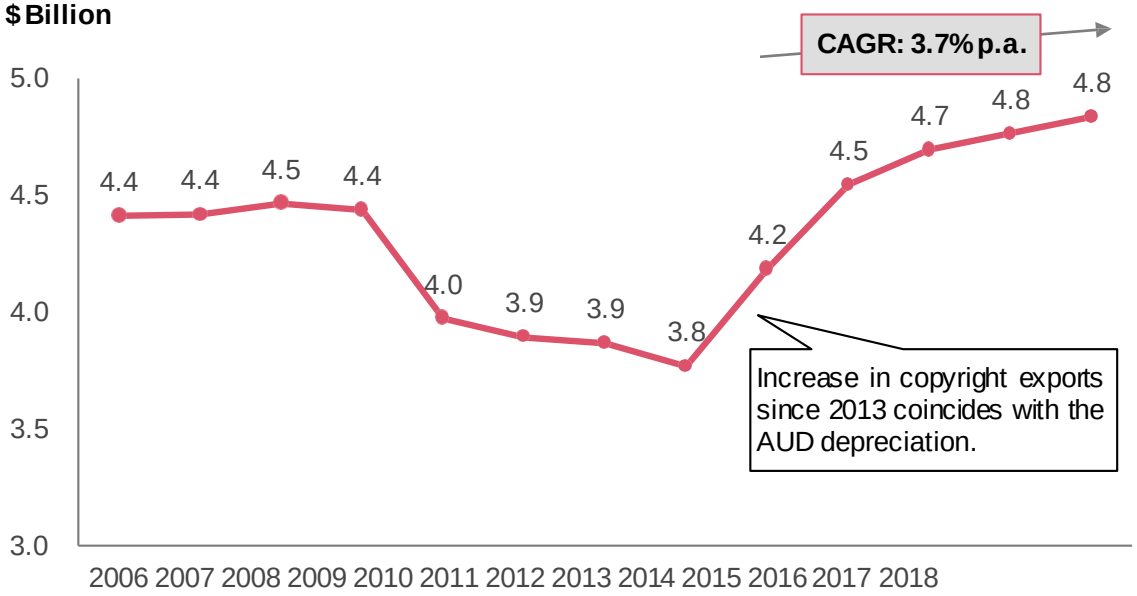
Copyright exports totalled $4.8 billion in 2018 and have grown by 3.7% CAGR from 2014 to 2018, bolstered by the dollar's depreciation

Copyright exports have increased steadily since 2013 coinciding with the fall in the Australian Dollar. Similarly to the copyright related imports, exports are predominantly comprised of interdependent industries which include the production of electronic audio visual equipment and computers. The growth in exports since 2013 was driven by exports of computers and IT equipment and also photographic and video recording equipment.

The Australian Government has several refundable tax offsets to attract more foreign film productions in Australia. This is helping to boost copyright exports as foreign investment flows into Australia and also helps secure jobs for crews, technicians and creatives in Australia.

Exports for the interdependent industries account for over 90% of total exports. This industry includes activities related to the production of electronic audio visual equipment and computers. Exports in the core industries (which include a significant portion of service sectors) have declined by 4.2% from 2014 to 2018 and continue to comprise a small proportion of total copyright exports.

