



PULP PAPER Strategic Review 2014

The comprehensive analysis of the Australian and New Zealand Pulp & Paper Industry



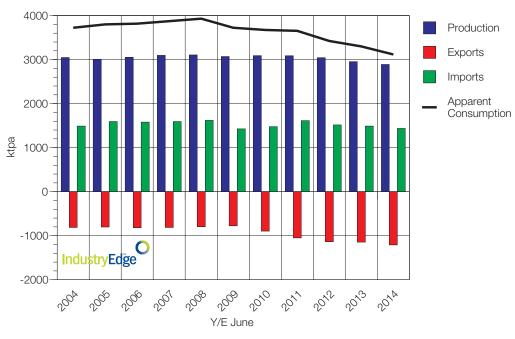
Executive Summary



Demand declined in 2013-14 in Australia and New Zealand

In 2013-14, total demand for all grades of paper and paperboard in Australia declined by 3.4% compared with the prior year. At 3.2 Mt, demand is the lowest it has been in more than a decade.

Demand for Paper & Paperboard in Australia: 2004 - 2014 (ktpa)



Source: ABS & IndustryEdge research and estimates

While the situation was reversed in New Zealand, the entire Australasian industry experienced major changes in 2013-14.

Consumption growth is forecast through to 2019

Despite the dip in demand in 2013-14, econometric forecasts continue to suggest there will be consumption growth in Australia over the five years to the end of 2018-19. The table below provides a summary of the projections contained in the Review.

Forecasts of Total Paper & Paperboard Demand in Australia: 2014* – 2019 (ktpa)

Year to June:	2014*	2015	2016	2017	2018	2019
Forecast	3,186	3,215	3,251	3,287	3,320	3,359
Increment		29	36	36	33	39

Source: ABS Long Term Forecasts Australia, 2014 - 2029 & IndustryEdge research and estimates

* = Actual



Major changes in Australian and New Zealand industry

Over 2013-14, some production capacity was permanently closed, the production focus of an Australasian facility switched to follow the market, business investment and ownership structures changed and international trade became yet more important to the total supply dynamic.

The result is that the headline events and major relevant factors of 2013-14 were:

- All of Australia's supplies of coated cartonboard are now imported. Pre-converted imports of folding boxes also grew very quickly, with implications for the domestic industry (see Section 6 for details and analysis)
- Australia has re-entered the domestic supply of light-weight coated (LWC)
 mechanical papers with a game changing conversion of production capacity
 away from newsprint (see Section 4 for details and analysis)
- Imports continue to dominate many specific markets for paper and paperboard, while exports remain strong for other grades. For some producers, exporting is deliberate strategy (as is the case for recovered paper and kraftliner) and for others, it is beyond their control
- A new and publicly listed company, Orora, was created by Amcor, which also commissioned the new 400 kt per annum B9 recycled containerboard machine at the Botany mill (see Section 6 for details)
- Oji Holdings purchased New Zealand based Carter Holt Harvey Pulp, Paper and Packaging, placing supplies of long, strong fibre for packaging into Asia into stark relief
- The tissue sector was shaken up with the former **SCA Hygiene Australasia** becoming a publicly traded company under the name **Asaleo Care** as the privately owned local company **ABC Tissue** confirmed its dominance in the Australian market. (see Section 5 for details)
- Demand for paper and paperboard continued to be affected by currency strength. Despite depreciation of the Australian dollar over 2013-14, long-term analysis shows it remains historically high, applying continued pressure to domestic manufacturing.

Pulp consumption is growing (Section 2)

Pulp production in Australia has been growing at 2.4% per annum, exports are negligible and imports have fallen by 2.9% over the last decade.

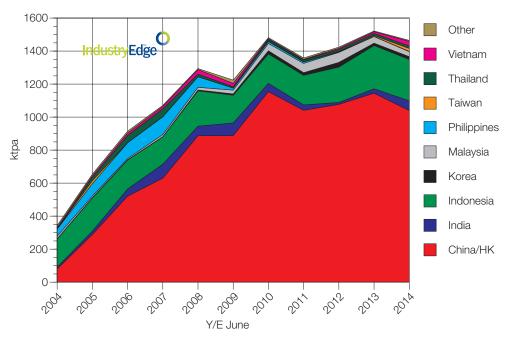
Australian pulp consumption rose marginally to 1,674 kt in 2013-14 and has been growing at 1.2% per annum over the longer term.



Recovered paper exported to the world (Section 2)

Asia's strong demand for packaging materials generated a boom in exports of recovered paper. Shipments are up more than four-fold over the decade and in 2013-14 were above 1.46 Mt, worth AUDFob242M.

Australian Exports of Recovered Paper by Grade: 2004 - 2014 (ktpa)



Source: ABS

The trade continues to be dominated by China, which took 1.04 Mt or 71.2% of shipments in 2013-14, with an average annual rate of increase over the past decade of 29.2%.

Historically, utilisation of recovered paper and paperboard in New Zealand has been low due to the abundant supply of virgin fibre. There is now a strong export market, which in 2013-14 reached 270 kt.

New Zealand's pulp production decreased by 20 kt in 2013-14, recording a third successive annual decline, as domestic paper production declines.

Newsprint consumption is collapsing (Section 3)

Demand for newsprint in Australia fell to 390.0 kt, by far the lowest level in a decade and down 6.0% per annum over that period. The longer-term prognosis is discouraging.

Norske Skog has a monopoly on Australasian production, and the decline in imports in recent years was first at the expense of non-Norske Skog mills and then at the expense of the company's New Zealand mill.

Over the last decade New Zealand's production of newsprint has been slowing at an average annual rate of 9.0% as production collapsed 81 kt (35.8%) in 2013-14.



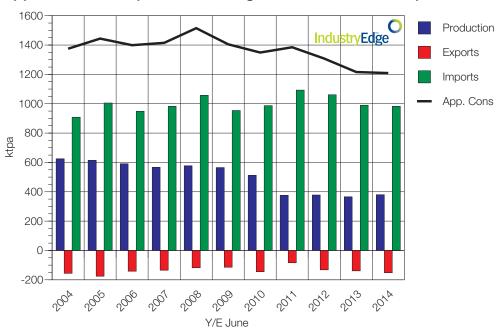
In turn, exports were down 85 kt, while consumption declined marginally and has fallen by an average 2.9% per annum over the longer term.