Copyright industries exports, $2018, $billion, 2006 – 2018



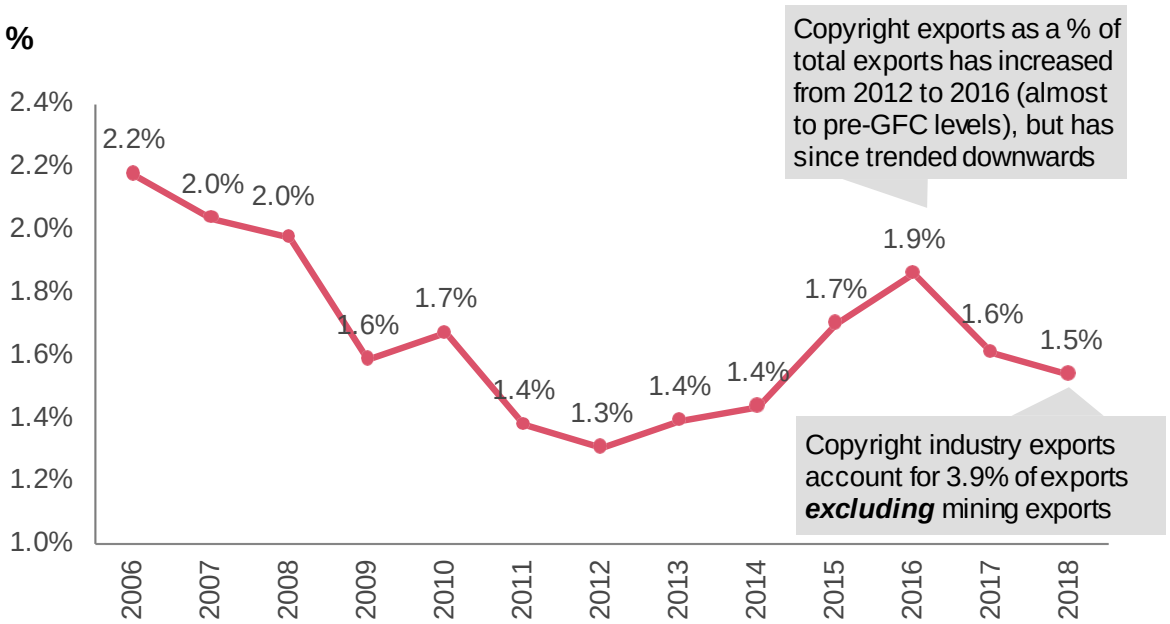
Source: PwC analysis, IBISWorld, Capital IQ. See Appendix A for detailed outputs

Copyright Industries	Exports ($2018, $M)	CAGR % (2010-2014)	CAGR % (2014-2018)
Core	86	-20.5%	-4.2%
Interdependent	4,461	2.3%	3.7%
Partial Copyright	291	2.8%	5.9%
Non-Dedicated Support	N/A	N/A	N/A
Total	**4,838**	**1.3%**	**3.7%**

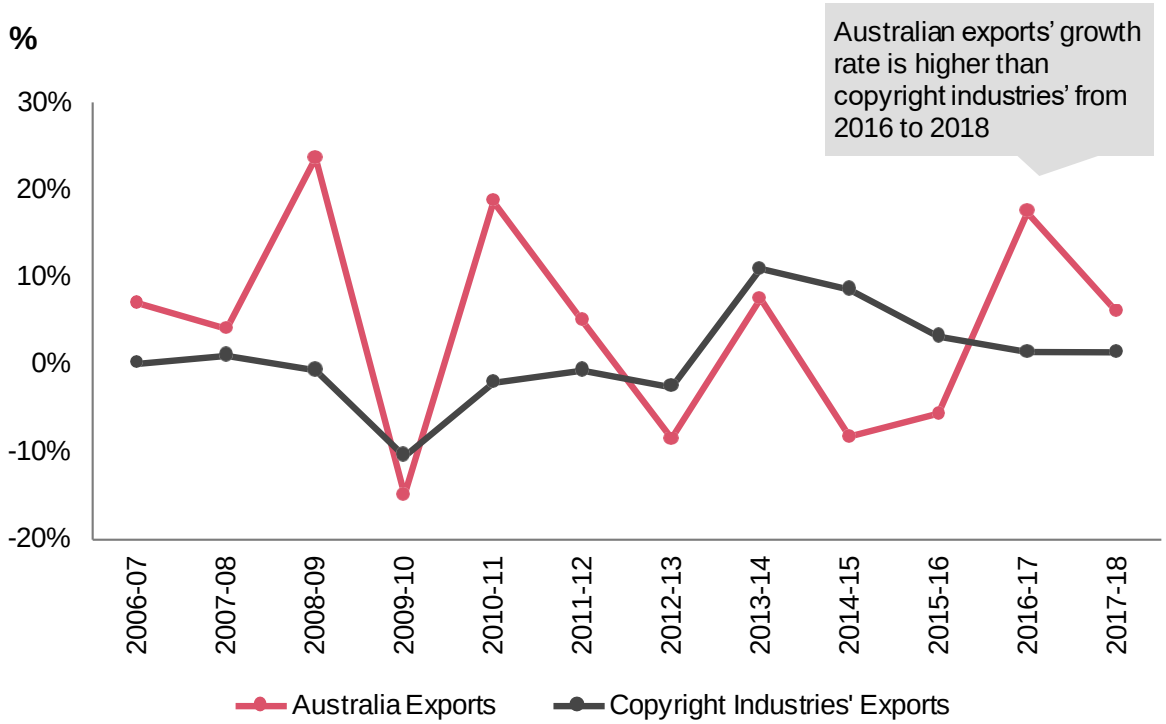
Copyright's share of total exports was 1.5% in 2018, which is down from the 2016 peak, but still up on 2011 levels

Copyright exports account for 1.5% of total exports in 2018 and are trending downwards following a period of increase from 2012. The decline in copyright's share of total exports from 2016 to 2018 is caused by Australian exports generally outperforming copyright exports during this period. This is largely due to natural resources exports expanding following the resources and construction boom.

Copyright industries share of total exports, %, 2006 – 2018



Australia exports and copyright industries exports YoY % change,%, 2006 – 2018

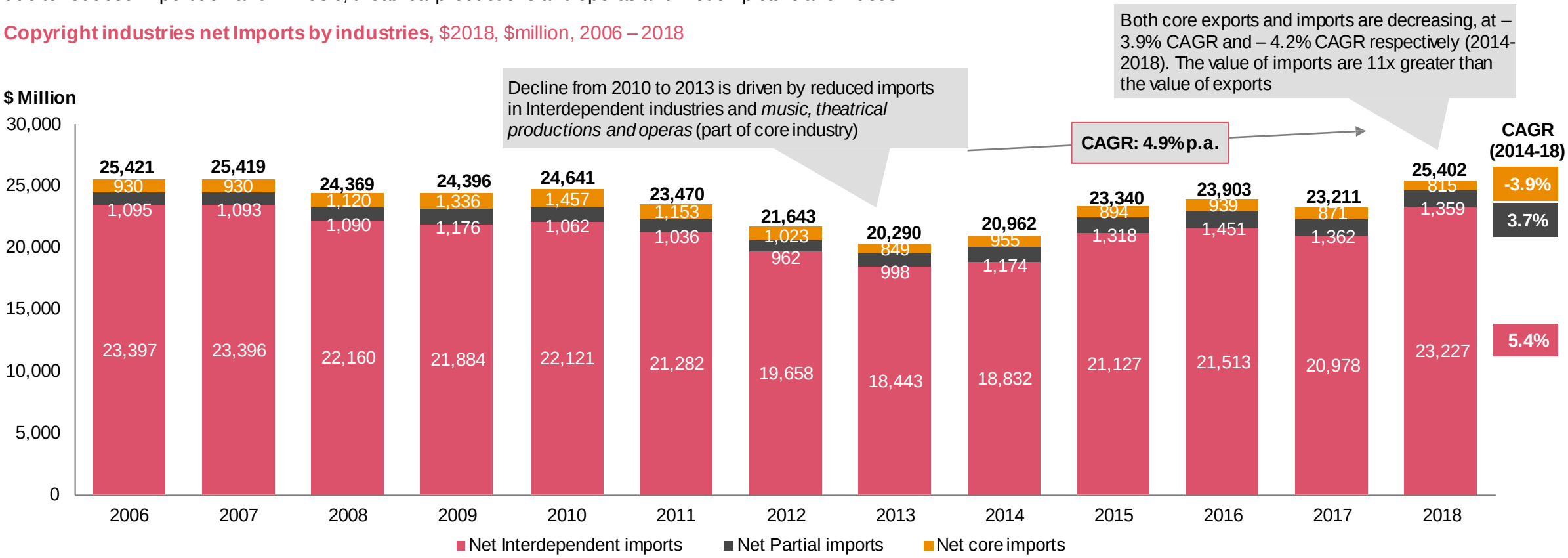


Source: PwC analysis, IBISWorld

Australia continues to be a net importer of copyright as net imports increased by 4.9% CAGR (2014-2018)

Net imports increased to $25.4 billion in 2018. This was predominantly driven by trade in the interdependent industries, which increased by 5.4% CAGR (2014-2018). Interdependent industries includes activities related to the production of electronic audio visual equipment and computers. Net imports in core industries have declined by 3.9% CAGR (2014-2018), due to reduced import demand in music, theatrical productions and operas and motion picture and videos.

Copyright industries net Imports by industries, $2018, $million, 2006 – 2018



Source: PwC analysis, IBISWorld. See Appendix A for detailed outputs

06

Appendices

A Study methodology
B Data outputs
C Sources

Source : Arif Riyant

Appendix A – Study methodology (1 of 3)

This study employs the standardised global framework for assessing the economic contribution of copyright industries developed by the World Intellectual Property Organisation (WIPO) (WIPO 2015).