Printing and communication paper markets driven by imports (Section 4)

Consistent with the rest of the developed world, demand for printing and communication papers is in decline. Evidence suggests the successive annual falls are slowing.

In total, Australian demand for printing and communication papers fell by just 6.2 kt (0.5%) in 2013-14.

Apparent Consumption of Printing & Communication Papers: 2013-14 (ktpa)



Source: ABS

Within each of the major grades, sub-grades have performed very differently.

Production rose by 4.1%, exports rose 9.7% and imports fell 0.8% in 2013-14. Imports in 2013-14 supplied more than 81% of demand.

New investments by **Norske Skog** at Boyer, to manufacture light weight coated mechanicals and **Australian Paper's** soon to be completed deinked pulp manufacturing facility at Maryvale both provide value adding and a key point of differentiation in the domestic market.

New Zealand's printing and communication papers are supplied entirely by imports. Imports and therefore apparent consumption of printing and communication papers were effectively stable at 183.6 kt in 2013-14.

iv



Tissue sector now has three major companies (Section 5)

The tissue sector has shifted from being dominated by two large integrated manufacturers (**Kimberly-Clark Australia** and **Asaleo Care** [formerly SCA Hygiene Australasia]). **ABC Tissue** is now one of the three majors and in 2013, recorded the highest level of retail sales of toilet tissue.

Australian tissue stock demand rose in 2013-14, with an average increase of 1.1% per annum over the last decade.

The value of imported converted tissue products rose to a third consecutive annual record of AUD447.3M, with the long term growth rate at 9.5% per annum.

Apparent consumption of tissue stock in New Zealand was 51.2 kt in 2013-14, rising 1.6% per annum over the last decade, but by a sizable 35.8% compared with the prior year. The value of imports of converted tissue has been growing at 3.2% per annum.

Packaging papers have a global focus (Section 6)

Consumption of packaging and industrial papers and boards declined by 82.5 kt in 2013-14, bringing the long-term growth rate to -0.5% per annum.

Pan-Asian demand, led by China, provides a ready market for packaging exports, relieving the oversupply of both virgin and recycled packaging materials in Australia and New Zealand.

Once undertaken by necessity alone, packaging exports are now a diversification strategy for all of the region's major packaging paper and paperboard suppliers.

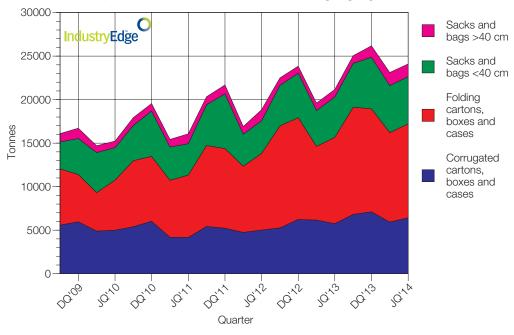
Visy, Carter Holt Harvey (shortly Oji Holdings) and Australian Paper all export virgin fibre, primarily in the form of kraftliner. Orora (formerly Amcor) like Visy, is an exporter of recycled packaging grades.

The closure of the Petrie cartonboard mill in Queensland means Australia's entire supplies of this grade are now imported.

Imports of converted packaging materials grew at 13% in 2013-14. Finished corrugated boxes, folding boxes and sacks are strategically significant.



Australian Imports of Pre-Converted Packaging by Grade: SQ'09 – JQ-14 (ktpa)



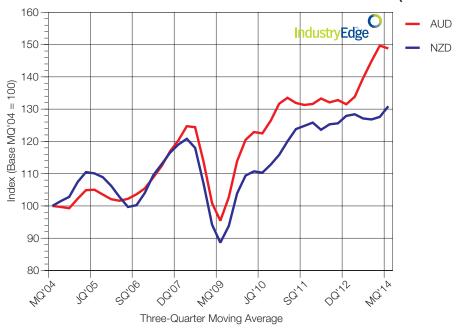
Source: ABS

In New Zealand, production of packaging paper and paperboard rose 6 kt in 2013-14. Over the last decade, apparent consumption of packaging grades has grown 0.3% per annum.

The impact of currency cannot be overestimated

The most potent variable in the Australasian pulp and paper industry is currency value. Both the Australian and New Zealand industries have been subjected to a roller-coaster ride over the last decade, as the following chart shows.

Indices of AUD & NZD vs USD: MQ'04- MQ'14: Index (Base: MQ'04 = 100)



Source: Uni of BC



After a period of fairly sustained appreciation between 2002 and 2007 both currencies went into a slide until mid-2008 (reducing values by nearly 30%) only to climb almost consistently since, with what now appears to have been a brief respite in JQ'14.

Pulp & Paper Strategic Review provides the details and analysis

The *Pulp & Paper Strategic Review* delves into the details of demand and its drivers, considers production in Australia and New Zealand and analyses international trade to explain these events and analyse them in global, regional and domestic contexts.

The 2014 edition of the *Pulp & Paper Strategic Review* is the 23rd consecutive annual publication of the most comprehensive analysis of the Australian and New Zealand pulp and paper industries.

Because of the Review's longevity, the forecasts, data and analysis use almost a quarter of a century's historical data and provide more than 230 data tables and 200 full colour charts. Much of the data can be found only in the Review.

The Review contains eight sections, covering the following topics:

- Section One Pulp & Paper Supply Chain Dynamics
- Section Two Fibre Supplies (including pulp and recovered paper)
- Section Three Newsprint
- Section Four Printing & Communication Papers (including the four major grades and specialties)
- Section Five Tissue
- Section Six Packaging & Industrial Papers
- Section Seven Paper Distribution
- Section Eight References (including manufacturing locations and detailed company profiles)

Sections Three to Six include the detailed forecasts of Australian demand for the major grades of paper through to 2019.

As a subscriber to the 2014 edition of the *Pulp & Paper Strategic Review*, you are welcome to contact the *IndustryEdge* team at any time, with queries, feedback and comment.

Contact us on +61 3 5229 2470 or at info@industryedge.com.au.

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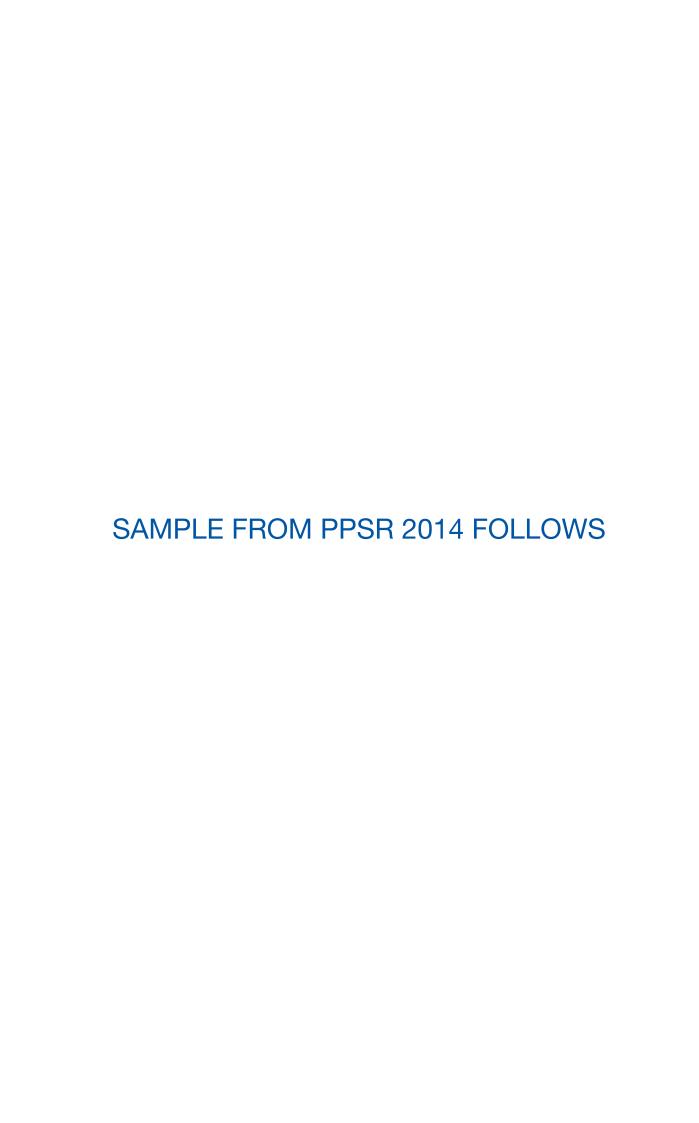
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They are producing energy for markets and even becoming bioprocessing facilities capable of extracting new 'green' chemicals for a wide range of higher value uses.

Thus, while the implications of the technological changes that reduce demand for traditional products is of concern to the traditional pulp and paper industry, the opportunity created by decreased demand, enabled by new technologies and innovations, is of equal and potentially greater significance.

At a macro and global level, technologies and innovations that contribute to an altered global pulp and paper industry, cannot be separated from the most fundamental human concerns related to sustainability.

Conclusion

Continuing global change is experienced by all sectors of the Australian and New Zealand economies and pulp and paper industries. Each year the extent of change grows and the pressure of the mega trends grow. Endless change is complex because there is little time for reflection from one event to the next.

All the sophisticated market participants can do is operate to their best comprehension of the prevailing directions and trends.

1.2 Global Paper Markets

Introduction

As a general rule, the higher the value of a paper product the more it will be traded internationally. For this reason, printing and communication papers are widely traded. Imports make up four-fifths of Australia's supply.

On the other hand, packaging paper and paperboard, especially corrugated container materials, are of relatively lower value, have strong natural protection, especially if the local participants are integrated (which is the case in Australia) and international supply and demand tend to be less important.

The world market for printing and communication papers has been in a state of flux due to rapid increases in supply of high quality paper out of Asia, where capacity is generally installed ahead of demand.

Set out below is a summary of forecasts for the world market for printing and communication papers developed by international paper industry consultants, EMGE.

Printing & Communication Papers

According to the United Nations Food & Agriculture Organisation (FAO), global paper and paperboard production totalled 397 Mt in 2013.

EMGE's analysis for 2014 indicates aggregate demand of 92.4 Mt for printing and communication papers in 2013, falling to 91.4 Mt in 2014 or around 23% of the total estimated by the FAO.

EMGE's demand forecasts from through to 2018 shows an average annual decline of 0.8%, to 88.5 Mt.

Demand

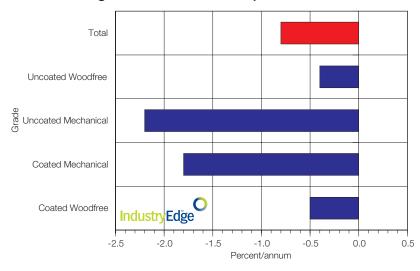
EMGE states, in the current World Graphic Papers Report issued in September 2014, that global demand for all four major grades will be negative across the next five years. EMGE's prognosis is that sustained growth is largely over for printing and communication papers, with pockets of growth by grade and region.

The lingering effects of languid economic growth continue to impact markets in North America and Europe and are expected to continue to do so as the end of US interventionist monetary policy takes full effect. Global demand for printing and writing papers will continue to lag economic cycles through much of the period to 2018.

It is unclear to what extent, but the impact on printing and communication paper consumption is clearly being compounded by the rise of digital communications.

The following chart sets out EMGE's revised global market forecast demand dynamics for the various printing and communication paper grades for the period 2013 – 2018.

World Printing & Communication Paper Demand Growth Forecasts: 2013 - 2018 (% pa)

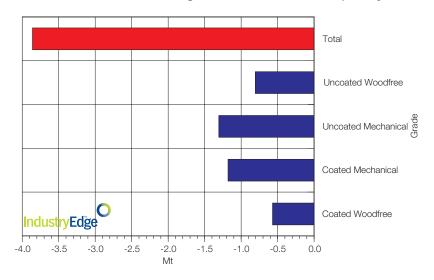


Source: EMGE

Demand for uncoated woodfrees, the staple of the commercial world, is forecast to decline at 0.4% per annum, for coated mechanicals at 1.8% per annum, for uncoated mechanicals at 2.2% per annum and for coated woodfrees at 0.5% per annum.

The chart below shows how these negative growth rate forecasts will impact on the output for the various grades.