This framework was designed so that the myriad of country-specific studies that had been independently prepared could be made more consistent and transparent, to ensure the results would be (to the extent possible) comparable across jurisdictions.

The framework:

- Classifies particular industries as being within the 'copyright industries'
- Groups industries into four groups — core, partial, non-dedicated support, and interdependent — which, combined, form the 'total' copyright industries (the following table provides a summary of the classifications)
- Provides a generic set of performance indicators, with a focus on 'value add', trade in copyright products and employment.

All figures in this report are provided in AUD 2018 unless otherwise stated.

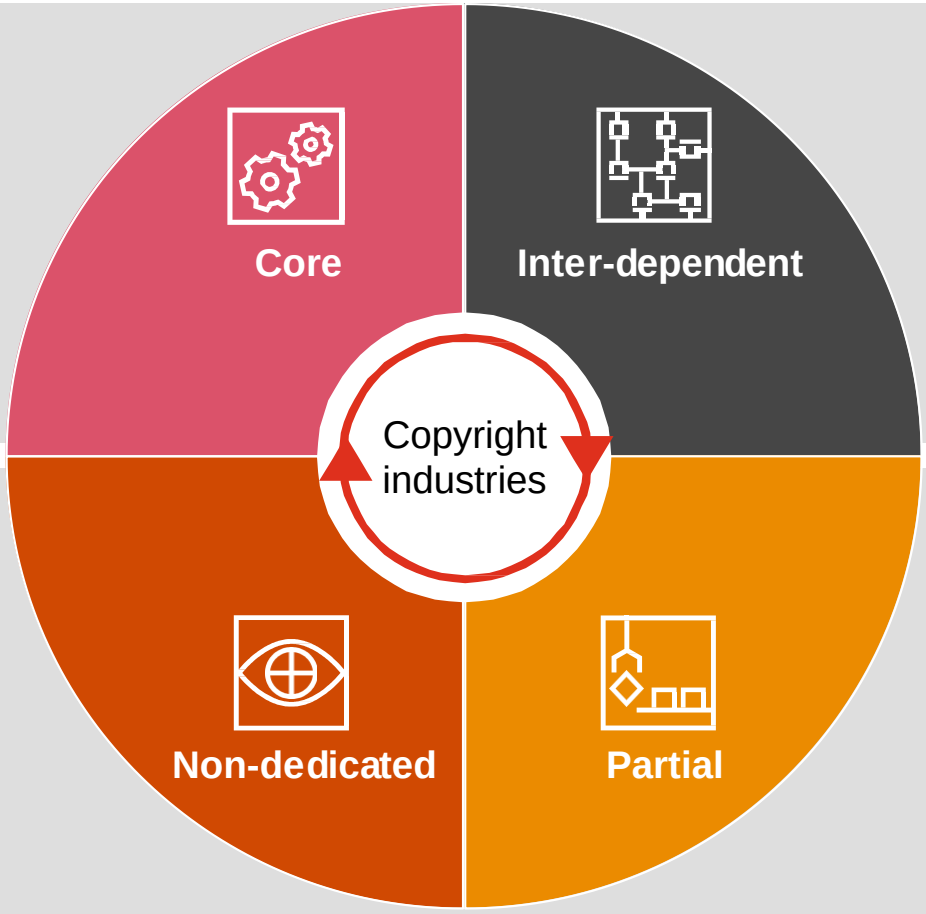
The following table provides a brief description of the four copyright industry groups. A greater level of detail of the specific sectors and products that comprise the copyright industries is provided on the following slide.

Copyright industries	Description
Core	Primarily involved in the creation, manufacture, production, broadcast and distribution of copyrighted works and have a substantial level of copyright activities. These are industries that would not be in existence if not for the copyright subject or matter.
Interdependent	Involved in the manufacture, performance, broadcast and communication of copyright material, in order to support and facilitate the creation of copyrighted works and other protected subject matter.
Partial	Industries where a portion of activities which are related to copyright through manufacture, performance, exhibition, broadcast, communication or distribution and sales.
Non-dedicated	Industries in which a portion of the activities are related to facilitating broadcast, communication, distribution or sales of works and other protected subject matter, and whose activities have not been included in the core copyright industries.

Appendix A – Study methodology (2 of 3)

The following diagram outlines the industries which are included in WIPO's framework for assessing economic contribution of copyright industries (WIPO 2015).