World Demand for Printing & Communication Paper by Grade: 2013 - 2018 (Mt)



Source: EMGE

Over the next five years, global demand for uncoated woodfrees is forecast to fall by 0.805 Mt, for coated mechanicals 1.180 Mt, for uncoated mechanicals 1.305 Mt and for coated woodfrees 0.570 Mt.

Supply, on the other hand, is forecast to expand in Asia, especially China. This is despite the increasing concerns about the sustainability of Chinese growth as it switches to a domestic consumption focus. However, at the same time, China continues to engage in comprehensive measures and activities to reduce capacity in inefficient facilities.

Supply

EMGE's forecasts for capacity adjustment across the various world regions are as follows.

Total
Others
North America
Japan
Western Europe
Other Asia
China
Inclustry Edge
-2.5 -2.0 -1.5 -1.0 -0.5 0.0 0.5 1.0 1.5

Printing & Communication Paper Capacity by World Region: 2013 – 2018 (Mt)

Source: EMGE

The projection is for continuing strong capacity creation in China (1.225 Mt over the five years) and in the rest of Asia excluding Japan (which includes Australia & NZ) 0.595 Mt.

However, with the centre of production moving to Asia, there will be capacity reductions in what were previously major producing regions, Western Europe will lose 2.290 Mt, North America 1.830 Mt and for Japan 0.100 Mt. These offsetting reductions in capacity will reduce global capacity by 2.020 Mt over the five years to 2018.

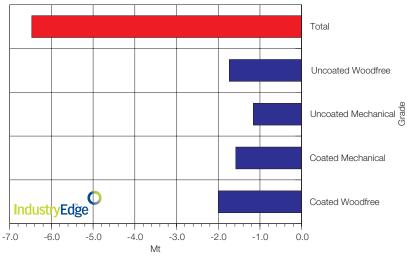
The significance of these forecasts for Australia and New Zealand lies in the net increase in regional capacity of 1.820 Mt, 67.3% of which will be in China. Rationalisation of capacity away from the established producer nations towards the new generation of Asian manufacturers is continuing.

Continuing imbalances in supply and demand will undermine most attempts to reintroduce logical pricing into the international market for printing and communication papers.

The following table is inclusive of not just the announced capacity closures, but also the projected closures, which will occur due to the extensive over supply, with the predicted reductions in capacity being applied to the appropriate grades.

The following table suggests how the reductions in capacity might be spread across the grades.

World Capacity for Printing & Communication Papers by Grade: 2013 – 2018 (Mt)



Source: EMGE

Of the 6.470 Mt forecast decrease in printing and communication paper capacity worldwide, forecast declines by major grade are 1.735 Mt for uncoated woodfrees, 1.155 Mt for uncoated mechanicals, 1.580 Mt for coated mechanicals and 2.000 Mt for coated woodfrees.

Demand-Supply Balance

Based on announced start-ups and closures, in EMGE's analysis the level of printing and communication paper capacity in 2014 was 106.8 Mt and the level of utilisation was 86%, which resulted in production of 91.5 Mt. By 2018, capacity will decrease by 6.470 Mt to 102.8 Mt, delivering an estimated capacity utilisation of 87%.

Rises in capacity utilisation will not encourage price increases and the continuing process of adjustment, whereby the production base for the printing and communication papers sector shifts progressively from the traditional centres of manufacture to non-Japan Asia, will be more significant. China is unlikely to draw back from creating further capacity regardless of world demand. In so doing it will force the closure of more of the higher-cost mills in the traditional paper producing regions.

Packaging, Container and Cartonboard Markets

Packaging paper and paperboard manufacturing companies that supply the container and cartonboard markets are directly and strongly impacted by the levels of economic activity in their regions of the world, and in the world as a whole. It might be imagined that global consumption comes wrapped in boxes and thus, as consumption rises and falls, so too does the consumption of packaging materials.

In essence, packaging is an integrated part of domestic and regional manufacturing. It does not have an independent market. Thus, while supplies of raw material for manufacturing packaging material, such as recycled paper, are internationally traded and commodified, the packaging materials themselves are far less likely to be traded as extensively.

The result is that aggregate data and forecasts are largely based on estimates, and are far less reliable than those available for printing and communications papers.

Tissue Markets

As described at the beginning of this chapter, the markets for tissue products tend to be more regional and domestic than international. Global aggregate data and international trade figures, leading to forecasts of global demand growth are not generally available or reliable. Because tissue product consumption is dictated by living standards, per capita consumption of tissue products is quite variable across the globe and accordingly, quite unpredictable.

In developed countries, like Australia and New Zealand, consumption of tissue products is a necessity and with stable populations, demand is therefore inelastic. In developing countries, however, the opposite dynamics may apply, with potentially large growth in demand in one year and a decline in another year, based on changing economic circumstances.

For Australia and New Zealand, these dynamics are explored in detail in the Review.

Specialty Paper Markets

In general, specialty papers are a subset of printing and communications papers and in some cases, of tissue papers. The category includes products such as thermal, carbon and greaseproof papers. Global demand is almost impossible to predict with much certainty, such is the discreet nature of the products and markets.

1.3 Demand Drivers for Paper and Paper Products

Introduction

In general, demand drivers for all grades of paper and paper products are dictated by broad economic indicators. With a stable population and relatively high living standards, Australian demand for some grades and types of paper is unlikely to increase. Tissue papers present as the most prominent example.

However, within and for particular grades there are specific demand drivers and indices. This has been observed in recent years with demand for printing and communications papers being adversely affected by the increased availability of information and data via digital means.

While relevant across all of the grades, these drivers and indices of demand are most significant for printing and communications papers. The major demand drivers for printing and communications papers are:

- Levels of advertising expenditure in the print media are of particular relevance for demand for publication
 and commercial printing papers, most notably the uncoated mechanical (UCM) and coated mechanical
 (CM) grades that include newsprint and to some extent the coated woodfree (CWF) grades;
- Printing, publishing and recorded media performance, which is being dramatically impacted by technology, is of particular importance to the demand for printing and publishing papers, which are typically the uncoated woodfree (UCWF) and the majority of CWF papers; and
- General economic conditions, levels of economic activity and growth and transaction types and formats
 are especially important for papers included in the communication and information papers sector that
 include both UCWF and CWF papers and some UCM papers, but typically in their more transformed and
 consumer packaged (boxed or wrapped reams for example) versions.

Each of these demand drivers is considered below, in detail.

Publication & Commercial Printing Papers

The main demand driver in the publication and commercial printing papers' sector is the level of advertising expenditure in the print media.

Advertising Expenditure

Commercial Economic Advisory Service of Australia (CEASA) tracks advertising expenditure in the main media. In recent years CEASA has monitored online advertising. It does not, however, record expenditure on advertising catalogues. The Australian Catalogue Association (ACA) provides this information.

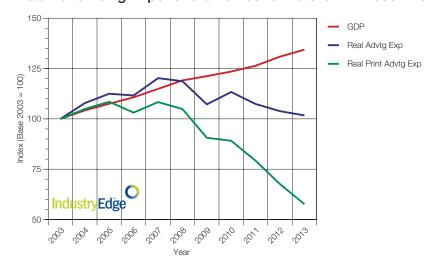
It is noteworthy that advertising expenditure in the main media does not quantify spending on brochures and promotional material of the type that constitutes a considerable part of the demand for general commercial printers – what could be called the sheet-fed sector. Main print media expenditure as documented here, is for the most part confined to the reel-fed sector. Whilst obviously not all encompassing, measuring the reel-fed sector is considered a sound indicator of business confidence as it affects the printing industry.

With the advent of the Internet, advertising expenditure changed in a manner not possible to measure by conventional means. What is bad news for the printing and publishing industry may provide a small benefit for office paper supply in that the more people who use the internet as a buying device, the more they are likely to print off information for comparative purposes.

Advertising Expenditure & Economic Growth

The following chart shows total advertising expenditure and print advertising expenditure adjusted for price increases, indexed against economic growth.

Real Advertising Expenditure vs Economic Growth: 2003 - 2013: Index (Base: 2003 = 100)



Source: CEASA, Long Term Forecasts Australia, 2014 - 2029 & IndustryEdge estimates

The chart shows advertising expenditure falling well below the expansion of GDP. Real advertising expenditure in the print media continues to fare very badly when compared to advances in real GDP and is diverging at a disconcertingly rapid rate.

Advertising Expenditure vs Paper Consumption

It is adequately demonstrated throughout this strategic review that paper prices are not keeping pace with inflation. The upshot is that advertisers are getting much more paper for their expenditure on print advertising, as the following chart shows.

Real Print Adverstising Expenditure vs Paper Supplied: 2003 - 2013: Index (Base: 2003 = 100)



Source: ABS, Long Term Forecasts Australia, 2014 - 2029 & CEASA

Historically and prior to 2003 when this chart commences, as advertising expenditure fell in real terms, so too did the volume of paper supplied.

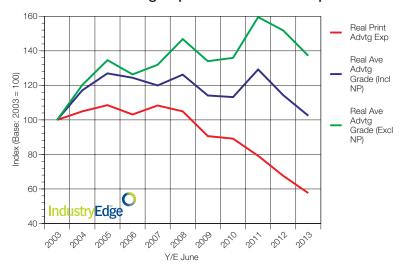
However, over much of the last decade, paper demand recovered quite dramatically, but real print advertising expenditure has almost continuously declined and has not taken a positive step since 2007.

The inference is that paper is being supplied at ever-lower prices and there is severe downward pressure on the real price of paper, regardless of global demand and supply dynamics.

Advertising Expenditure vs Paper Prices

The following chart indexes real print advertising expenditure against the real prices paid for advertising grade paper. Two series are presented: one that includes newsprint in the real average price calculation, and one that excludes it.

Real Print Advertising Expenditure vs Real Paper Prices: 2003 - 2013: Index (Base: 2003 = 100)



Source: ABS, RBA & CEASA

NB: Advertising expenditure is compiled on a calendar year basis and the figure for print advertising expenditure, here adjusted for inflation, is an IndustryEdge estimate based on forecast expenditure on print media by PwC

The chart demonstrates how advertising expenditure on print (already lagging well behind GDP) is well below what it was a decade ago in real terms, having declined by more than 40% over the period.

This series on advertising expenditure in the print media has been set against indices of the weighted average price of all advertising grades (newsprint, uncoated mechanicals, coated mechanicals and coated woodfrees) and advertising grades minus newsprint. The contrast between the latter two demonstrates how the price of newsprint, set according to the long-term contract formula for Australian newsprint publishers, had bolstered that index for some years. However, once the global newsprint surplus took hold and began to result in declining newsprint prices, the real price of non-newsprint grades began to fall steeply and in line with the declines in real advertising expenditure.

The index of advertising grades excluding newsprint has fallen sharply after rising for the previous three years.

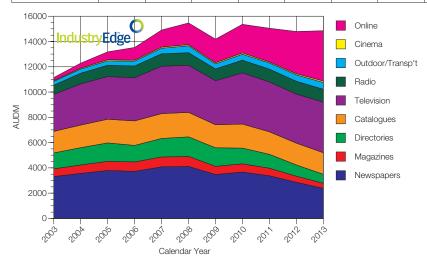
In summary, whilst printers and publishers have not received an increase in advertising revenue in real terms over the last decade, they have been able to buy paper at almost continually reducing real prices. Of significance is that the decline in real print advertising expenditure has been very steep since 2010.

Long-term Advertising Expenditure in Australia's Main Media

The following table and chart set out a summary of advertising expenditure in the main media.

Long-Term Advertising Expenditure in the Main Media in Australia: 2003 - 2013 (AUDM)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	+/- pa
Newspapers	3,314	3,565	3,790	3,723	4,076	4,117	3,472	3,665	3,373	2,863	2,383	-3.2
Magazine's	600	664	727	749	780	788	646	653	598	476	397	-4.0
Directories	1,265	1,366	1,458	1,306	1,472	1,547	1,471	1,242	1,102	894	714	-5.6
Catalogue#	1,704	1,790	1,869	1,938	1,965	1,939	1,819	1,902	1,779	1,716	1,700	-
Sub-total Print	6,883	7,385	7,844	7,716	8,293	8,391	7,408	7,462	6,852	5,949	5,194	-2.8
Television	2,924	3,266	3,376	3,420	3,750	3,729	3,484	4,056	3,950	3,892	4,000	3.2
Radio	737	841	898	925	984	992	936	1,001	1,008	1,012	1,027	3.4
O-door/Transp't	297	327	354	379	436	454	399	477	494	502	544	6.2
Cinema	66	74	84	86	93	96	89	99	79	89	102	4.4
Online	236	388	620	1,001	1,346	1,710	1,871	2,268	2,660	3,343	3,986	32.7
Sub-total Other	4,260	4,896	5,332	5,811	6,069	6,982	6,779	7,887	8,211	8,828	9,659	8.5
Grand Total	11,143	12,281	13,176	13,527	14,902	15,373	14,187	15,349	15,063	14,777	14,853	2.9



Source: CEASA, ACA & IndustryEdge estimates

In 2013, advertising expenditure in the main media rose by AUD76M to AUD14,853M, arresting successive years of decline.