- Press and literature
- Music, theatrical productions & opera
- Motion picture & video
- Radio and television
- Photography
- Software, databases & computer games
- Visual & graphic arts
- Advertising services
- Copyright collecting societies



- Manufacture and sale of:
- Television, audio and video devices,
- Electronic game equipment, and other similar equipment;
- Computers & equipment
- Tablets & smartphones
- Musical instruments

- General wholesale & retailing
- General transportation
- Information & Communication (including wired, wireless, satellite, & internet)

- Apparel, textiles & footwear
- Jewellery & coins
- Other crafts
- Furniture
- Household goods, china & glass
- Wall coverings & carpets
- Toys & games
- Architecture, engineering, surveying
- Interior design
- Museums

Appendix A – Study methodology (3 of 3)

The definition of copyright industries is adopted to capture the direct and flow-on impacts commonly identified using input-output (i.e. multiplier) analysis or 'general equilibrium' macro-economic models of the economy. WIPO considers this approach worthwhile as it allows more consistent cross-country comparisons, and so may be more useful for policy-makers in the longer term.

While 'economic contribution studies are generous in their ascribing economic contribution solely to copyright' (Thorpe 2004, p.45), it is noteworthy that the WIPO methodology does not capture all the value generated by copyright:

- The value of copyright in intermediate goods and services is not included. Many organisations produce copyright materials as intermediate goods which are not explicitly accounted for in official data. Examples may include internal databases, manuals for equipment and processes, teaching materials, movies, pictures, and so on.
- Production of unauthorised copyright products is not included even though they should be considered part of the copyright industries.
- Copyright goods and services produced in non-commercial settings are not included. While there is significant personal activity that is copyright related (e.g. social media) and demonstrates value-adding as a consumption good, their production is unpriced and hence unmeasured.

Furthermore, it should also be remembered that, even though the focus of this report is upon quantification of the copyright industries:

- The true cultural value of copyright cannot be fully captured by measuring the value-added in the cultural industries however accurate those measures are because there are external benefits that are not priced through the marketplace; the national culture, a creative environment and freedom of expression are examples of non-appropriable benefits. (Towse 2000, p.115).
- The economic contribution studies using this WIPO methodology have now been joined by studies prepared which have sought to value industries reliant on copyright expectations (Akker et al 2010; Lateral Economics 2012; Computer & Communications Industry Association 2017). The system of industry classification employed by the WIPO methodology means that, in practice, it is likely that, with the exception of the education sector, the 'exceptions industries' are already captured in the WIPO estimates because organisations that rely on copyright exceptions are also likely to themselves be creating or distributing copyright protected material.

While this report uses the same methodology as the previous WIPO studies of Australian copyright industries (PwC 2008, PwC 2011, PwC 2015b, PwC 2017), there are a number of reasons why the results differ between reports:

- Use of real values rather than nominal values — throughout the report, all figures are represented in real terms (rather than in nominal dollars), which means that values for previous years have been inflated into 2018 dollars and hence removed the effects of inflation from the reported results. This means that values in the previous study (reported in 2008, 2011, 2014 or 2016 dollars) will be different to the figures in this report (reported in 2018 dollars) over similar years. Therefore, figures are comparable over years within this report, but are not directly comparable between this and earlier reports.
- Changes to the source data — the majority of the change in value add as a percentage of GDP (compared to the previous studies) is due to updates and some reclassification of the source data used. While ideally the figures would be directly comparable studies, the WIPO methodology relies on the availability and classification of data available in the country at the time of publication, and variation in the way this source data is collected and collated means results across studies are not necessarily directly comparable.
- This study focusses on the period between 2006 and 2018 where data, under the ANZSIC 2006 industry classifications, is most reliable and complete.

Appendix B – Data outputs (1 of 3)

Industry Value Added, $2018, $million, 2006 – 2018

Copyright Industries	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Core	81,889	85,529	84,551	81,688	84,195	83,204	84,526	86,944	88,181	88,634	90,813	86,434	87,039
Interdependent	21,646	21,532	21,578	20,776	21,823	21,118	22,627	22,868	22,162	22,046	22,369	22,265	22,556
Partial	6,471	6,457	6,618	6,471	6,680	6,484	6,767	6,936	6,813	6,986	6,935	6,872	6,919
Non-dedicated	8,284	8,122	8,007	7,433	7,853	7,463	7,662	7,909	7,469	7,797	8,118	7,612	7,561
Total	**118,290**	**121,640**	**120,753**	**116,368**	**120,551**	**118,268**	**121,581**	**124,657**	**124,625**	**125,463**	**128,234**	**123,183**	**124,075**

Value Added as a Share of GDP, %, 2006 – 2018

Copyright Industries	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Core	6.3%	6.3%	6.0%	5.7%	5.8%	5.6%	5.4%	5.4%	5.4%	5.3%	5.3%	4.9%	4.8%
Interdependent	1.7%	1.6%	1.5%	1.5%	1.5%	1.4%	1.5%	1.4%	1.4%	1.3%	1.3%	1.3%	1.2%
Partial	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Non-dedicated	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%	0.4%
Total	**9.1%**	**9.0%**	**8.6%**	**8.1%**	**8.2%**	**7.9%**	**7.8%**	**7.8%**	**7.6%**	**7.5%**	**7.4%**	**7.0%**	**6.8%**

Appendix B – Data outputs (2 of 3)

Employed Persons, '000, 2006 – 2018

Copyright Industries	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Core	606.7	629.3	629.9	633.5	650.3	653.2	659.2	651.5	661.8	677.7	671.4	677.5	679.4
Interdependent	198.8	197.9	196.0	193.9	191.0	189.6	191.6	190.2	185.9	181.7	181.3	179.5	178.8
Partial	82.7	80.4	82.1	83.7	81.7	80.6	80.6	81.7	81.7	82.0	81.6	82.2	83.3
Non-dedicated	107.8	105.1	104.1	101.9	101.9	99.1	99.4	97.7	97.9	98.8	95.4	94.7	92.5
Total	996.0	1,012.6	1,012.1	1,013.0	1,024.8	1,022.5	1,030.7	1,021.1	1,027.3	1,040.2	1,029.6	1,033.9	1,033.9

Wages, $2018, $million, 2006 – 2018

Copyright Industries	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Core	46,911	49,072	49,250	48,681	48,836	48,492	50,241	52,201	52,337	54,932	56,423	55,537	55,621
Interdependent	11,500	11,460	11,558	11,342	11,546	11,430	11,926	12,246	12,179	12,279	12,555	12,427	12,525
Partial	4,595	4,561	4,739	4,737	4,730	4,641	4,830	4,913	4,893	5,017	5,089	4,997	5,073
Non-dedicated	6,482	6,227	6,046	5,840	5,884	5,444	5,628	5,921	5,865	6,219	6,481	6,251	6,139
Total	69,487	71,319	71,593	70,600	70,997	70,006	72,625	75,281	75,274	78,448	80,548	79,212	79,359

Appendix B – Data outputs (3 of 3)

Imports, $2018, $million, 2006 – 2018

Copyright Industries	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Core	1,235	1,234	1,383	1,585	1,712	1,396	1,233	978	1,057	992	1,036	954	901
Interdependent	27,307	27,306	26,169	25,840	25,638	24,738	23,066	21,815	22,688	25,333	25,825	25,370	27,689
Partial	1,295	1,301	1,285	1,411	1,269	1,233	1,217	1,272	1,405	1,564	1,740	1,654	1,650
Non-dedicated	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	29,837	29,842	28,838	28,837	28,618	27,367	25,516	24,064	25,150	27,889	28,601	27,979	30,240

Exports, $2018, $million, 2006 – 2018

Copyright Industries	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Core	305	305	263	249	254	243	210	129	102	98	97	84	86
Interdependent	3,910	3,910	4,010	3,956	3,516	3,457	3,407	3,372	3,856	4,206	4,312	4,392	4,461
Partial	200	208	196	236	207	197	255	273	231	246	290	293	291
Non-dedicated	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,416	4,422	4,468	4,441	3,977	3,897	3,873	3,774	4,189	4,550	4,698	4,768	4,838

Net Imports, $2018, $million, 2006 – 2018

Copyright Industries	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Core	930	930	1,120	1,336	1,457	1,153	1,023	849	955	894	939	871	815
Interdependent	23,397	23,396	22,160	21,884	22,121	21,282	19,658	18,443	18,832	21,127	21,513	20,978	23,227
Partial	1,095	1,093	1,090	1,176	1,062	1,036	962	998	1,174	1,318	1,451	1,362	1,359
Non-dedicated	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	25,421	25,419	24,369	24,396	24,641	23,470	21,643	20,290	20,962	23,340	23,903	23,211	25,402

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