The long-term growth rate is 2.9% per annum, which is consistent with the average level of GDP growth over the decade.

The extraordinary increase in expenditure that took place over calendar 2007 was at least to some extent, a result of higher costs. The ABS' Manufacturing Cost Index rose 7.9% in that year, so a substantial part of the increase in advertising expenditure resulted from increased costs, rather than an increase in the amount of advertising. There was, nonetheless, a significant increase in the actual volume of advertising because the demand for advertising driven grades was very strong. Any increase in costs over recent years has been in part offset by the decline, both nominal and real, in paper prices for almost every grade.

In 2013, all print advertising categories declined for the second consecutive year. Advertising expenditure in newspapers fell by a reported AUD480M, on the previous year, booking an AUD990M decline over just two years.

Estimated catalogue advertising expenditure declined just AUD16M to AUD1,700M, driven by lower average prices for catalogue grade paper substrates and light-weighting that resulted in more catalogue pages being produced per tonne of paper.

Over the decade, newsprint advertising has declined by 3.2% per annum on average, while for catalogues it has finished the decade almost exactly where it started.

Print's Long-term Share of Advertising

The combined share of total advertising expenditure held by the print media is declining by 2.8% per annum long-term.

Print's long-term share has fallen substantially – from 61.8% to 35.0% over the period, with newspapers experiencing the main decline, falling from 29.7% of total expenditure to 16.0% over the period. In 2012, newspapers were relegated to third place by the rapid rise in online advertising, and the continuing strength of television advertising. It is a position from which they seem unlikely to recover, especially as the publishers own much of the online presence that attracts its own growing advertising.

After years of solid growth, advertising in catalogues is experiencing a softening of expenditure, but remains a healthy sector, with lower basis weight sheets providing advertisers with more printable surface per tonne.

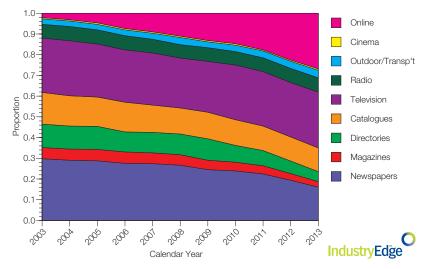
In the non-print media, television, which is growing at an annual average rate of 3.2% per annum, has been keeping up with the overall growth in advertising expenditure. While it holds the largest position in 2013, it is anticipated that expenditure on online advertising will surpass it in 2014.

Outdoor and transport is the only traditional medium that has grown its share of advertising expenditure equal to or faster than the total average.

Traditional media forms are declining because of the rapid growth in online advertising. From the first record of little more than a decade ago, online advertising has increased quickly and now accounts for 26.8%, or AUD3.98bn, of the total advertising expenditure.

The following chart shows the above value data in proportional terms.

Advertising Expenditure in the Main Media in Australia: 2003 - 2013 (%)



Source: Commercial & Economic Advisory Service, ACA & IndustryEdge estimates

Long-term Individual Media Shares

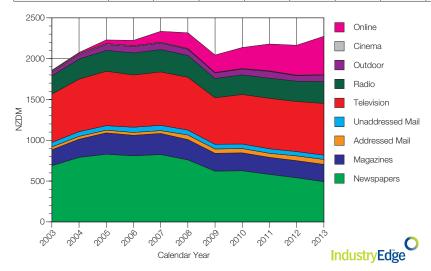
The proportional analysis shows the growth impact of online advertising. However, the reality is, even if online advertising is extracted from the picture, print's share falls from 63.1% in 2003 to 47.8% in 2013. As observed earlier, it should be borne in mind that this analysis relates, for the most part, to the demand for publication grades; newsprint, uncoated mechanicals, coated mechanicals and coated woodfree magazine reels. It does not relate to the mainstay of the paper merchant demand, general commercial printing, for which there does not appear to be a satisfactory measure available.

Long-term Advertising Expenditure in New Zealand's Main Media

The following table and chart set out long-term advertising expenditure in the main media in New Zealand.

Long-Term Advertising Expenditure in the Main Media in New Zealand: 2003 - 2013 (NZDM)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	+/- pa
Newspapers	689	790	830	810	826	760	623	627	582	540	494	-3.3
Magazines	194	223	260	251	257	249	217	219	209	210	211	0.8
Addressed Mail	35	34	34	35	36	56	53	53	50	58	60	5.5
Unaddressed Mail	56	59	56	64	65	61	58	55	55	54	53	-0.5
Sub-total Print	974	1,106	1,180	1,160	1,184	1,126	951	954	896	862	818	1.7
Television	592	643	666	641	654	647	570	607	618	614	634	0.7
Radio	224	247	256	269	274	268	236	241	247	248	267	1.8
Outdoor	47	51	72	79	78	74	68	70	83	67	76	4.9
Cinema	12	13	11	10	10	9	6	8	7	7	8	-4.0
Online	8	15	44	65	135	193	214	257	328	366	471	50.3
Sub-total Other	883	969	1,049	1,064	1,151	1,191	1,094	1,183	1,283	1,302	1456	5.1
Grand Total	1,857	2,075	2,229	2,224	2,335	2,317	2,045	2,137	2,179	2,164	2,274	2.0

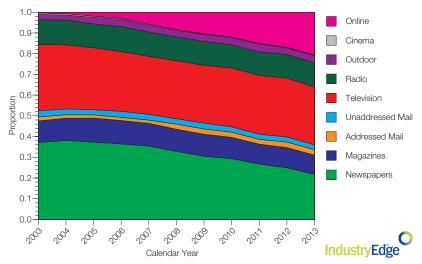


Source: NZ Advertising Standards Authority Inc

Over the three years to 2005, advertising expenditure in New Zealand increased very rapidly. New Zealand advertising expenditure reached its highest level in 2008. It then fell slightly, before dropping by 11.7% in 2009. In 2010, the reported figures showed a very significant rise in the expenditure for television advertising. The long-term growth of all advertising is 2.2% per annum, but for print is just 1.7% per annum, while for other forms of advertising, the long-term growth rate is 5.1%.

The following shows the market shares of the various media in New Zealand.

Long-Term Advertising Expenditure in the Main Media in New Zealand: 2003 - 2013: (%)



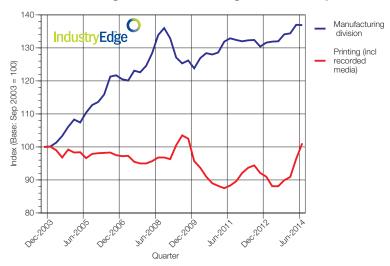
Source: NZ Advertising Standards Authority Inc

As with Australia, because advertising in newspapers is growing slower than the total, newspapers are losing market share – down from 37.1% in 2003 to 21.7% in 2013. Other forms of print media have declined against growing advertising in television and more recently, rampant growth in online advertising.

The Printing & Publishing Sector

The vigour of the printing and publishing industry, the main client sector of the paper industry, has a large influence on paper sales in Australia. The following chart shows the performance of the printing, publishing and recorded media sector of the economy compared with overall manufacturing on a producer price basis.

Index of Printing vs Manufacturing Division: Sep'03 – Jun'14 Index (Base: Sep'03 = 100)



Source: ABS

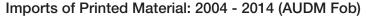
The chart shows that while the cost of production of general manufacturing has increased over the decade, the costs of printing (other publishing and recorded media) have declined and only flattened out in 2013-14 thanks to currency depreciation that has increased some prices and sees them sitting almost exactly where they were a decade ago.

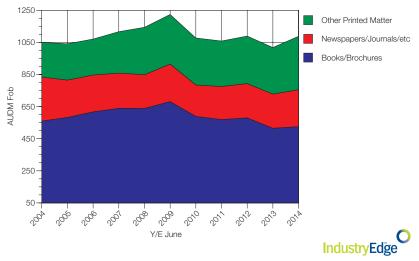
Regardless, the differential with the cost of general manufacturing is around 35% over the decade, demonstrating the highly competitive nature of the sector and the struggle it has to operate profitability. It goes some way in explaining why paper manufacturers are being paid less for supplying the printer's substrate.

In some respects, declining imports of newspapers, journals and periodicals has been a welcome relief for publishers, even though it is just as demand driven as domestic supplies. Over the last decade, the value of imports in this category has declined by 1.7% per annum to AUD230.6M. These are money figures, so the situation is more favourable in real terms.

Regarding the other two categories, Books/Brochures and Other Printed Matter, the situation is not so sanguine. Money values increased in the few years up to 2008-09, then generally trended down until 2013-14 when it appears the depreciation of the Australian dollar drove increases in the value of most imported pre-printed material.

The following chart shows imports of printed material for the last decade.





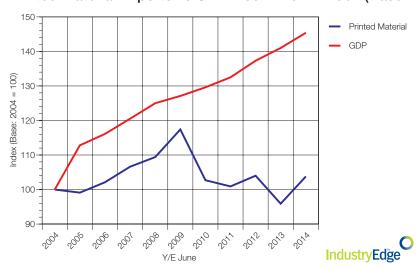
Source: ABS & IndustryEdge estimates

Imports of books and brochures, the largest category, rose to peak at AUDFob631.5M in 2008-09. They subsequently fell very sharply through to 2012-13 before recovering some ground to reach AUDFob475.2M in 2013-14. It must be noted that statistics only record the official imports for books and brochures under the harmonised codes, this process does not pick up the books and brochures that are being purchased through the Internet and shipped as personal postal items. Therefore the drop in shipments in recent years has been influenced by the high value of the AUD against many other trading currencies, the purchase of cheaper books offshore and the move away from printed matter to the electronic format.

Other Printed Matter imports were AUDFob221.4M in 2002-03. They increased to AUDFob308.8M by 2008-09 and after successive years of decline since, rose 14.9% in 2013-14 to achieve a new record of AUDFob332.4M. It is likely there is some misclassification and that this grab bag category includes a range of printed material.

Printed material imports totalled AUDFob1,038.2M in 2013-14, representing a substantial import replacement market, although not all of this would be material originating in Australia and being printed overseas. The value of imported printed material has ended the decade 3.8% higher in nominal terms.

Printed Material Imports vs GDP: 2004 - 2014: Index (Base: 2004 = 100)



Source: ABS & Long Term Forecasts Australia, 2014 - 2029 & IndustryEdge estimates

For the first six years of the decade, local printers appear to have invested heavily and, as the data suggests, been very successful in reducing the amount of Australian work printed offshore. Between 2005-06 and 2008-09, somewhat ominously, the value of work printed overseas rose again, paralleling the growth in the economy. In 2008-09 it grew faster than the economy – at 7.3% in money terms – an increase of nearly 4% in real terms.

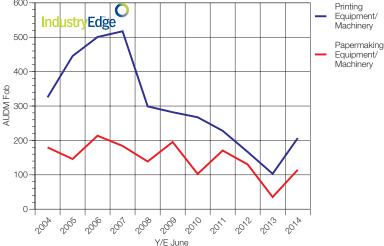
In 2009-10, the party was over and imports tumbled by 12.5%, and again in each of 2011-12 and 2012-13. Ground lost in 2013 was recovered in 2014.

Part of the slide in the value of imported printed material will be attributable to the strong exchange rate of the Australia dollar, with the price of imported material falling in local terms through to the last financial year when the Australian dollar depreciated in a healthy and not unexpected manner.

The printing industry provides something of an example for the Australian paper industry, which has consistently lost market share to overseas producers. In 2003-04, the domestic paper industry supplied 34.0% of Australia's printing and communication paper requirements, but by 2013-14 that proportion had fallen to 18.8%. This comparative performance is all the worse because a local market for an unfinished good such as paper is a lot easier to defend against imports, than is a finished good such as printed material.

The following chart shows imports of printing equipment compared to imports of paper making equipment.

Imports of Printing vs Papermaking Equipment: 2004 - 2014 (AUDM Fob)



Source: ABS & IndustryEdge estimates

In 2003-04, the printing industry spent close to double the paper manufacturing industry on imports of new equipment (AUD180M vs AUD325M). Until 2010-11, the printing industry was for the most part generally investing at least twice the rate of the paper industry, which is perhaps surprising given the highly capital intensive nature of paper manufacture.

A more nuanced view is that the extreme costs of papermaking equipment are so great that there is a barrier to entry (and therefore to domestic competition) that is not replicated in the printing sector. The increased use of digital printing equipment, the cost of which is far lower than traditional printing, makes entry to the printing industry significantly easier than was once the case.

By 2012-13, pulp and paper manufacturing investment in overseas equipment fell to AUD35M, while printing industry investment fell to the lowest level in a decade at just AUD103M.

The partial recovery in 2013-14 saw papermaking equipment imports reach AUD115M and printing equipment imports AUD207M.

The long-term trend in pulp and paper investments is much worse than it seems because, apart from the Maryvale pulpmill upgrade, most of the investment in the paper industry in recent years has been in packaging (and to a lesser extent, tissue manufacture) not in printing and communication papers. Printing and communication paper manufacture in Australia is being subjected to a process of gradual disinvestment with machines closing and not being replaced by more modern equipment, although importantly conversion of the Boyermills PM2 to manufacture light-weight coated mechanical papers is a positive development.

Communication & Information Papers

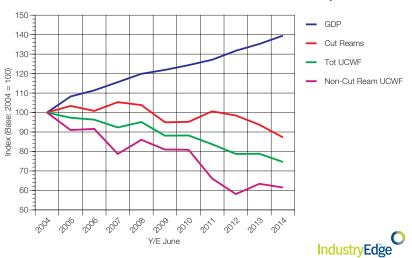
Communication and Information Papers are primarily uncoated woodfree (UCWF) papers and a smaller quantity of some uncoated mechanical (UCM) papers. They are divided into two main categories: Cut Reams and 'Other'. As will be demonstrated in this Review, the Cut Reams category was very positively impacted by technology in the first half of the period under review, but the format cannibalised demand for many of the 'Other' uncoated woodfrees, which have also been adversely impacted by electronic technology.

Economic activity and technology are perceived as the main demand drivers, but it is difficult to distinguish between the two. GDP growth is used as a base for increases in the level of economic activity, whilst statistics on various forms of payments provide an indicator of the impact of electronic technology.

Economic Activity

The following chart shows an index of GDP growth since 2004 and sets it against indices of consumption of uncoated woodfrees – the general communication and information papers grade, and Cut Reams, the archetypal office paper..

GDP vs Apparent Consumption of Total Uncoated Woodfree Papers, Cut Reams & Non-Cut Ream Uncoated Woodfrees: 2004 - 2014: Index (Base: 2004 = 100)



Source: ABS, Long Term Forecasts Australia, 2014 - 2029 & IndustryEdge research and estimates

In 2013-14, cut reams constituted 60% of uncoated woodfree consumption. Until 2010-11, despite some ups and downs, consumption had remained stable. In the three years since it has declined sharply, but outperforms uncoated woodfrees other than cut reams.

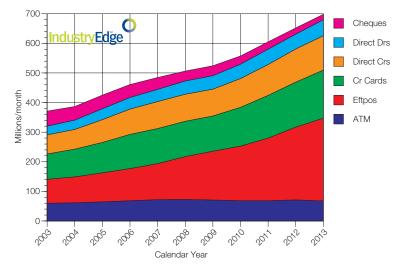
Over the last decade, uncoated woodfree consumption has declined 25.4%, with cut reams holding the average up with its softer decline of 12.8%. When cut reams are removed, the decline in consumption of the other uncoated woodfree grades is a very large 38.5% or an average 4.7% per annum.

Electronic Technology

The use of paper to make payments is declining fairly quickly and is being replaced by electronic transactions of various types, mainly card-based, as the following table and chart show.

Direct, Card & Cheque Transactions: 2003 – 2013 (Items, Millions Per Month)

Year	ATM	Eftpos	Cr Cards	Direct Crs	Direct Drs	Cheques	Total
2003	59.8	81.0	85.6	64.6	29.6	50.6	371.2
2004	61.6	87.4	93.6	66.7	31.4	45.8	386.5
2005	64.4	98.1	102.9	76.8	37.0	46.0	425.2
2006	68.4	108.5	115.7	85.3	39.5	43.3	460.7
2007	72.0	121.9	118.3	91.1	41.1	40.3	484.7
2008	72.9	144.6	119.3	91.4	44.6	33.7	506.5
2009	70.8	165.0	118.9	90.7	45.4	33.6	524.4
2010	68.4	184.6	131.0	97.0	48.6	27.6	557.2
2011	68.5	211.5	144.2	104.5	51.5	25.0	605.2
2012	71.3	245.5	152.1	112.0	50.2	21.0	652.1
2013	67.7	279.6	162.6	115.7	54.1	18.4	698.1
+/-% pa	1.2	13.2	6.6	6.0	6.2	-9.6	6.5



Source: Australian Payments Clearing Association (www.apca.com.au). Figures for ATM, Eftpos and credit cards sourced from the Reserve Bank of Australia

Total payments have been increasing at an annual average rate of 6.5%, but the number of cheques being drawn is declining at 9.6% per annum. On the other hand, electronic transactions are the main growth drivers. The fastest growing form of payment is Eftpos at 13.2%. Direct debits, direct credits and credit cards have grown at very similar average rates over the decade.

Credit card transactions have, in the past, meant growing demand for carbonless triplicates, but with online transactions increasing, these have largely been replaced by the much cheaper thermally-printed plain paper dockets and receipt/tax invoices machine-printed at the point of sale. Paper is still being used, but quantities are smaller, the quality is much lower and the services of a printery are not required.

The latest development of contactless transactions is further reducing the consumption of thermally printed invoices and receipts.

Decline in cheque usage also means a decline in paper demand for remittance advices and envelopes.

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